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Original Articles.

THE VALUE OF MERCURIC CHLORIDE AS A PRACTICAL DISINFECTANT.

BY V. C. VAUGHAN, M.D., OF ANN ARBOR, MICHIGAN.

The report of the Committee of the American Public Health Association on Disinfectants, together with the experimental investigation of others, has given great prominence to the employment of mercuric chloride as a germicide. Recently[1] Dr. William B. Hills, of Cambridge, Mass., has criticized the above-mentioned report so far as it recommends mercuric chloride. As this is a matter of great practical importance, I propose in this paper to notice the points raised in this criticism. Dr. Hills does not seem to have made any biological or chemical tests himself, but founds his opinion upon what he deems to be well-established facts. The critic uses severe language with reference to the committee, and asserts that "it is not creditable" that the committee should have made the recommendations referred to upon the experimental evidence presented.

In the first place, Dr. Hills states that corrosive sublimate is rendered insoluble when brought in contact with organic matter. He says: "It is, however, a well-known chemical fact that the corrosive sublimate *is* destroyed, or at least undergoes chemical changes, when brought into contact with organic matter. It is immediately converted by albumen to the insoluble albuminate of mercury. For this reason, albumen is recognized as the most efficient antidote in cases of poisoning by corrosive sublimate."

Now, let us enquire into the well-known chemical fact referred to by Dr. Hills. I endeavoured to show in the report, which Dr. Hills criticizes, that the albuminate of mercury *is* soluble in solutions containing organic matter, and that it does diffuse through such solutions; but as Dr. Hills places his opinion against my experience, we will see what others say upon this point. Merck,[2] of Darmstadt, says that the albuminate of mercury, which he manufactures according to the formula of Schneider,[3] is readily soluble in blood-serum, meat-broth, sodium chloride, etc. Every physician knows that the albuminate of mercury is used hypodermically on account of its ready solubility and non-irritating properties. For the preparation of this compound either egg-albumen, blood-serum, or peptone is used. Merck uses egg-albumen, while Filehne[4] recommends the following formula: "15 grams of dry peptones, 10 grams of bichloride of mercury, 15 grams of ammonia chloride, and enough water and glycerine so that each cubic centimetre *of the solution* shall contain from two to four milligrams of mercuric chloride." Other formulæ are given by other authors. In one place Dr. Hills admits that the albuminate of mercury is "slightly soluble," but he says "the amount redissolved is very small." Filehne's solution contains more than two and a half drachms of the bichloride. This amount would hardly be called "very small." When Dr. Hills says that albumen is recognized as the most efficient antidote in cases of poisoning by corrosive sublimate *on account of the insolubility of the albuminate of mercury*, he teaches a doctrine which, I must admit, is wholly new to me. Mercuric bichloride owes its corrosive properties to the avidity with which it combines with proteids. In cases of poisoning by this salt we give the albumen in order to supply a proteid with which the poison can combine without injury to the walls of the stomach, *and then we hasten* to give an emetic. What would be the result if we should leave the albuminate of mercury in the stomach? If this compound is so insoluble, why do we give the emetic? The idea that the albuminate of mercury would not be readily absorbed by the stomach is, to use some of Dr. Hills' vigorous English, "so absurd that it would not deserve serious notice were it not for the fact" that it has been suggested by one so eminent in the profession. If mercury forms an inert compound with albumen and other proteids, how is it that we get constitutional effects by the administration of the compounds of this base in the treatment of disease? Are the contents of the stomach and intestines always free from proteids when the medicine is administered? The truth is that the albuminate of mercury is insoluble in water, but is freely soluble in excess of albumen, in blood-serum, in meat-broth, in solution containing sodium chloride, etc. Indeed, all the mercury given medicinally is said by leading therapeutists and physiological chemists to be converted into the albuminate before it is absorbed. Filehne says concerning the absorption of mercury: "The salts of mercury soluble in water form first with albumen compounds which, partly in excess of albumen, partly from the action of other substances, as sodium chloride, hydrochloric acid, etc., are soluble, so that the passage of these compounds into the blood as soluble albuminates is undoubted. The compounds insoluble in water are by the action of sodium chloride and hydrochloric acid converted into the sublimate, and this in turn into the albuminate." Nothnagel and Rossbach[5] say that while the albuminate of mercury is insoluble in water, it is freely soluble in excess of albumen and in sodium chloride.

Dr Hills again says: "Sternberg, in the *Medical Record* for August 1st, 1885, affirms positively that the albuminate (of mercury) is a potent germicide, but gives no facts in support of this statement. Klein's experiments, however, suggest that its germicide power is very slight at the most. Admitting, however, that it has such power, the amount redissolved is very small, *and this is likely to be converted at once to the inert sulphide by the sulphuretted hydrogen* present."

I have italicized the assertion to which I desire to give immediate attention. Here, Dr. Hills is again wrong. Sulphuretted hydrogen does not decompose the albuminate of mercury. Every toxicologist knows this, and destroys the organic matter before he attempts to precipitate mercury from solutions containing proteids. In the report of the committee, where I show that the albuminate of mercury is soluble, I state that the organic matter was destroyed by potassium chlorate and hydrochloric acid, *after which* the mercury was precipitated with sulphuretted hydrogen. Nothnagel and Rossbach[6] say "from the albuminate of mercury one cannot precipitate the metal with sulphuretted hydrogen until the organic matter has been destroyed." If sulphuretted hydrogen precipitate mercury from proteid solutions, the mercury so precipitated is not combined with albumen, and the occurrence of such a precipitation shows that the mercury exists in excess above that taken up in the formation of the albuminate. The albuminate of mercury is not easily decomposed.

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[1] Boston Medical and Surgical Journal, 25th August, 1888.
[2] Merck's Bulletin, August, 1888.
[3] Pharm. Centralblatt, 1888.
[4] Cloetta's Lehrbuch der Arzneimittellehre, 1887, S. 134.
[5] Handbuch der Arzneimittellehre, sechste Auflage, S. 194.

Again, Dr. Hills thinks that the alkalies formed in decomposing matter would precipitate the mercury. Nothnagel and Rossbach[7] say: "if common salt be added to an alkaline solution of albumen, mercuric chloride will then fail to produce any precipitate." No one will question the existence of common salt in privy vaults.

It is true that Klein's experiments suggest that the germicide power of murcuric albuminate is very slight at most. Indeed Klein asserts (or rather did assert) that a one per cent. solution of mercuric chloride is no more a germicide than is vinegar. Certainly no one will now champion this statement, although vinegar is not worthless as a germicide. Koch found that the spores of the anthrax bacillus will not germinate in a *proteid* solution if there be present one part of corrosive sublimate in three hundred thousand. And yet Dr. Hills, without having make an experiment, condemns the committee for recommending a solution of corrosive sublimate, one to five hundred, for the disinfection of the liquid discharges of cholera, typhoid fever, etc.

Dr. Hills finds very strong language of condemnation for the report of the committee in recommending that the amount of bichloride found necessary to sterilize broken-down beef-tea be multiplied by two, and used for the disinfection of the liquid discharges from the bowels of patients with cholera, typhoid fever, advanced tuberculosis, septic diarrhœa, etc. As he bases his condemnation upon the incompatibility (?) of mercuric chloride with albumin, he must suppose that these stools contain a large amount of soluble proteids. In this he is again wrong;—such discharges do not contain large amounts of albumen or other soluble proteids. Simon[8] obtained the following results from the analysis of the fæcal matters in cholera:—

Water	980.00
Solid matters	20.00
Fat	0.08
Extractive matter	4.80
Albumen and mucus	0.52
Chloride of sodium, lactate and acetate of sodium, and alkaline phosphates	13.40
Phosphate of lime and magnesia	0.60

The blood contains, according to Hammerston, from 2.677 per cent. (horse) to 4.436 per cent. (rabbit) of serum albumin; and yet, according to Von Ermengen, mercuric chloride in solution of 1 : 800 and 1 : 1000 sterilizes blood. With these figures before us can we say that "it is not creditable to a committee of the leading sanitary association of this country" to recommend a solution of mercuric chloride 1 : 500 for the disinfection of cholera stools.

Practically we know that mercuric chloride does efficiently disinfect substances containing a hundred times as much proteid as cholera stools contain. This is done many times every day in bacteriological laboratories. Gelatine plates and tubes, agar tubes, and blood-serum tubes, laden with all the known germs, are disinfected with a solution of mercuric chloride 1 : 1000. In Koch's laboratory this is the only disinfectant used, and there has been no evidence of its failure. Plates covered with colonies of the anthrax bacillus, the comma bacillus, etc., are immersed in the solution with the certainty that the sterilization will be complete. Old tube cultures are treated in the same way, and with the same result, whether they contain gelatine, agar, or blood-serum. Now, in the gelatine, one litre of beef-tea contains 100 grams of gelatine, 10 grams of peptone, and 5 grams of sodium chloride. We have seen that the albuminate of mercury is made with peptone as well as with albumen, and there is nearly twenty times as much peptone in this mixture as there is albumen in cholera stools, and nearly two hundred times as much gelatine besides. Certainly no one will question the large amount of albumen in blood-serum. Is it not strange, if the albuminate of mercury is so "inert," that the disinfection of these cultures should be so successful? Even the evacuations of infants with green diarrhœa, containing a large amount of undigested food, do not contain as much proteids as do gelatine cultures, as is shown by the following analysis of Golding Bird:—

Water	900.00
Biliverdin, alcoholic extracts, fat, cholesterine	24.50
Ptyalin, watery extract, colored with biliverdin	11.25
Mucus, coagulated albumen, and hematin	56.00
Chloride of sodium, with traces of tribasic phosphate of soda	5.50
Tribasic phosphate of soda	1.75
Peroxide of iron	1.00

In the first report of the committee (1885) a solution of chloride ot lime was given the first place for the disinfection of excreta in the sick-room, and a solution of mercuric chloride of the strength of 1 : 500 the second place. In the latest report (1888) carbolic acid has been given the second place, and mercuric chloride has not been recommended for this purpose. This change was made because the carbolic acid was believed to be sufficient, and not because the mercuric chloride was believed to be inefficient. In the light of the most recent experiments in this country and abroad, we believe that mercuric chloride, in the proportion named, would be effective in the disinfection of the liquid discharges of patients suffering from typhoid fever or cholera, and that the recommendation made in our first report was justified by the experimental data then given, and not yet contradicted by any new evidence.

The committee called attention to the action of mercuric chloride on lead pipes in its first report, and this influenced it in substituting carbolic acid for mercuric chloride for disinfecting the excreta in the sick-room.

To return to our critic, the broad statement is made that: "An examination of the report of this committee fails, however, to bring to light the slightest particle of evidence upon which such a recommendation could have been based," viz., the disinfection of excreta with mercuric chloride.

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[6] *Loco citato.*

[7] *Loco citato.*

[8] Becquerel and Rodier's Pathological Chemistry, p. 459.

Dr. Sternberg, chairman of the committee, made extended researches upon the germicide power of this agent several years before (1883) the committee was appointed, and to those experiments reference is made in the first report. It is for this reason that extended experimental researches were not made with this agent in 1885. However, a number of experiments were made and recorded in our report. These show that even the solid or semifluid fæces of a healthy person may be sterilized by the use of the solution recommended by the committee, provided that they are broken up so as to be fairly exposed to the action of the disinfecting agent. Moreover, the fact is recorded that a certain amount of the mercurial salt remained in solution at the end of twenty-four hours, as shown by a deposit of mercury on a copper wire (exp. of Sept. 8). Yet our critic, without recording a single experimental observation of his own, states that there is not the slightest particle of evidence upon which our recommendation could have been based.

One who has given no special attention to chemistry may be pardoned for not being acquainted with the chemical nature of the albuminate of mercury, but certainly any one who had read our report could not have made the sweeping assertion which we find in Dr. Hill's criticism.

CASES OF EMPYEMA.[1]

BY J. T. G. NICHOLS, M.D.

Case I. Mrs. H., thirty-seven years old, previously well. Three months advanced in her third pregnancy. June 12, 1873, had a severe chill followed by fever and pain under the right nipple. On the eighth day of the disease the late Dr. Calvin Ellis saw her in consultation. The line of dulness extended to the middle of the scapula: the dyspnœa was moderate. The constitutional disturbance was very great, the expression dull, the tongue dry and brown, and the stomach very irritable. It was decided not to tap the chest. On the twenty-fourth day the line of dulness extended to the top of the chest behind, and to the third rib in front. The heart was not displaced, but the edge of the liver could be felt about an inch below the margin of the ribs. By the advice of Dr. Ellis the chest was aspirated and seventy-two ounces of thick odorless pus removed. The lung expanded well. On the thirtieth day the effusion was as large as before the tapping. The following day had been fixed upon as the time for making a free incision. At 10 P.M. she awoke from sleep, complaining of very severe pain at the epigastrium. She soon went into a state of collapse, with vomiting of a greenish fluid. There was no change in the line of dulness. The chest was aspirated at once and seventy ounces of thick odorless pus withdrawn. The abdomen became tender and tympanitic, but the respiration continued to be abdominal. There was no reaction, and she died at 7 P.M. of the thirty-first day, twenty-one hours from the attack of epigastric pain. An autopsy was not allowed. It is probable that death resulted from peritonitis, caused by perforation of the diaphragm, a very rare event in empyema, but one of which there are instances on record.[2]

The delay in evacuating the pus by a free incision was due to the conservatism which prevailed at the time this case occurred.

Case II. A boy, nine years old, seen in consultation with Dr. Driver, of Cambridge, about twelve years ago. The chest was tapped three times, a large quantity of thick, odorless pus removed, about sixty, forty, and twenty ounces. Soon after the last operation there was expectoration of thin, watery, odorless matter containing pus cells. The boy recovered and is now a strong man, with a well-formed chest. This case shows how good a result may sometimes follow repeated aspiration.

Case III. A delicate girl, seven years old, came under my care on December 30, 1887, by reason of the illness of her physician, Dr. Driver, of Cambridge, who reported that she had been sick for two weeks with pneumonia commencing at the apex of the right lung, and extending downwards. The constitutional symptoms were severe. The whole right side was dull, with bronchial respiration and bronchophony and moist râles at the apex of the lung. In a few days signs of effusion were evident, and on the twenty-eighth day of the disease the aspirating needle was inserted between the seventh and eighth ribs below the lower angle of the scapula, and eight ounces of thick, odorless pus removed; on the thirty-sixth day the needle was inserted in three places, but no pus was found. A copious muco-purulent expectoration appeared at once, without odor, and continued for two weeks. The child slowly but steadily improved, and she is now perfectly well, with a well-developed chest. In this case, also, the result could not have been better had a free opening been made.

Case IV. Mrs. —, thirty-four years of age, seen in April, 1887, in consultation with Dr. Church, of Cambridge. This patient was very fat, weighing about one hundred and seventy-five pounds. Two weeks before I saw her she was taken sick with pneumonia of the right lung. A week after the sickness begun, premature labor at seven months came on. The contents of the womb were thrown off completely and without unusual loss of blood. I found the right chest full of fluid, the patient delirious and very restless, with great dyspnœa, rapid pulse, and high temperature. By aspiration, eighty ounces of odorless pus were removed. The lung expanded somewhat, and the dyspnœa was relieved, but the fever and delirium continued. In four days the aspiration was repeated, and after this the constitutional symptoms gradually improved. She was aspirated seven times, the total amount of pus removed being three hundred and sixty-seven ounces. She recovered well, and now is in good health, with but slight sinking of the walls of the chest. The condition of the patient was so alarming that we felt that the shock of even so slight an operation as cutting through the walls of the chest might prove fatal; we had also to consider the difficulty of dressing the wound in a very heavy woman who was tossing about the bed almost constantly. As the case improved it seemed best to "let well enough alone." The result amply proves the wisdom of our decision. The duration of the disease was about fourteen weeks.

Case V. Male, thirty-five years old, provision dealer. Never very strong. Taken sick with acute pleurisy of the right side. July 19. 1886. On the twelfth day the dyspnœa was so great that the aspirator was used, and eighty ounces of clear serum removed, with relief to the urgent symptoms. During the month of August the fluid slowly reaccumulated. The patient was about the house, eating fairly well, but with moderate fever and sweating at night. On September 13th. the fifty-fifth day of the disease. the chest was aspirated and forty-two ounces of thick. odorless pus removed. Three days later the aspiration was repeated, and twenty ounces of pus removed. Five days later aspiration was tried without result. although the needle was introduced in five places. Ten days after this. fluctuation was noticed between the fifth and sixth ribs. about two inches to the right of the nipple. An incision was made at this spot, and about forty ounces of odorless pus escaped. A double drainage-tube was inserted, and a dressing of corrosive gauze applied The discharge rapidly diminished. and the tubes were removed on the seventeenth day. The wound closed promptly. He is now well, with the lung expanded and a slight sinking of the chest at the site of the incision.

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[1] Read before Boston Society for Medical Observation, Nov. 5, 1888.

[2] Vide Pepper. System of Medicine, vol. 3, p. 493.

Case VI. Maggie R., sixteen years old. Has worked in a laundry for two years. Menstruation began at fifteen, and continued regularly until three months ago. since which time it has not appeared. Has been losing flesh and strength for four weeks. and of late has had a cough: was first seen by a physician April 8. 1888. She then had sharp pain below the left nipple. rapid respiration. pulse 130. temperature 103°. with sonorous and sibilant râles in both lungs. Signs of effusion soon appeared. and in a short time the left side of the chest was filled with fluid. the apex beat of the heart being felt at the right margin of the sternum. I saw her in consultation with Dr. Whittemore of Cambridge, on April 14th. In addition to the physical signs above mentioned. there were coarse moist râles throughout the right lung. There was some cough. with muco-purulent expectoration. The dyspnœa was marked. An elder brother in the last stage of phthisis was in the same room with her. He died before her removal to the hospital. The chest was aspirated with a medium-sized needle; only one ounce of thin. flaky, odorless pus could be withdrawn. April 15th. aspiration was repeated with the largest needle, and two ounces of pus obtained. On the 16th she was etherized and the chest tapped with a small trocar attached to the aspirator. Sixteen ounces of pus were removed when the flow ceased. The dyspnœa was somewhat relieved and the temperature ranged lower, but the pulse continued to be very rapid. She remained at home, being about the house and occasionally out-of-doors, until June 4th. when she was admited to the Cambridge Hospital under my care. The left side of the chest was full. the apex beat of the heart being felt half an inch to the right of the sternum. The expectoration was examined for the bacillus tuberculosis with a negative result. The pulse was 154. the respirations 40. and the temperature 99.8°. The chest was aspirated with the largest needle, and sixty-one ounces of thin pus, without odor, removed. At the latter part of the operation the fluid became bloody. June 6th the chest was opened, under ether, between the 8th and 9th ribs in the axillary line. About fifteen ounces of thin bloody pus escaped. odorless as before. A double rubber drainage-tube was inserted and a corrosive gauze dressing applied. A layer of mackintosh was used. after the manner described by Dr. A. T. Cabot. The valve action of the dressing was well marked. The discharge rapidly diminished. and soon lost its bloody character. July 7th it is reduced to about three ounces daily, and is without odor. She is about the ward. and out of doors when the weather is good. The lung is expanding; weight eighty-one pounds.

August 11th, menstruation has appeared. Tubes removed. Lung has expanded very well. Moderate sinking of the chest walls: weight ninety-five pounds. August 20th, wound closed. Discharged well. I have seen this patient within a month, and she continues well. This case was an unpromising one when she entered the hospital. The effusion had existed nearly two months. aspiration having failed to remove any considerable part of it. Her previous history was bad. and her home surroundings had been very unfavorable.

The following cases have been admitted to the Cambridge Hospital since its opening. They were not under my care. I give brief extracts from the records.

Case VII. Mrs. D.. forty-two years old. After three weeks' sickness. on May 6th. 1887, about seventy ounces of serous fluid were removed from the left chest by aspiration. May 25th aspiration was repeated and forty-eight ounces of pus withdrawn. Admitted to the Cambridge Hospital May 27th. June 12th. incision between seventh and eighth ribs: about sixty ounces of very offensive pus escaped, a double tube inserted, the chest having first been washed out with a weak solution of "Phenyl" corrosive gauze dressing. The chest was washed out from time to time with phenyl. The discharge was abundant. the lung did not expand and the general condition of the patient was bad. August 22nd, a second opening was made nearer the spine, between the eighth and ninth ribs. The cavity was drained better after this. but there was no improvement. September 14th she was discharged, unimproved. at her own request. She died September 30th. one hundred and ten days after the chest was opened.

Case VIII. Robert H., forty-nine years old. coal-heaver: admitted January 11, 1888; sick six days. January 27th, aspirated; forty-eight ounces flaky pus. February 2nd. forty-eight ounces. February 6th, eighty ounces. February 14th. incision between seventh and eighth ribs: about three quarts of pus, flaky; washed out from time to time with phenyl. and chlorinated soda. the discharge being free and at times offensive. May 9th. discharged. wearing single tube, to report as an out-patient. After a short time he ceased to attend. In June he applied to Dr. J. A. Dow, who had charge of him while in the hospital. He found a small sinus discharging a little very foul pus. It was washed out with permanganate of potash, one grain to the ounce, three or four times, when it closed. The patient has been driving a coal cart for the past three months. The lung has expanded well.

Case IX. Walter C.. three years: mother and sister died of phthisis. Father a drunkard; admitted from the Avon Place Home. December 22, 1887, where aspiration had been done, removing a few ounces of thick, flaky pus. December 24th, incision between seventh and eighth ribs, double tube inserted; washed out from time to time with phenyl and later with chlorinated soda. February 18, 1888, was discharged, still wearing a tube. He recovered well and is now in good health.

Case X. A colored boy eight years old; admitted January 20, 1888. He wore a drainage-tube in the left chest, with free discharge of offensive pus into an oakum dressing. The chest was much sunken. It was stated that two ribs had been excised; on washing out the cavity the fluid passed into the mouth. Discharged not relieved. February 18th. He died soon after.

Case XI. Michael M., twenty-nine years old: admitted November 3, 1887. Injured two hours before by a rod of iron two feet long and three-fourths inch in diameter, thrown with much force by the breaking of a machine. There was a wound between the tenth and eleventh ribs on the right side, admitting the finger, extending downwards and forwards about three inches. There was no emphysema; signs of effusion into the left chest gradually appeared, without great constitutional disturbance. The line of dulness extended upward to the lower angle of the scapula. November 30th, coughed up about a pint of pus, not offensive.

December 3rd, a small quantity of pus; December 4th a large quantity; December 8th about a pint. For a few days had a frothy, slightly bloody expectoration. December 22nd discharged at his own request, much relieved. He is now "as well as ever;" works regularly.

Of the eleven cases I have reported, three died. One after two tappings, probably from perforation of the diaphragm. One after two tappings, and free incision; cavity did not contract. One after incision and resection of ribs; wound did not close.

Eight recovered. Three after repeated tappings. Two of these expectorated large quantities of pus. One, without tapping, expectorating large quantities of pus. Four after tapping and free incision.

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TWO DIFFICULT CASES OF BREECH PRESENTATION, WITH REMARKS.[1]

BY CHARLES W. TOWNSEND, M.D.

Mrs. O., thirty-six years old, was taken in labor with her seventh child April 24, 1888, at 10 A.M., and I was called to see her by her attendant at 6 the following morning. The history of her former labors was found to be as follows: first labor, twelve years ago, instrumental, child a girl, head presentation; second child a boy, delivery instrumental, head presentation; third child a girl, also instrumental; fourth, a boy, labor normal and easy; fifth, a girl, labor normal and easy; sixth, a girl, footling presentation, labor easy.

The pains during the day of April 24th had been slight and infrequent until 3 in the afternoon, when the membranes ruptured spontaneously, after which the pains became strong and regular. At 1 o'clock the next morning, the os was fully dilated, with the exception that the anterior lip of the cervix was still to be felt. From that time till my arrival at 6 A.M., there had been little or no progress, although the pains were strong, coming at intervals of two or three minutes, and the woman was becoming nervous and tired, although her pulse remained strong at 80. Examination at this time showed considerable œdema of the vulva, with turgescence of the blood-vessels. This condition had developed during the night. On abdominal palpation the breech was found engaged at the pelvic brim, the back being on the right. The fœtal heart was 142, and situated three inches above and one and a half inches to the right of the umbilicus. On vaginal examination the anterior lip of the cervix was found much swollen, caught between the presenting part and the symphysis pubis, but was easily pushed up out of the way, leaving the os fully dilated. The breech presented at the superior strait, sacrum right anterior. Both buttocks were greatly swollen, the *caput succedaneum* thus formed reaching nearly to the vulva. Pelvic measurements showed a slight general contraction, and were as follows: between spines of ilia, 9¼ inches; between crests, 11 inches; external conjugate, 7½ inches; internal diagonal conjugate, 4¾ inches: height of symphysis, 1¾ inches, making the true conjugate about 4 inches.

The patient was etherized, and repeated attempts were made to bring the breech down into the pelvis by traction with the index finger hooked into the anterior groin, but without avail. The blunt hook was also used, but with the same lack of success, as much force being applied as was considered justifiable, a slight abrasion in the groin found after the birth of the child showing that this was the case. Miles' breech forceps were then applied three times over the sacrum and the posterior surface of the thigh, but each time slipped without advancing the breech. Dr. Edward Reynolds, who was present, and with whom I had the benefit of a consultation in the conduct of the case, then applied the forceps over the trochanters, with the same result. I then gradually inserted my right hand between the breech and the uterus, and seized and drew down the right foot, which was found just above the brim of the pelvis, the knee being flexed, and using this as a handle the breech was soon brought into the world. The arms were extended above the head, but were delivered without much difficulty. The head, however, caught at the brim, occiput to the front, and refused to come after strong tractions by the Prague and Smellie-Veit methods and suprapubic pressure. Forceps were applied, the head still being arrested at the brim, and even with their help there seemed to be no change in the position of the head. I then inserted Dr. Reynolds' axis-traction rods, and had the pleasure of feeling the head at once advance with moderate effort, much less than I had before expended unsuccessfully without the rods, and the child was speedily delivered. After mouth to mouth insufflation and artificial respiration, the child gasped, and in the course of half an hour breathed and cried naturally, and afterwards did well. It was a girl, and weighed 8½ pounds.

I have narrated this case at some length, believing that it presented several points of interest for discussion, namely, the various methods for delivery in the case of an arrested breech, and also the treatment of the high after-coming head. In ordinary cases of breech presentation our position should be one of watchful care, with avoidance of interference during the labor. When nature is unable to expel the breech, moderate traction with the index finger hooked into the anterior groin is in most cases sufficient, the strength of the other arm being added by grasping the wrist of the hand used for traction. This method failing, Lusk recommends, in the order given, the forceps, the fillet, and the blunt hook, and, if the child be dead, the cephalotribe, the latter instrument giving us of course a firm hold on the presenting part.

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[1] Read before the Obstetrical Society of Boston, Nov. 10, 1888.

The ordinary forceps intended for the head have been used successfully for the extraction of the breech, and with reasonable care the danger of crushing the pelvis or lacerating the abdominal viscera of the fœtus has been shown to be slight. A certain amount of compression of these parts to avoid slipping is of course required, but experience has shown that this compression is not harmful. Tarnier[1] made careful examinations of still-born infants delivered by the breech with forceps, and in no case did he find any injury either to the pelvic or abdominal viscera. By guarding with the disengaged hand, the danger to the mother's soft parts in case of slipping can be avoided. It is possible that in my case the use of axis-traction forceps would have succeeded. Special forceps intended for the breech alone have been devised by Miles. Lusk mentions some nineteen cases reported by different authors where the forceps were used successfully in the extraction of the breech.

The fillet, when wet and twisted, as is almost always the case, may cut deeply into the tissues, and it seems to me that the blunt hook, which forms merely a strong index finger, is preferable. The blunt hook is, however, a most dangerous instrument, unless used with care; serious contusions and lacerations of the soft parts will occur unless the tip be guarded with the finger and its exact position known. Of course, if the instrument be allowed to slip down on the thigh it may cause fracture. Leverage movements are particularly to be avoided.

All of these methods failing, — it not being deemed expedient in my case to try the fillet after the failure of the blunt hook, — the bringing down of a leg remained. The objection to this method at the first, and the preference of the other methods, is the danger to both mother and child, — of rupture of the uterus in the one case, or fracture of the leg in the other. The danger to the mother is especially great where the membranes have been ruptured for some time, and where from prolonged and ineffectual labor, the lower segment of the uterus has become thinned from retraction. Bearing these dangers in mind, the manœuvre should be performed with the greatest care, the patient being completely anæsthetized. In the present case but little retraction had taken place, and no retractive ring was to be felt. The leg and foot were found just above the brim of the pelvis, and were not, as is often the case, extended up parallel with the axis of the fœtus. In the latter case it is necessary to pass the hand up to the knee, and with the thumb in the popliteal space, to gradually flex with the fingers the leg upon the thigh, and draw it down into the world.

As regards the extraction of the aftercoming head, I shall only repeat that without the axis-traction rods strong tractions with the forceps produced apparently no effect, while with the rods the extraction was easy and immediate. Lusk says that "in extracting the after-coming head, the axis-traction forceps is particularly serviceable."

One is often tempted, after considerable delay in the extraction of the after-coming head, to give up all hopes of saving the child's life and to rest awhile, for it is very exhausting work, and then begin more leisurely, but, as the event proved in this case, it was worth while to keep on and try every method, although the continued life of the child seemed almost impossible. In another case, when the operator, after a version, had been unable to deliver the head manually, he finally gave up after prolonged and repeated efforts, and requested me to apply forceps, the child's body hanging out apparently lifeless. Delivery with the forceps proved easy, and to our surprise the child was resuscitated. The tenacity of life displayed in some of these cases is certainly surprising, while in other cases its tenuity is, to say the least, disappointing.

The following case of breech presentation differs entirely from the first, and the difficulty with the after-coming head was of an entirely different nature: —

Mrs. H., twenty-eight years old, previous labors normal, was taken in labor with her sixth child, March 26th, 1888, at 5 A.M., and I saw her first at 4 that afternoon. At that time external examination showed the back of the child on the left, a large, soft, and apparently fluctuating mass at the fundus, and the breech at the brim. The fœtal heart was 132, and heard loudest on the left side at the level of the umbilicus. On vaginal examination the breech was felt engaged at the superior strait, S. L. A., the os two thirds dilated. The pains were moderate and the woman in good condition. The os became fully dilated at 8 P.M., and when I was again called by her attendant at 3 the next morning, the breech had made but little advance, being still at the superior strait. Mother's condition good; pains poor; fœtal heart 140. The breech was easily brought to the vulva by traction with the right index finger hooked into the anterior groin, and the child extracted all but the head, which remained high and could easily be felt above the pubis as a large, fluctuating mass. As was to be expected with a hydrocephalic head, the forceps slipped, although a careful attempt did no harm, and it was hoped might succeed. With Dr. Reynolds to assist in steadying the uterus, it was a simple matter to perforate with Smellie's scissors just above the edge of the occipital bone, and on dilating the aperture with the fingers about a pint of clear yellow serum gushed out. After this the child was easily delivered and the large hydrocephalic head was found to still contain a quantity of fluid. In the lower dorsal region there existed the condition of spina bifida, the spinal canal being covered with a thin membrane without a projecting tumor. I might have avoided craniotomy by inserting a catheter through this opening, forcing it up the spinal canal to the brain, and thus withdrawing the hydrocephalic fluid, a procedure which has been successfully carried out by Tarnier and others.

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[1] Dict. de Med. et de Chir.

REPORT ON FOOD AND DRUGS AND THEIR ADULTERATION.

BY B. F. DAVENPORT, M.D.

MILK.

Dr. C. Richardson, chemist for the District of Columbia, reports in Bulletin No. 19 of the United States Department of Agriculture, that as the result of his examination of many samples of milk sold in Washington, he has come to the belief that oleo oil, or some similar substance had been churned into them to enrich a poor or skim milk. It is well known that De Laval, the manufacturer of the much-used Swedish centrifugal skimming machine also makes a similar machine for the churning of oils back into milk.

CITRIC ACID IN COW'S MILK.

T. Henkel[1] asserts that he obtained from 0.9 to 1.1 part per thousand in cow's milk, and that the concretions so frequently found in condensed milk consist of almost pure calcium citrate. A good milking cow yields as much citric acid per day in her milk as is contained in two to three lemons. He found none in woman's milk.

BUTTER.

The German Dairy Association, under the direction of its president, Dr. R. Wollny of Kiel, has instituted an exhaustive investigation into the most accurate and convenient methods of butter analysis. As collaborators in the task they have called in the aid of a large corps of expert food chemists in all the leading countries of the world. The special occasion which has impelled this research has been the passage of an imperial German oleo statute, which allows of the presence of only 4 per cent. of true butter fat in an oleo. This therefore calls for the devising of some method of butter analysis by which the amount of butter fat present can be determined of a certainty, to within at most a single per cent. of its true amount. This is an accuracy much greater than is necessary under the oleo law of any other country. According to Dr. Wollny, the absorption of carbonic acid from the atmosphere has been the chief source of error in the Meissl-Reicherts process as commonly conducted, and the error thus introduced might exceed the equivalent of 4 per cent. butter, the whole amount allowed to be present under the German statute.

MEAT EXTRACTS.

Fabian, in *D. chem. Ztg.*, 1888, iii. No. 29, reports the following as the result of his examination of a sample of Cibils' Beef Extract, which upon its label claimed to contain 8 per cent. pepton: —

Water,	10.02 per cent.
Salts,	25.79 per cent.
Organic matter,	64.17 per cent.
	100.00

Of these 64.17 per cent. organic matter, 1.22 per cent. was albumin, and 62.97 per cent. extractives, and there was not a trace of pepton. He therefore concluded that Cibil's Extract of Beef is not to be considered as a food, but as a condiment. H. Trillich reports in Pharm. Centralh., 1888, ix. p. 137, that Coleman's Liebig's Extract of Meat and Malt Wine, according to the results of his examination, is simply a port wine containing a small quantity of meat extract, but not a trace of malt extract. It does, however, contain a large amount of salicylic acid.

PEPTONS.

There has been much uncertainty regarding the true chemical nature of these, the final products of digestive action upon albuminoids, ever since they were thus first called in Prof. Lehman's "Physiological Chemistry." Of recent years they have been viewed as simple hydrated forms of their original albuminoids, but more lately R. Palm claims to have shown them to be simple solutions in acids, such as lactic and some others. As the peptons formed during stomach digestion contain both lactic and hydrochloric acids, this explains why they are not coagulated by heat; for lactic acid, like acetic, will dissolve coagulated albumin, and it likewise prevents its precipitation by alcohol, alkali, or neutral salts, as the precipitates which might be formed by these are all soluble in lactic acid. The combinations of mercuric salts or tannic acid with peptons are, however, not soluble, and they therefore form precipitates. A very distinctive test, therefore, between albumin and peptons is xanthogenate of potassium, for this will form a precipitate with albumin from a neutral solution only after the addition of an acid, while with peptons it will precipitate at once, for the simple reason that they already contain the necessary free acid.

SACCHARIN.

Portugal has prohibited the general importation of saccharin into that country, for the assigned reason that its common use would be calculated to cause injury to the public health. For pharmaceutical purposes, however, it is allowed when first specially licensed, but even then it is allowed of only in small quantities. In France the Paris Conseil de Hygiène has reported that saccharin is not to be considered as a food but as a drug, that its use in food is dangerous to the public health, and therefore its presence in food should be considered as an adulteration. Saccharin, as might have been expected from its chemical relationship to some other compounds, has been found to have a decided antiseptic and germicidal action. From its sweetness and innocuousness, when properly used as a drug, it may very possibly prove to be the most eligible drug of its class for internal use as an antiseptic. The following simple method for detecting its presence, even in minute traces, may be of interest. Pulverize any solid to be tested, and if it contains any fatty matter, exhaust it with petroleum naphtha, then moisten it with a few c.c. of diluted phosphoric or sulphuric acid, dry and exhaust with ether; evaporate the ether extract, and add a little resorcin to the residue, a few drops of strong sulphuric acid, and a little water; this causes the evolution of sulphurous acid gas with vigorous ebullition. The fluid turns yellow, then red, and then dark green. Allow the liquid to cool, heat again to boiling or evolution of gas, and again let cool, then add an excess of alkali, when a solution is obtained which is reddish by transmitted light, but shows a strong green fluorescence by reflected light, this last being distinct in the presence of as little as one part in five to six millions.

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[1] Ztsch .f. Nahrungs. Unters., 1888, 135.

SALICYLIC ACID.

M. Lambert of Lyons, France, has shown that salicylic acid is present in eggs which have been preserved by the use of salicylated water employed in the same way that lime water has so long been used. It was claimed that it did not penetrate the shell, but he has proved its presence both in the white and yolk of eggs thus treated. The acid is easily separated from an acidified water solution of the egg by shaking it out with ether, which upon evaporation leaves the acid sufficiently pure for identification by the ordinary chemical tests. M. Million, in *Review Internat. der Falsification*, has shown that the addition of a 10 per cent. solution of mercuric nitrate in diluted acid to a solution containing salicylic acid will cause an intense red coloration, which is quite characteristic even in the presence of only about one part in a million. This test has the advance over the more usual iron one in that the color is not so fugitive.

BENZOIC ACID.

The French Conseil de Publique Hygiène has decided that benzoic acid should not be allowed to be used for the preservation of any food or drink, their reason being that as an antiseptic it would interfere with a normal digestion of food, any antiseptic doing the same.

CREOLINE.

Creoline does not appear to be free from all danger in use, as had been claimed. Behrings, in *Deutsch. Militärärzt Zeitsch.*, 1888, H. 8, reports that he has found it not to be so; and several others have done the same. Hiller says that its apparent harmlessness depends upon its slight solubility in water; that in a water mixture it is rather in the state of very fine division or emulsion than in a true solution. Rosni, in *Therapeut. Monatsheft.* 1888, 480, reports a case of death, with the symptoms of carbolic acid poisoning, which occurred where a woman had several times used a 2 per cent. emulsion of creoline as a uterine douche.

SPICES.

A so-called Bombay mace has recently appeared in our spice market, and is offered for sale as a dilutant or cheapener of true mace. Upon examination it proves to be the so-called long, wild, male, or false male, which is well-nigh destitute of flavor. Its microscopic appearance in a powder is the same as the true mace, but it can be identified from the fact that its absolute-alcohol solution gives a yellow stain to white filter paper, which the true mace does not do.

PEPPER.

Recently there has been offering in the New York spice trade what is claimed to be a new variety of pepper, under the name of Mallaquetta and Demerara peppers. Upon examination it proves to be nothing else than the old well-known drug, grains of paradise. It is to be recognized, when in powder, by the different appearance under the microscope of its granules, and by the chemical reaction for the presence of tannic acid, which it gives with iron salts. The tannin is best extracted by the use of a mixture of ether with alcohol as a solvent; true pepper will not yield any tannin to this.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES M. GREEN, M.D., SECRETARY.

November 10, 1888, the first Vice-President, Dr. O. W. Doe, in the chair.

Dr. C. W. Townsend reported

TWO DIFFICULT CASES OF BREECH PRESENTATION, WITH REMARKS.[1]

Dr. T. E. Francis, a guest, had always found delivery to be slow in breech presentations; he had never applied forceps to the breech, nor to the after-coming head. It was his practice to hook his fingers into the groin to facilitate extraction; and when this was impossible or ineffectual, it was his custom to bring down a foot. To the ankle he applied a fillet, not for purposes of traction, but to keep the child within easier reach.

Dr. Edward Reynolds said the value of forceps in delivery of the breech was not given a fair test in the case reported. The forceps used was that of Miles, and this instrument was too weak and bendable. The Simpson forceps with axis-traction rods he believed would give much more satisfactory results.

Dr. Blake had always succeeded in delivering the breech by bringing down the feet, and had never used breech forceps, fillet, nor blunt hook. But he knew nothing more difficult than the delivery of the after-coming head when arrested in the superior strait. He had not succeeded with forceps in such cases, perhaps due to want of skill; but he thought the principle of axis-traction, which he regarded as one of the greatest of modern achievements, must prove of great value in delivering the after-coming head.

In reply to a question by Dr. Blake, the reader said he had used Simpson's forceps, applying them under the belly, the child's body being raised in air. He had found the application easy, as was also the adjustment of the traction-rods.

Dr. Edward Reynolds believed that it was the rapid use of the traction-rods which saved the child's life in the case reported.

Dr. Green said that he had never used forceps in extraction of the breech, as, in some experiments on the cadaver by Prof. Richardson and himself, the results had not been satisfactory. When extraction was indicated before the groin was within effective reach of the fingers, he would prefer to bring down a foot. In regard to the after-coming head, when there was no marked pelvic disproportion, he thought the Smellie-Veit method of extraction was efficient, provided that a trained assistant was at hand to keep the head flexed and to exert judicious supra-pubic pressure. In cases of marked disproportion, however, the amount of supra-pubic force necessary to drive the head through the brim might do injury to the uterus, as he had had occasion to observe. In such cases the forceps was of great value, and doubtless the application of axis-traction would facilitate delivery and save fœtal life, as had been so well shown by the reader.

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[1] See page 5 of the Journal.

Dr. O. W. Doe spoke as follows on

THE TREATMENT OF PUERPERAL SEPTICÆMIA IN VIENNA.

Two years ago I spoke at a meeting of this society upon the use of the curette in the treatment of puerperal septicæmia, as then practised at Vienna. At that time this method of treatment had been carried out in Prof. Carl Braun's wards for only three months, but with remarkable success. This summer, while there, Dr. Egon Braun, son of the professor, and second assistant in his clinic, very kindly gave me the results of his experience during the past two years, and was very enthusiastic over his success. The number of cases treated in this manner had been nearly five hundred; and out of this number, I think only two had been unsuccessful. These two were cases that had been brought into the hospital after the disease had developed, and other treatment been practised. Until August, 1887, he had had one hundred and fifty consecutive cases without any death.

The indications for using the curette were, chill accompanied by tenderness in the hypogastric region, and a rise of temperature to 102° or over. Dr. Braun emphasized the fact that the treatment, to be successful, must be instituted before the disease had extended to the tubes, and never in cases where parametritis exists, as the inflammatory condition is thereby increased. The blunt curette is the only one used after abortions and confinements, the sharp curette in cases of flowing that has continued for some time, and in cases of endometritis. The method pursued is the following: —

The patient lies on her left side; the speculum is introduced, and the cervix drawn down by a tenaculum. An intra-uterine injection of thymol 1 : 1000 is given, and then the interior of the uterus is thoroughly curetted, and the intra-uterine injection then repeated. A suppository of five grains of iodoform is then inserted into the uterus. If there are any diphtheritic patches of membrane seen on the lips of the cervix they are scraped off and tinct. iodine applied. The same is also brushed over any small lacerated points on the vagina or perineum.

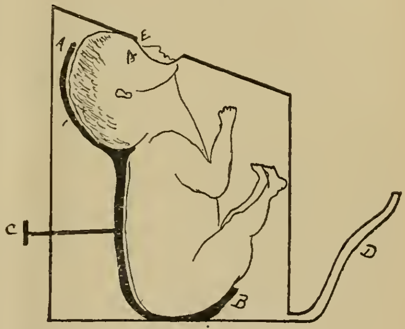
The vagina is now packed with iodoform gauze, which is removed after twenty-four hours, and vaginal injections of thymol given every day as long as there is any discharge. Dr. Braun says he has often removed half a tumblerful of decomposing material with the blunt curette. The temperature after this treatment usually falls at once, but sometimes it will rise again on the second or third day, and then fall. Ice-bags are always applied over the hypogastric region after the curette has been used. Dr. Braun showed me a report of a number of successive cases. The first was a case of endometritis occurring on the fifth day. The curette was used on the sixth. The temperature before the operation was 101.1°, and fell gradually after the treatment, and the patient was well in six days. The next case was operated upon on the fourth day. The temperature was 104.3°. The temperature fell at once to 98.6°, and did not rise subsequently above 100.4°. She was well in six days.

Such was the result in nearly every successive case, as they stood in his record book.

Dr. Doe showed the blunt curette used by Prof. Braun, and also a sound devised by Dr. Egon Braun, which is provided with a slit, which could be threaded with gauze, and thereby topical applications made to the cervix and interior of the uterus.

APPARATUS FOR RESUSCITATING ASPHYXIATED CHILDREN.

Dr. Doe also showed a diagram representing an ingenious construction devised by Dr. Egon Braun for resuscitating asphyxiated children.



AB. Plaster mould.
C. Screw for elevating mould.
D. Pipe for exhausting air.
E. Rubber diaphragm surrounding nose and mouth.

It consists of a wooden box, with a slanting top which opens on a hinge, and is air-tight, except for an opening which is partially closed by a rubber diaphragm. The diaphragm has an opening intended to be filled by the nose and mouth of the child. The child sits in a plaster mould, with head thrown far back so as to bring the nose and mouth against the opening in the diaphragm. A long flexible tube is inserted at the lower portion of the front of the box for exhausting the air, and posteriorly is a screw for raising or lowering the plaster mould according to the size of the child.

After the mouth of the child is cleared of all mucus, it is placed in the mould, with only the mouth and nose visible at the external opening in the diaphragm.

Air is first blown into the box by the mouth of the operator, so as to compress the chest, then it is let off and the air exhausted by suction, thus expanding the chest. This is repeated twenty or thirty times in a minute. Dr. Braun says that he has employed this apparatus in fifty cases, and they have all been successful.

Dr. Boardman had curetted the uterus for malignant disease, but had never done so in septic conditions. The operation is in keeping with ordinary surgical procedures, but he questioned whether we had, or ought to have, under proper prophylaxis, a condition of the endometrium necessitating such treatment: such certainly had not been the experience in the Boston Lying-in Hospital since rigid methods of asepsis had been introduced. He did not think the cases reported proved anything, as rise of temperature does not necessarily mean septicæmia; still the procedure might prove useful.

DR. DOE said that prophylactic measures were faithfully carried out in Vienna up to the time of delivery.

DR. BLAKE did not think the endometrium was the indiscriminate object of treatment, and queried whether the poison did not find ingress elsewhere than from the uterus.

DR. GREEN said that, so far as he had seen, the poison entered by some lesion of the perinæum, vagina, or cervix, as manifested by diphtheritic patches in these places; in such cases, unless the septic process had been ignored and allowed to extend into the uterus, there would be no occasion to curette the endometrium. He did not see how a septic process could originate in the uterus unless a septic hand or instrument had been used there. If a bit of placenta or membrane is retained, hæmorrhage might ensue, and the curette might be necessary to remove the offending body; but if the retained piece of placenta is not infected, it will be cast off fresh and non-septic in due time, and will not give rise to septicæmia. Given a case, however, of septic endometritis, not involving the tubes, and unaccompanied by peri-uterine inflammation, the skilful use of the curette and local antisepsis are in accord with the best surgical principles, and in the Vienna clinic have evidently given good results. It should be remembered, however, that the puerperal uterus is soft and flabby, and that even the blunt curette is capable of doing harm in inexpert hands.

DR. G. K. SABINE, a guest, said, in regard to the antiseptic napkins sold by dealers, that in his opinion the use of oiled silk or mackintosh was unscientific: by preventing the discharges from soaking through, the impervious material retained heat and moisture about the vulva and thus favored decomposition.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY, AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

NOVEMBER 11th, 1888. The section was called to order at eight o'clock by the SECRETARY, who announced that the first business was the election of a chairman for the ensuing year. On motion of Dr. G. H. Lyman, Dr. A. L. Mason was nominated for re-election, and unanimously chosen. Dr. MASON responded by a few appropriate remarks, and assumed the chair for a second term of service.

The next business was the report of the committee appointed at the last meeting of the Section to take into consideration the subject of "The Need of a National Board of Health," of which Dr. H. I. Bowditch was the chairman. Dr. Bowditch was detained by illness from attending the meeting, and the report was read by the secretary, as follows: —

REPORT OF THE COMMITTEE ON THE "NEED OF A NATIONAL BOARD OF HEALTH."

The committee appointed at the last meeting of this Section of the Massachusetts Medical Society beg leave to report the following in regard to the yellow fever epidemic in Florida.

1st. March 13th, 1888, the chief of the Marine Hospital Service reported a letter from Dr. Murray, dated at Plant City, Florida, as follows: "There is yellow fever at this place and at other places of the State, of which one report will be made." Later, in a report April 20th, 1888, Dr. Hamilton states that "a late inspector at Micanopy, Plant City, and Barton, Florida, has proved the existence of yellow fever there, and that several other points in the southern and western portions of the State are to be looked upon as suspicious." 2nd. Florida has never had any State Board of Health, and it is believed that there are no official boards of health in the towns of the Commonwealth. 3rd. During the past summer Dr. Hamilton has vainly urged the Governor of Florida to summon the legislature to meet the emergency at Jacksonville by establishing such boards, and to take any other means that might be needed. 4th. We all know the terrible epidemic which finally broke out at Jacksonville, causing panic and disease wide-spread in that city, and arousing the sympathy of the nation. 5th. It appears that the place where the disease first showed itself is a small village. Everything in it, as some report, could have been purchased for $5,000 or $10,000, and the disease stopped with little trouble to any one, and probably with an efficient and intelligent authority the disease might have been thus crushed at its outset. 6th. We do not learn that even now anything has been done towards bringing Florida under the careful surveillance of sanitary law. Moreover, the United States Government, having allowed its own National Board of Health to expire, after giving its funds to the Marine Hospital Corps, does not pretend to act for the prevention of such calamities. No authority for such action has been given to the Marine Corps, although it can spend money to build "camps of refuge" and to aid the destitute sufferers from the epidemic.

Such are believed to be the facts. What now, it may be asked, can this section of the Massachusetts Medical Society do under the circumstances? We can at least, as believers in sanitary science and law, protest against such folly.

The belief is held by many sanitarians that if an active, intelligent, and determined State Board of Health, especially if led by such a chief as Dr. Holt of New Orleans showed himself to be in all operations of the board, to limit the yellow fever in the small locality of Biloxi, near New Orleans, and to crush yellow fever there, the epidemic at Jacksonville and the South could have been prevented. Undoubtedly the action of the Louisiana board prevented its spreading to New Orleans and our great Mississippi river. This action proves, moreover, that a State Board of Health, if it keeps a sharp look-out and acts with energy and discretion, is able to defend not only its own borders, but perhaps the whole country from pestilence.

Unfortunately, Florida has no State Board, and as we have seen, was deaf to the appeals of Dr. Hamilton to have the effective means employed;

and, to make matters still worse, the United States Government had allowed to die the only board it had for years sustained, which could have done something even if the Governor of Florida failed in his duty. A National Board might have quietly, though decidedly (as it did in the case of Memphis a few years ago), have said, "If you will take no steps to guard the nation from this danger, we must and will do so."

The Marine Hospital Corps, founded for a purpose entirely different, has no authority to act under such circumstances. All national and State preventive medicine was virtually given up, and Dr. Hamilton, the able chief of the Marine Hospital Corps, although sustained by the President of the United States and by the Secretary of the Treasury, has been powerless to prevent the spread of the epidemic. It is very much to be regretted that partisanship has shown itself in the discussions that inevitably have arisen on this topic. Some have unjustly blamed Dr. Hamilton as wanting in energy and knowledge, while others have with equal zeal supported him. Your committee believes that Dr. Hamilton has done all that any man could have done under the unfortunate circumstances in which he was placed. As we have seen, he was powerless to effect any change because of his want of law to sustain him, and through opposition of the Governor of Florida. He received no valid support either from national or State sanitary law. It seems to your committee that the almost criminal neglect of the Governor of Florida to call upon the legislature to enact laws to meet the emergency has only to be named in order for it to be heartily condemned by every sanitarian in the land.

In conclusion, your committee present the following resolutions: —

Resolved: That every State in the Union ought to have its State Board of Health, and local boards for the same object in every township.

Resolved: That a national sanitary authority of some kind is imperatively called for. It should consist of a body of persons interested in sanitary work, and without other duties to be performed save of jealously guarding the health of the people. It should have ample pecuniary resources from the National Exchequer, to enable it to employ learned experts to study all the hidden causes of disease. It should be directed to co-operate with all State boards. Such an organization would prove a blessing to the whole nation, and a most faithful ally and supporter of State preventive medicine.

Resolved: That this report, and the resolutions signed by the committee, be sent to the President of the United States, members of both Houses of Congress, governors of the various States, and the State Boards of Health.

(Signed) Henry I. Bowditch, George H. Lyman, Francis Minot. November 10th, 1888.

Mr. J. H. Lakin presented a paper upon

THE INFLUENCE OF PROPRIETARY PHARMACY UPON THE PRACTICE OF MEDICINE,

of which the following is a short abstract.

The manufacture of proprietary articles of a medical nature has reached a degree of development which probably few persons fully appreciate, and which it is to be feared the physician least of all understands. This is to be regretted for several reasons, but principally on account of the harm which directly or indirectly accrues to him as a medical man, and to his practice as a business enterprise.

The physician is approached by the agent of the manufacturer, who presents a plausible account of the composition of the substance in question, and adds most glowing results as sure to follow its administration. The processes of assimilation and nutrition are elaborately explained, and the influence of the new remedy upon these functions is clearly set forth. The doctor is flattered by attentions of most marked character on the part of the agent, who leaves behind him attractive samples of his preparations, and after a time calls again to prolong the existing acquaintance, and to ask the physician for the endorsement of the particular article which has been supplied. This is then printed, and circulated broadcast, at the same time announcing that the gentlemen whose names are subscribed to the nostrum are "among the most able in the profession." The pharmacist is called upon to purchase a quantity of the questionable article in order to supply the prospective demands for it from the prescriptions of the doctors who have been "seen," and thus there is to be found in every apothecary's establishment a considerable amount of "dead stock," made up in large part of the products of unscrupulous manufacturers, who have succeeded in deluding the physicians into accepting their samples, and even giving testimonials in favor of their proprietary articles, and then have coerced the apothecaries into investing in their wares, always insisting on a *dozen*, or a *case*, and in this way effecting the sale of not inconsiderable amounts of whatever they may be pushing at that time. The deception and fraud is made more annoying from the fact that each manufacturer gives a process purporting to be the working formula of the preparation, but on attempting to produce the substance from this formula, it is invariably found impossible to do so. The class of articles thus foisted upon the profession varies with the seasons. At present the most vigorously advertised and diligently worked proprietary substances are the various so-called ferments, derived from the alimentary tract of the pig. So extensively has the pig been called upon to contribute to the welfare of the suffering patient and the wily manufacturer, that it would seem as if this field were well-nigh exhausted, and the line of proprietary manufacture must soon take a new direction. If physicians would only prescribe their own medicines, stating the amount required of the several articles of the prescription, the pharmacist could always compound the medicine in a satisfactory and useful manner. He would know much better than the physician the ways of safe and appropriate combination, and the system would be a gain to all. This plan would effectually diminish the number of proprietary remedies, but no article of real merit would be thereby affected. The condition of pharmacy would be improved, and physicians and the public would be better served.

The discussion of Mr. Lakin's paper was opened by F. A. Davidson, Ph.G., of the firm of T. Metcalf & Co., who said: —

The question of the probable effect of proprietary medicines has for many years been discussed by medical and pharmaceutical writers until it has become to the medical press what the spring poetry is to the newspapers; and as in the past the laboratory work of the apothecary has not been equal to the demands of physicians, and the manufacturer has not been long in discovering that the busy medical man was ready to prescribe a skilful combination or a well-made salt, the situation at the present time is entirely changed. Druggists have long since been aware that a strict drug business, while not offering the financial inducements of a mixed soda-water and fancy goods trade, has the charm of exacting the keenest perception to read the unwritten directions, and second the careful thought bestowed upon what may seem to be an insignificant piece of paper.

The first manufacturers of secret remedies were alchemists, who for their own selfish advancement sought to discover the transmutation of the metals, as is well known. Many processes, as of fermentation, can be traced to their labors. We need not notice the manufacture of secret remedies in the hands of physicians in the 13th and 14th centuries, whose use of Turlington's Balsam, Forty Thieves' Vinegar, Villate's Mixture, Dalby's Carminative, and James's Powder are familiar to all present. The early apothecaries in this country purchased their supplies abroad, and it was not until a few years previous to the late war that many remedies were manufactured and recommended to physicians for their use. Such remedies were popular, as Townsend's Sarsaparilla, Jaynes's remedies, and Ayer's, Schencks's, and Hartshorn's, and were received by the public as physicians' products and not as the concoctions of the much-abused apothecary. The war, with its protective tariff, gave an additional stimulus to the sale of American products, and we meet with the numberless elixirs and combinations of New York and Philadelphia manufacturers. How few remain to remind us of the hard work of travelling men, who with grip-sack and samples were so courteously received by the medical profession. Beef, Wine, and Iron without beef, Elixir Calisaya without calisaya, Sweet Quinine without quinine, and a few others of less renown still remain; but they are mostly vehicles, and their use by physicians to-day is as such and not as remedies.

In the present age we meet with tablet triturates, sugar-coated and not sugar-coated digestives, as well as a demand from physicians for concentrated solutions, and liquors, fluid extracts, and complex chemicals. These can be the source of much harm to the medical profession, and, while we can see great progress from the early alchemist to the manufacturer of saccharine, let every new remedy be the subject of investigation before it is prescribed.

In the few years which the medical student has at his command in which to familiarize himself with the principles of remedies, he cannot complete their study without the prospect of discarding them, one and all, when he enters active practice, if he is a prescriber of proprietary articles.

The use of a certain class of compounds, as Liquid Iron, Leontine, Listerine, &c., must prove to any physician's disadvantage. From the ambiguous formula thrust into his hand, or displayed on the label, what scientific results can he expect?

One hundred tiny lozenges in a pink pasteboard box delivered to the patient upon his depositing the office fee may be cheap to the patient, but what of the result?

Naturally it must be to the physician's advantage to so accustom himself to his remedies that uniform results may be attained, but when we come to know that many of the proprietary articles are from poorly selected drugs, bought at a low price and compounded by cheap and inexperienced help, uniformity cannot be expected.

I am sure, if we investigate carefully many of the secret remedies, tonic tinctures, etc., they will be found to be of the shot-gun character, many times scattering to the professional discomfort of the prescriber and the financial death of the manufacturer.

In his endeavor to relieve suffering and prolong life, we can all readily see why the physician is ready to use anything that may seem to possess merit, and entirely overlook the fact that not only is he placing the patient under great expense, but from the unknown composition of his remedy he cannot actually anticipate results. If a syrup of the hypophosphites is desirable, may it not be best to write, without the use of any proprietary name, the quantities of the salts required to each dose, and leave it with the druggist to prepare in an acceptable form? If a pill form is desirable, may it not be best to leave it to the apothecary to prepare? and, from the knowledge he has derived from a four years' course in any school of pharmacy, I am certain the prescriber will be better pleased with their effect when freshly made; and their exterior can be coated with any protective the physician may desire, as every prescription store has appliances at hand to silver-gild or gelatine-coat at less than an hour's delay to the customer.

From the lack of exact knowledge of the proprietary medicines as noted above, to the speaker there seems sufficient reason for the discarding of proprietary names. It has happened many times in my twenty years' experience that the most desirable manufacture may not be indicated, and as the pharmacist who receives it is never at liberty to substitute any other make, although it may be of exactly the same dose, strength, and price, delay in its delivery is occasioned, and consequent delay in the recovery of the patient.

The manufacturer, to stimulate a demand for his goods, has found the small or large samples advantageous, sending them broadcast before even the large wholesale dealers have the goods in stock, and when prescribed at the outset a tedious delay is occasioned, and meanwhile another physician summoned and a family or patient lost to the physician first called.

All secret medicines whose formulas are not made public are short-lived, and when prescribed to-day may not be obtained in a year. Not so the officinal preparations; the valuable ones are retained in the pharmacopœia, and new ones added at every revision. So that to the writer of a prescription there is no actual necessity for the prescribing of any compound not found between its covers. But suppose it is desirable to try the effect, for example, of antipyrin, caffeine, and phosphoric acid in an effervescent combination, with the pharmacopœial Pulveres Effervescentes as a base, adding the required number of grains of the two first to thirty grains of bicarbonate of soda, the phosphoric acid to the tartaric acid direct, dispensing in papers of two colors, the alkali in blue and the acids in white, I am certain the physician will find it to be to his advantage, rather than to adopt the trade name of any manufacturer, and write for a compound whose very name on the prescription may be familiar to the patient, and whose next call will not be for the physician, but who will attempt to prescribe for himself, and with results that we are all familiar with.

The question of even spurious alkaloids, *e. g.*, drumine and gleditschine, has been recently exposed in the medical press. Bituminated Iodoform is perhaps the latest addition, and we may look for many more in the many pepsins, so called, that are often in demand.

An amusing incident illustrating the use and value of samples has been often repeated in this vicinity. A druggist had occasion to call a physician to a member of his family, and ergot was needed. After repeated doses without effect, the patient inquired, "Where do you buy your medicine, Doctor?" We can imagine in what confidence and esteem the medical man was held when he made the statement that it was from a sample bottle that had been left in his office. Let me not be misunderstood in relation to samples. Nothing inspires the confidence of apothecaries more than a request to furnish, as he should, samples and all information in his power regarding price and general appearance of combinations that have become favorites to prescribers, or are intended for trial.

Mr. Davidson was followed by Prof. W. P. Bolles of the Massachusetts College of Pharmacy, who continued the discussion by presenting the physician's side of the question as follows: —

This subject interests us as much as it does the apothecaries. They have spoken of it from the apothecary's and chemist's point of views, and I should agree with what they have said.

I think there are a good many reasons for this great advance in the use of proprietary medicines. First, one admirably described by Mr. Lakin as "skilful advertising." A certain amount of judicious advertising will bring in a certain return, whether in proprietary medicine or other things. That affects especially the laity. Medicines addressed to them can be pushed, whatever their character, for a time. If they hit a popular want they last a good while after the advertising. Many last a whole generation. Others fail a year or two after the advertising stops.

Another cause of their success is the lack of training of physicians in matters pharmaceutical and therapeutical. It is surprising how little attention is given to the details of pharmacy and prescribing in the medical schools of the country; in medical societies very little is said about it. To go away from our own city: I attended a course of lectures given by a most admirable physician in Vienna a few years ago. It was one of the general medical courses for undergraduates. The course consisted of one hundred lectures on diseases and their treatment. Of these, ninety-eight and a half lectures were devoted to the pathology, history, course, symptoms, clinical features of the disease. Treatment was postponed till the end of the term, and then only one and a half lectures out of one hundred devoted to it!

In these lectures there were, I think, but two drugs mentioned.—it seems to me the same attitude of the medical profession towards medicine as the surgical attitude would be if during a course of surgical instruction no description of surgical instruments was ever made, no directions or suggestions how the knife should be held or which end should be used. The ordinary curriculum is such that the young physician is ill-equipped for prescription writing, and during the early part of his professional life he writes bad prescriptions. Perhaps he has been imbued with the idea that only one medicine should be given at a time, and he gives this one medicine in water or in alcohol, or makes a nauseous and disagreeable medicine that the patient hates to take. I think it is a fact that some of the proprietary medicines present the medicinal agent in a better condition than most physicians are able to prescribe extemporaneously. I am afraid there are not many physicians here who would be able to write for a perfectly pleasant and acceptable laxative for children to take, one that children would "cry for;" yet there is such a one; and I think it should be a source of great mortification that we cannot, each of us, write for as good a one. There are a number of instances of that sort, where proprietary medicine has exceeded in certain qualities that which we are able to do extemporaneously. If I have an asthmatic patient, I can prescribe a mixture of stramonium and saltpetre, and one or two flavoring ingredients, which would be an agreeable mixture; but many are satisfied when they have ordered stramonium for the patient to smoke. This makes a nauseous smoke, which many patients dislike exceedingly. There are a good many proprietary asthmatic cures whose basis is stramonium, but attention has been given to flavoring, and they are better than the things we offer. It appears to me that the use of proprietary medication in its more restricted sense, *i.e.*, by physicians only, is very much more extensive in suburban and country places than in the city; and rather more extensive in physicians whose opportunities for education have been somewhat limited, than in our best men. They are the people who are most prone to try new things, who are most susceptible to the pleasing flattery of the agents who present the medicine to them. It is not always lack of knowledge that gives the proprietary medicine dealers a strong hold on physicians. I had a very pleasant interview with one of them a few days ago, who persuaded me, perhaps too easily, that I was the most eminent physician in the city of Boston, and he had "called on me first, to get an early opinion of the thing he presented." However, I had been through that experience several times before, and took it for what it was worth. Flattery goes a great way with a good many of us, and is, I think, another strong hold which the manufacturers have over us.

I am surprised that none of these gentlemen have referred to a very important publication of the Medical Pharmaceutical Society, in this direction of offering open formulæ to the inspection and use of the physicians, which in a certain degree cover the ground of acceptability of media and preparation of many of these proprietary medicines,—called, I think, the "National Formulary," a book of about one hundred and fifty pages, corresponding somewhat to the unofficinal formulæ published in Great Britain and other countries. The book includes a large number of elixirs, various flavors intended as vehicles, elegant combinations, imitations of popular medicines, and a large class of articles of that sort. A careful study of this work would almost completely obviate the necessity of going outside the United States Pharmacopœia for any preparation, however elegant it may be desired to make it. I should advise every physician to purchase a copy of it, and study it carefully, and use their elixirs occasionally as vehicles. It is surprising to find how poor our regular pharmacopœia is in elixirs, or in attempting to flavor medicine. Among the powders, or mixtures, or fluid extracts, there is scarcely an attempt to render them any less disagreeable than their infernal nature makes them originally.

To sum up, it is desirable that we should give more attention to making our prescriptions agreeable to the eye, acceptable to the nose, and palatable to the taste. There is a great proportion of medicines whose bases are disagreeable, which can be made tolerably acceptable by a little skilful flavoring. In this respect I have had many times a most valuable aid from one or two intelligent pharmacists, to whom, in earlier years, I used to go repeatedly to ask what is the best vehicle for this, and best combination for that. Now this "National Formulary" will help almost any physician out of difficulty; and the habit of tasting his own medicines will help him more. I have been several times through the mortifying penance of pocketing a medicine at the bedside of a patient, carrying it home, and replacing it by better things prepared at my own expense.

Prof. Edgar L. Patch, who had expected to be present, was detained, but sent a letter to the Secretary, expressing his views upon the subject as follows. "The question under discussion is a many-sided one. From my experience I would judge that the too constant ordering of proprietary or pseudo-patent remedies lessens public confidence in the ability and resource of the physician, yet I can also see where it may be to the advantage of the prescriber to designate the ready-made pill, elixir, bougie, syrup, etc. And while it would be pleasant for the physician to write his prescription and trust to the judgment of any pharmacist what should be furnished, we must admit that judicious care for his success may lead him to elect, properly, who by preference should do his compounding, for the patient looks solely to him for a cure. If he elects the manufacturer, it may make it inconvenient and costly for the pharmacist and the patient, but we assume that he considered this before writing the recipe, and esteemed the possibility of a cure more than cost, trouble, or delay.

As pharmacists, we prefer to do our own compounding, and would be pleased to have the physician specify the standard of strength of the pill, elixir, syrup, etc., in active ingredients, and permit us to select the excipient, flavoring adjuvant, and method of combining; yet, as in justice to himself and his patient the physician should know that his intention is literally followed, it may oftentimes be asking too much by exacting this confidence.

We might judge that the adherence to standard pharmacopœial remedies would meet every indication and need, but such a course we well know would prove a bar to progress in medicine and pharmacy, and deny the world knowledge of valuable therapeutic agents, simple and compound, first brought to light, maybe, through the enterprise, greed, or whatever we may call the actuating motive of the chemical and pharmaceutical manufacturer, who is by no means an unqualified evil.

Yet it would seem a step in a right direction if well-defined officinals and such semi-officinals as our "National Formulary" contains were ordered without affixing a maker's name, referring if need be to the U. S. P. or "National Formulary," if lack of uniformity is feared.

Mr. E. S. Kelley said: Within fifty years the manufacture of proprietary medicine has grown from a very small thing to a trade of vast proportions, and enormous sums of money are annually spent to bring it to the attention of the public. If it is intended to reach the masses, the vendor goes into the daily papers with extensive advertisements, and in a short time has made the name of his article a household word. The source of these preparations is frequently a well-tried prescription of some reputable physician, which a druggist has often compounded. Hearing frequent and good reports of its cures, he dresses it up in an attractive style and gives it a name, and then launches it forth to meet the reward peculiar to all mercantile ventures: a few succeed, the many fail. The number of such remedies is very great: one wholesale store in New York City has 3300 kinds in stock, all asking to be tried and all promising great good to the sufferer. But another class of manufacturers, more concientious than the former, and thinking to aid the physician, appeals to *him* through that orthodox channel of advertising, the Medical Journal, and thus his goods are not black-listed, but are considered reputable, and the physician uses them with no more compunction than he does the drugs of the pharmacopœia. These manufacturers also send samples to the doctors through their travelling salesmen, who are often gentlemanly physicians and carry the printed formula of their wares, and thus beguile the honest practitioner to give them a trial, which he frequently does, and later the manufacturer solicits his written endorsement, which is used to make a tidal wave upon other men in the profession. Thus an enormous business has fallen to these *Pharisee* manufacturers, as it seems proper to style some of them at least, for they appear to offer more meritorious goods than those vendors whose advertisements only appear in the papers. Personally, I see no difference between the two, and regard one with the same favor as the other; thus Ayer's Cherry Pectoral is considered to be a good cough medicine, and is based on the prescription of a physician, yet it is seldom prescribed because it does not appeal to the physician through the right medium. Other proprietary prep arations, on the contrary, enjoy the confidence of the medical profession, although shown to be of very poor quality. The influence of proprietary pharmacy upon the practice of medicine is most marked. If asked if the influence is good for the physician I answer yes, and no. There are thoughtful, well-educated men who offer preparations of merit which demand a place; the benefit derived from them by the sick is great, and warrants their use; these find their way to the physician almost solely through the medical journals. But the unscrupulous manufacturer uses the same channels to present his claims; the attractive appearance of the goods and the plausible story warrant a trial, and endorsements follow (so uncertain are the effects of medicines), all giving impetus to his trade, until it has taken fast hold. Probably none of these articles are void of merit, but are far from what they are claimed to be. Thus the physician may help the good and the bad, not because he is indifferent, but from want of knowledge of that which these poor goods contain. If medical men are not to confine themselves to the preparations of the pharmacopœia, and there are few who do, how shall they know those proprietary goods which they should patronize? I answer, by having supervision on the part of the United States government over all this class of medicines. France does this through its Academy of Medicine, to which all formulas are subjected, and if approved, the owner can put the preparation on the market, otherwise he cannot; hence we find French proprietary medicines extensively used the world over, regarded with favor and commonly prescribed.

If our government would adopt a similar plan we should be saved from many of the frauds which flood the market. Let a board of examiners be appointed, consisting of physicians, chemists, and pharmacists, and let the would-be vendor offer a sample of his goods as intended for market, and have them properly tested; the working formulas also; the physicians can then pass judgment upon worthiness, the chemists and pharmacists should make the preparation according to the formula offered, and then compare results. If the board is satisfied, allow the manufacturer to make his claims before the public in any way he sees fit — the daily press or medical journal, — then doctors and the laity will both feel that their interests are protected.

The great variety of pills with their published formulas which come from reputable makers adds much to the assortment of proprietary goods, among which are found some of the valuable prescriptions of well-known men, which even if not followed exactly may offer suggestions; as physicians, like men in trade, are learners by observing and reading the results of their colaborer's works.

The chemists of to-day are actively at work bringing forth so many new substances with wonderful claims, that it is difficult to speak their names or remember their uses and doses. Some of them have been patented, so that a high price is maintained for that which costs but little; and if fortunate enough to get used in hospital practice and well written up, they find an immense sale through this best of all advertising, to the prejudice of articles just as good and very much cheaper. This is notably true of antipyrine, and will prove so of still others.

In conclusion let me say, the physician of to-day is better furnished for work than ever before, and it is proper to encourage men to study and prepare goods ready to his hand, which are in many instances better than those which the physician alone can think out. The chemist and pharmacist both come to his assistance in many instances, performing in the laboratory upon a large scale that which the druggist cannot do in a short time or in a small way; thus giving him the results of long-continued study; and if there is any virtue in medicine the careful observations of honest men will winnow the chaff from the wheat, and the physician, manufacturer, and public be alike benefited.

Dr. Blodgett believed the effect of proprietary pharmacy disadvantageous to the physician. It tends to induce him to prescribe ready-made preparations rather than take the trouble to think for himself; the tendency is rapidly becoming established to provide the physician with what he thinks he wants; or to provide him with something and make him think he wants it; and we are thus unwittingly introducing proprietary medicines in the place of those which should be prescribed by the physician, and be prepared according to his directions.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

Regular meeting, Monday, November 5, at the Medical Library, 19 Boylston Place, Dr. W. Ingalls in the chair.

Dr. J. T. G. Nichols read a paper on

CASES OF EMPYEMA.[1]

Dr. A. Cabot said that in his experience cure by repeated aspiration in empyema was rare, except when there was free expectoration and discharge of pus through the bronchial tubes. Among the dangers from delay in aspirating he considered first the loss of the patient's strength; and secondly, after aspiration the lung collapses, and the pulmonary pleura adheres to the costal pleura; should we then have to open the chest, we have a cavity which the lung cannot fill up, being bound down by the adhesions to the costal pleura. He remembered a case of empyema following pneumonia, in which there was free expectoration of pus and foul material; operation was not advised, and the patient left the hospital. Patient returned, however, in a few weeks, and an opening was made into the chest, through which fully one third of the lower lobe of the lung came out as a big slough. The patient, to his surprise, made a good recovery, and after three months there was good respiration audible to the base, with but slight diminution in the measurement of the affected side.

Dr. E. O. Otis asked what solution was used in washing out the chest, and what were the indications.

Dr. Nichols replied that he generally operates with the spray, using antiseptic precautions. He rarely washed out the chest, except in case of a fetid discharge or of some obstruction to the outflow. He then uses a weak solution of phenyl or a weak solution of chlorinated soda.

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[1] See page 3 in the Journal.

Dr. A. Cabot said that he has had as good results without the spray as with it.

CASE OF TREMOR.

Dr. J. J. Putnam reported the case of a man thirty-nine years of age, who was the subject of a marked form of "intention tremor" of unusual history. He had been well up to a year and a half ago, and there had been nothing in his history before that time to explain the present symptoms. In the spring of 1887, while in Washington, he had well-marked periodic attacks of "dumb ague," fever without chills recurring every third day. This continued for a number of months, and left him much debilitated. The nervous symptoms came on during the convalescence from this sickness in the fall of 1887. The tremor was first noticed in the head and muscles of the body, and in the speech, which at one time was so much affected that he could with difficulty be understood. The arms became very soon involved, and the legs also, but to a less degree. The symptoms are said to have been at their height some time last spring; since then they have gradually subsided. At the present time his condition is as follows. When he sits quietly nothing abnormal is seen, but a slight effort, even that of talking, often brings on a fine tremor of the head, which soon subsides. His speech is highly characteristic of the so-called "scanning" variety. His gait is practically perfect. The most marked symptoms are seen in the use of the arms. When he tries to grasp anything, for example, or still more to hold his arm out a short distance in front of him with the elbow bent, a violent shaking comes on, somewhat as if he were trying to deal cards rapidly, and this often leads to a strong supination and extension of the hand and arm, so that it is stretched out strongly forward and to one side. The left arm is much worse than the right. When told to touch the end of his nose with his forefinger, he throws the hand against the face, grasping the chin to steady the arm in that way, and then, after waiting for the shaking to subside, he can manage to get his finger on to the nose.

The sensibility of the skin is perfect. The one other symptom of importance is the exaggeration of the knee-jerk on both sides, and perhaps a trace of ankle clonus. Dr. Putnam suggested that in view of the rapid onset of those symptoms and the fact that they had improved to some extent, the patient might be suffering from disseminated myelitis, such as has been described by Westphal and others as following small-pox and other infectious diseases, and in this case it was presumably due to the intermittent fever.

Dr. Walton said he should agree with the diagnosis, although he had never seen a similar case.

EXHIBITION OF SPECIMEN.

Dr. Cabot exhibited a specimen which he had removed from a middle-aged woman who for two years had suffered from symptoms thought to be due to hip disease. Examination showed a tumor in the pelvis to the left of the uterus, which by pressure on the nerves had caused the pain. The tumor was detached with some difficulty, and consisted of two parts,—the anterior part hard, the posterior soft and fluctuating, containing fœtid pus.

Recent Literature.

A System of Gynecology by American Authors. Edited by Matthew D. Mann, M.D. Vol. II. Philadelphia: Lea Brothers & Co. 1888.

We noticed the first volume of this work on its appearance more than a year ago. This second volume completes the gynecological part of the enterprise. The same qualities which were characteristic of the first volume are conspicuous here: the thoroughly practical way in which the various subjects are treated, a wide knowledge and fair appreciation of what has been done in foreign countries, and withal a distinctive American independence of thought and flavor of originality about the whole. Some of the writers have earned the right to be regarded as the founders of the American school of gynecology, and many of the others have sat under their teaching, and are as thoroughly representative as their masters.

In such a work as this there must necessarily be, as we pointed out in our former review, a marked difference in the character of the several contributions. They vary in merit, but it is safe to say that there is not one of them which is unworthy of its place.

The first article is on "Diseases of the Vagina," by Dr. C. C. Lee. The author is concise and to the point. He dismisses the question of the gonococcus too lightly, and the contribution as a whole is perhaps not quite comprehensive enough for a work of this character. "The Hystero-neuroses," by Dr. Geo. J. Engelmann, is a long treatise on this obscure and rather neglected subject. It is certainly full of suggestions, but the obvious criticism is that the author has given too wide a scope to his theories, and makes too close a connection between pelvic disorders and remote symptoms. Dr. T. G. Thomas writes an exceedingly practical paper on "Extra-Uterine Gestation," giving due prominence to the necessity for early treatment by electricity to destroy the fœtus, or if that fails, prompt laparotomy.

No one is better fitted to write of "Tumors of the Breast" than Dr. S. W. Gross. As is natural, their pathology is very fully treated of, and a large number of new illustrations, especially of the microscopical structure of the various growths, add value to the article. The next contribution, by Dr. Roswell Park, on "Diseases of the Breast other than Tumors," worthily completes this subject.

Dr. Edward W. Jenks, in his paper on "Fistulæ," gives an interesting historical sketch of the various operative procedures which have been recommended for their cure, and describes very fully and lucidly the modern methods which have proved so successful.

Dr. W. H. Baker contributes an article on "Diseases of the Bladder and Urethra." This is exceptionally complete, and full of practical suggestions; and, especially in the matter of treatment of the various affections, many of which are exceedingly obstinate, will be a valuable guide.

"Non-Malignant Tumors of the Uterus" are treated of by Dr. R. Stansbury Sutton. He includes under this head the various forms of fibroid tumors and adenoid growths. The latter may be said to lie on the border line between malignant and non-malignant growths, a possibility which the author overlooks. The medical treatment of fibroids is given too little place, and the Apostoli method is not noticed, possibly because the article was written before that method was published.

Dr. W. T. Lusk contributes an exceedingly good article on "The Malignant Diseases of the Uterus," which include the different varieties of cancer and sarcoma. Then follows "Lacerations of the Cervix Uteri," by Dr. Bache McE. Emmet, so exhaustive that one almost feels that the last word has been said on that subject.

"Chronic Inversion of the Uterus," by Dr. S. C. Bussey, is the next article, and calls for no particular mention.

One of the freshest and most original papers is that on "Injuries and Lacerations of the Perineum and Pelvic Floor," by Dr. Howard A. Kelley. Perhaps the most valuable feature of it is the stress laid upon relaxation as the most important of all injuries, and some new illustrations make its demonstration a simple matter.

Dr. William Goodell treats very fully and entertainingly of "The Treatment of Ovarian and of Extra-Ovarian Tumors." Dr. Robert Battey and Dr. H. C. Coe jointly discuss "Diseases of the Ovaries." the former describing in perhaps too egotistic a tone "Battey's operation," the latter writing of the affections of the ovaries in general. In this and in the first section of "Diseases of the Fallopian Tubes," by the same author, the pathological changes are very fully described.

Dr. W. Gill Wylie writes of "Salpingitis" *con amore.* It is needless to say that the operative treatment is given due prominence.

"The Pathology of Ovarian Tumors" has been held deserving of special consideration, and is fully treated of in an interesting paper by Dr. Stephen Y. Howell. The editor, Dr. M. D. Mann, contributes a paper on "The Clinical History and Diagnosis of Pelvic Tumors, other than Uterine and Tubal," which is very practical, and contains many valuable hints.

Dr. George T. Harrison's article on "Displacements of the Uterus," which closes the volume, is a conservative and thoughtful study of these conditions and the means appropriate to their relief.

This second volume bears out the promise of the first, of a system of gynecology which shall worthily represent American originality and progress in this department of medical science.

— The Board of Health of Illinois, says the *New York Tribune,* a few months ago revoked the license of H. G. Wildman, a physician, to practise medicine in the State, the chief charge being that he had overstepped the ethics of the profession by advertising his success and skill in newspapers. Wildman appealed the case to Governor Oglesby. He renders his opinion, reversing the decision of the Board of Health, and claiming that a physician should not be debarred from practice because he advertises what he can do and has done. Wildman expends over $40,000 yearly in advertising in papers all over the Union, and several papers in this State went on his bond in the suit.

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POPULAR MEDICAL SUPERSTITIONS.

Inasmuch as there is reason to believe in the continued existence of minor superstitious customs concerning health, sickness, and death among communities usually considered intelligent, it may be interesting, by way of comparison (with amendment also in view), to note the following, as illustrative, anent the intimate life of an almost stagnant people, who have been for centuries separated from all ethnic kin, completely surrounded by alien races.

With the Saxons of Transylvania (Gerard), when a new-born child is feeble it is usual to put into the bath yolks of eggs, bran, sawdust, or a glass of old wine. The visit of a woman with a babe at her breast may deprive the young mother of her milk. If the child is subject to frequent and apparently causeless fits of crying, this is proof positive of its being bewitched.

When, in an adult, the first symptoms of disease are felt, all his friends advise him to hold out against it. Although the torpor of typhus be upon him, he must not lie down, as that would be a concession to the arch adversary; he is made to walk about, even when death is visible in his face. By no means should a doctor be summoned. Some old woman versed in herbal physic may be called, but generally the pastor, by chance hearing of the affliction, furnishes the only intelligent care. It is considered well to burden a patient with clothing. The like habit is prevalent in the stifling sick rooms among the country people of Brazil. Death is regarded as a treacherous enemy to be conciliated or conquered. "He has put off death with a slice of bread," is said of one who has survived some great danger. When the end is evidently near, the mattress is drawn away from the sufferer, for, "as every one knows," he will die more at ease upon straw. The corpse, washed and shaved, is dressed in wedding attire, which has been religiously preserved, perhaps for many years, especially for this purpose. A similar custom obtains in portions of China.

The following incidents illustrate the economical mind of the industrious, saving inhabitants: "When the sick man felt that his end was near, he, referring to the unused medicine, said, 'Keep it carefully for the next person who falls ill; it would be a pity to waste it.'" A peasant having come to be bled, when the surgeon was about to close the wound, the man said, "Doctor, since I have come a long way to be bled, you might as well let ten kreutzers' worth more of blood flow."

We give a few specimens of belief in regard to diseases and remedies. An article of clothing dropped on the ground will convey intermittent fever to any one finding it. The first three corn ears seen in the spring will, if eaten, keep off ague that whole year. Garlic is considered a cure for manifold ills, and an antidote to poisons. Rheumatism is cured by wearing a little bag of garlic and incense. Epileptics may be restored by anointing with the blood which flows when a cat's ears are cut off. Witch-burning was formerly an everyday event, the date of the last being 1752.

There is a legend with this people that architects formerly put a living human being into walls of edifices (churches, etc.), to ensure stability. Of late, this form of murder becoming more dangerous, or the inhabitants more enlightened, the person's shadow, *i.e.*, the measure of the shadow, is used instead.

Among the Roumanians (of this land beyond the forest) co-limitous with those of Teuton race, a moribund may be restored to life if, on Holy Saturday, he be laid at the church door, so that the priest, in procession, can step over him — a sort of faith-healing. It is affirmed that a determined effort, by a strong will, is able to make even a dead person live again. Earth from a freshly made grave serves as a cure for fevers; and a bone from the right arm of one deceased will, by its touch, heal boils. The hand of a murderer is credited with power to subdue pain in the side. It is believed that a pair of trousers, hung across a roadway, will pacify the spirit that causes cholera. The swallow is a luck-bringing bird, but a crow is of evil omen.

Mediæval France (Challemel) nourished many superstitions in regard to substances and methods to be employed against disease. We cite a few examples yet existent in various rural districts: to drive away fever, the bone of one dead was carried as an amulet, or a green frog was put into a bag and this tied to the patient's neck. Wrapping a child in a damp shirt preserved it from every ill. Disease of the ears could be removed by touching them with the hand of a skeleton. Headache passed away when the temples were tied about with a cord which had been used to hang some one.

The populace of Tokio, Japan, have great faith in the power of a certain goddess (made of kiaka wood), to heal all skin diseases of children. This image occupies a sitting posture; the believing mothers rub their hands over the thighs of this personage, and then apply their energized fingers to the part affected. A cure is expected with exemplary faith. The widespread existence of integumentary affections in this region may be due to infection by such means.

As an instance of local laical logic in matters medical, we report this incident: recently, in this State, a gentleman, presumably of average intelligence, said to a physician that rheumatism could be cured by drinking milk in which a handful of bird-shot had been boiled for some time. The person who gave this advice stated that he knew the remedy to be efficacious, because he had tried it on himself with a very satisfactory result. The electric ring, made of lead and, widely purchased, shows credulity surviving in spite of popular education.

Ideas resembling those above referred to were influential in the life of the people resident in ancient India; and some of such customs observed by our cotemporaries are, doubtless, direct descendants of practices chronicled by early Sanskrit writers.

An apparently slight superstition may cause great remote harm, as exemplified in death from neglect under treatment by so-called Christian Science. The schoolmaster, and not of the sectarian sort, is the most effective, though not an infallible, means against beliefs beyond fact.

IS "JAMAICA GINGER" AN INTOXICATING DRINK?

Men and women of bibulous proclivities, who are balked of their drink either by the pressure of public opinion or by the law, are apt to resort to such substitutes as cologne, alcohol, bitters and "tonics" of various kinds. Jamaica ginger "fills a long-felt want" with such persons, and the trade in this product has undoubtedly increased greatly of late on this account. A case interesting to the lawyer as well as to the doctor has lately arisen from these facts.

The city of Quincy, Mass., has adopted the policy of prohibition of the sale of alcoholic drink, but a grocer of the town has had manufactured and put up for him a preparation of Jamaica ginger, of which he sold large quantities to men and to women. The husband of at least one purchaser notified the grocer to desist from selling the ginger to his wife, who had been in the habit of purchasing two bottles a day. Finally, the grocer was indicted and tried before Judge Sherman in the superior court at Dedham.

In the trial a chemist testified, as reported by the daily press, that he had analyzed the ginger, and found it to contain 69 and a fraction per cent. of alcohol, as compared with the 40 to 50 per cent. in ordinary whisky and brandy, about 3 per cent. of the solution of Jamaica ginger, and the balance water. Counsel for the defendant asked the court to rule that, if the article was Jamaica ginger, then it was not a prohibited article, but that it was a medicine, and the defendant had a right to sell it. He also asked the court to rule, if the defendant sold it not knowing it to be intoxicating, that he could not be convicted. The court refused so to rule, saying it was a question of fact for the jury to decide whether it was intoxicating liquor within the meaning of the law, and on this point Judge Sherman read to the jury the statute, which provides that no person shall keep for sale or sell intoxicating liquor without a license, and that liquors containing more than 3 per cent. of alcohol should be deemed intoxicating within the meaning of the law, and that distilled spirits should be deemed intoxicating liquor. The court further ruled that it was not of any consequence whether the defendant was ignorant of its intoxicant quality, he not having any license to sell intoxicating liquors; if this Jamaica ginger was, in fact, intoxicating liquor, he was liable for a violation of the law, and it was no excuse that he did not know it.

The jury, after being out several hours, failed to agree, and were discharged. Had a verdict of guilty been rendered, it is said that the case would have been reported to the Supreme Court to pass upon the question whether the Jamaica ginger in question comes within the meaning of the law as an intoxicant, and whether a man can be convicted for selling it without a license.

REMOVAL OF A TUMOR OF THE BRAIN.

Dr. E. H. Bradford removed a tumor weighing about nine drachms from the brain of a patient at the Boston City Hospital, last Friday. The symptoms, which had lasted about two years, were headache and double optic neuritis, with some vertigo and vomiting, tactile hemianæsthesia, most marked in the left arm, and loss of muscular sense in the arm, paralysis of the left arm, and partial paralysis of the leg, with contracture and exaggerated tendon reflexes, and convulsions, beginning with a sensory aura in the left wrist and clonic spasm of the left hand. The tumor was located by Dr. P. C. Knapp before the operation, in the ascending frontal convolution just below the level of the first frontal sulcus, and extending upwards and backwards. The correctness of the localization was proved by the operation. The patient, who was in a feeble condition, died of shock about three-quarters of an hour after the operation.

TREATMENT OF TUBERCULOSIS.

At the late meeting of the Italian Society of Internal Medicine, held in Rome, Dr. Renzi of Naples spoke of the treatment of tuberculosis, and urged the importance of sulphurous inhalations and inhalations of iodine in this disease. It seems that consumption is still by far the most prolific source of mortality in Naples, one fourth of all the deaths being attributed to this disease. Dr. Renzi thought he had seen good effects obtained in phthisis by breathing the sulphurous vapors of the solfatare of Pouzzoles, an extinct volcanic crater near Naples, and this gave him a hint to employ in private and hospital practice the sulphurous acid and hydrogen sulphide inhalations which have recently won some éclât in France. This treatment, he affirms, has always notably calmed the cough and diminished the oppression.

Iodoform has seemed useful in alleviating cough, lowering the temperature, diminishing expectoration, and subduing dyspnœa. Iodine dissolved in spirits of turpentine and administered in inhalations has rendered good service in moderating the profuse diarrhœas of phthisis.

At the same meeting, Dr. Pettorati of Naples, stated that he had had good results from sulphuretted hydrogen in lavements (a method now going out of vogue), especially in the first two stages of phthisis. In two cases, in particular, so marked was the amelioration — with almost entire disappearance of the physical signs — that the patients were regarded as cured.

Drs. Sciolla, of Genoa, and Araras, of Catania, spoke favorably of hydrofluoric acid inhalations, which they had known markedly to help the cough, the respiration, and the general symptoms of pulmonary phthisis.

THE DISCUSSION ON THE TREATMENT OF FEVER AT THE MEETING OF THE GERMAN NATURALISTS AND PHYSICIANS.

At the meeting of the German Naturalists and Physicians lately held in Cologne, the subject of the treatment of fevers in infectious diseases was discussed. There was not unanimity as to the value of antipyretics in these fevers. Pott, of Halle, denied that high temperatures constitute a permanent danger to patients, and was rather disposed to look upon a considerable degree of pyrexia as salutary. The fever, he thought, killed off the micro-organisms, on condition, however, that it lasted a good many days; moreover, the infectious fevers may be very grave without any pyrexia whatever, as is often seen in the case of typhus abdominalis. He would utterly proscribe antipyretics in the eruptive fevers and in pneumonia, and he would never give baths, except to promote the functions of the skin.

Thomas, of Fribourg, did not assent to the view that fever is to be regarded as a process of cure, and believed, to a certain extent, in antipyretics, especially in children's diseases.

Von Jaksch, of Gratz, admitted that antipyretics never cure the disease or shorten its duration by one hour; nevertheless in certain cases they relieve the symptoms and are of unquestioned utility.

MEDICAL NOTES.

— Mr. William B. Rice is the donor of the new City Hospital at Quincy, Mass.

— Dr. Chas. V. Chapin has been elected city registrar of Providence, R.I., in place of Dr. Edwin M. Snow, deceased.

— Dr. De Wolf, commissioner of health of Chicago, is preparing plans for a hospital for contagious diseases in that city.

— John Langfelt, a Rock Rapids, Iowa, boy, is the possessor of artificial extremities for all of his limbs. During the great blizzard of last January he had his hands and feet so frozen as to necessitate the amputation of the whole four.

— The resignation of Dr. H. T. Formad as junior professor of pathology and anatomy at the University of Pennsylvania is announced. The direct cause of Dr. Formad's resignation was the promotion over him of Dr. John Guitéras, United States navy, to succeed Prof. Tyson.

— A patient is at present under treatment in the Boston City Hospital for burns contracted in the following manner. Being afflicted with rheumatism he anointed himself with oil (not in the Scriptural manner, but with kerosene). He then stood up before his fire to bask in its pleasant warmth, and the oil ignited. *Mem.*, that kerosene oil and heat as therapeutic measures are sometimes incompatible.

— We regret to learn that Dr. Alfred Hosmer, of Watertown, an ex-president of the Massachusetts Medical Society, is suffering from an attack of hemiplegia, which followed a long period of very exhausting labor, as his practice has spread well over Middlesex county. He was taken ill the 29th ult., and is said at the present time to be improving. There is therefore ground for hope that the lesion will prove to have been not an extensive one.

— A daily paper says that "the warning that has been sounded against turning the leaves of books with wet fingers, for fear of microbes, was based on investigations by the authorities among the circulating libraries at Dresden, to determine whether they were a medium for the communication of infectious diseases. Soiled leaves of books were rubbed first with dry fingers, and then with wet ones, and the result miscroscopically examined. No microbes, or few, were found on the dry finger, but many on the wet finger. It did not appear that any of them were infectious, but the result of the experiments was held to justify an earnest warning against putting the finger in the mouth when turning the leaves of books.

— A Russian paper, speaking of the state of the medical profession in that country, says: "There are only 18,000 doctors in a population of 100,000,000, or one medical man to every 6,500 persons. This number of doctors in proportion to the population is very much less than in other European countries, yet the destitution among members of the profession is alarming. Of late there have been numbers of suicides of medical men who were without the bare necessities of life. The fees for medical attendance are very low. Still, in Odessa, 40 per cent. of the whole population and 94 per cent. of the very poor died without having had medical attendance. A similar state of affairs exists at Kostrome. Dr. Yaroshevski attributes this deplorable condition of things to the ignorance of the Russian people, who prefer to consult soothsayers and magicians rather than educated medical men, to the monopoly enjoyed by the pharmacists, and to the large number of Feldshers who are allowed to practice. The Feldshers are men who have some rough knowledge of surgery and the use of a few drugs. They are generally men who have served in the ambulance corps or have been hospital attendants, and on the strength of this slight knowledge they are licensed to practice.

— We have room for but a few sentences from the glowing account of a Caesarian section served up to its readers by the Brooklyn *Citizen*: —

"On Wednesday last Ellen Murphy, a single woman, twenty-six years of age, a dressmaker by occupation, residing at No. 451 West Twenty-seventh street, was admitted to the hospital. She was about to become a mother.

"Upon physical examination, it was found that in consequence of the existence of a deformity in the lower part of her body a birth could not take place in the natural way.

"As the hands of the big clock in the corner denoted the hour of ten, Dr. Rustin Maury placed the ether cone over the mouth and nose of the patient.

"Half a dozen inhalations and she was anæsthetized. House physician R. W. Greene, of Providence, Rhode Island, sponged off the woman's side with a bichloride solution.

"Professor Lusk took up a keen-edged probe-pointed bistoury. In a twinkling the cuticle in the side was slit a distance of thirteen inches.

"Ready hands with tenacula drew back the tissues, and further and further in went the knife. There was not much hemorrhage, and it was easily controlled.

"At length, through tenacula, forceps, muscular tissues, and blood, the babe came forth to the light of this wicked world.

"The child's breathing was difficult, and for half an hour he was subjected to alternate dippings in broken ice and hot water. The doctors call this treatment artificial respiration."

NEW YORK.

— The new Arnot Ogden Hospital at Elmira was opened with public exercises December 20. Mrs. Arnot Ogden erected the building at a cost of $75,000, and it has been endorsed to the extent of $50,000 by other members of the Arnot family. The consulting physicians are to be Drs. W. C. Wey, T. L. Squire, and C. W. M. Brown.

— A pleasant reception was given on Saturday evening, December 22, at the New York Post-graduate Medical School and Hospital, and many prominent physicians and citizens were present and inspected the hospital wards and the fine new laboratory. During the past autumn more than two hundred graduates in medicine have been in attendance in the various courses of the school.

— The Training School for Male Nurses, which through the liberality of Mr. D. O. Mills was built and presented to the city last June, was opened by the managers December 19, and arrangements have been made with the authorities of Bellevue Hospital by which a two years' course of training will be given to men desiring to become professional nurses. Out of one hundred and ten applicants twenty-two were admitted to the school.

— The nineteenth annual report of the Manhattan Eye and Ear Hospital, just published, is naturally devoted to a considerable extent to the loss which the institution has sustained in the death of its secretary, the lamented Dr. C. R. Agnew. In regard to his work in connection with it the report says: "This hospital is a monument to his organizing faculty, to his Christian philanthropy, to his self-denying perseverance in the face of difficulties and discouragements, to his personal devotion to the afflicted poor, to his contagious enthusiasm in making friends for the institution and touching the springs of their benevolence. Among the many distinguished and earnest men who have stood firmly by it during the past nineteen years, Dr Agnew was *facile princeps*, as the moving spirit in all its affairs." In recognition of his eminent services, the directors desire to have an endowment fund of the hospital in his name, and have appointed a committee for the purpose of raising this memorial fund. During the past year 430 patients have been refused treatment at the hospital on account of ability to pay.

Miscellany.

THE PALAIS DE LA RAGE.

The Paris correspondent of the *Sunday Call* writes thus regarding the building of the new Pasteur Institute in Paris: "The institute is in the shape of the letter T, and the base or façade of the first building is one hundred and thirty feet in length; that of the second is one hundred and eighty feet. Opposite the entrance, in the centre of a flower-spangled lawn, parallel to the outer fence, is the bronze group remarked at the salon of 1888 — the little shepherd, Jupille, struggling with a mad dog. Entering the gate in the Rue Dutot, near the Boulevard Vaugirard, the visitor finds himself before a brick and stone building in Louis XIII. style; on the cornice of the central pavilion are engraved the words, "Institute Pasteur." Higher is a marble slab, with the inscription, "Souscription Publique, MDCCCLXXXVIII."

Ten steps outside and eight steps inside the door lead to a grand vestibule opposite the gallery, with stained-glass windows, that joins the two buildings. The first window contains, at the right, the apartments of M. Pasteur — salon, dining-room, study, and sleeping rooms. At the left are the special laboratories and the immense library, finished in oak and ornamented by six Doric columns. Here were held the dedicatory ceremonies, and already the library is called the *salles des bustes*, because the generosity of the Czar, Dom Pedro of Brazil, Baron Alphonse de Rothschild, Count de Laubespin, Mme. Furtado, Heine, and Mme. Boucicaut of Bon Marché fame, is recalled by their marble resemblances scattered about. The second story is devoted to the preparatory rooms and private laboratories.

The second building, much larger than the first, is consecrated to the work that necessitated the foundation of Pasteur Institute. The ground floor on the garden side is called the "department of hydrophobia." It comprises waiting room, registering room, inoculation room, a room for dressing wounds, another provided with camp-beds for patients in a state of syncope, and washing apparatus for both doctors and patients. Besides, there is a room for the archives, the room for the preparation of vaccine, and another for the spinal columns of rabbits. The last mentioned has double doors and windows, in order that the temperature may be even, and a special gas apparatus is provided for heating the room. All other portions of the building are heated by steam. The second story is divided into two portions. The first, at the right, is devoted to micro-biology, and this department is directed by Dr. Roux. The second portion is devoted to biological chemistry, under the direction of Prof. Duclaux. All these rooms terminate in an immense work-room, containing seven tables with tops of enamelled lava. Each table is large enough for two students to occupy themselves with microscopical studies. In Dr. Roux's department is a special laboratory, reserved for Dr. Gamaleia, the student of anti-cholera vaccine. On the ground floor, opposite the hydrophobia department, is a large dissecting laboratory, a photographic laboratory, an amphitheatre for Prof. Duclaux's classes, and a room with aquariums, reserved for M. Mentchikoff, who there will study fish and zoology in general. In the courtyard is a small building devoted to the animals used in experiments. Another building will contain dogs, rabbits, sheep, etc., afflicted with hydrophobia. Then come open and closed kennels, and last a building for large animals. Outside a row of cages and poultry-yards is a building reserved for raising the rabbits that are brought from Etang-la-Ville, a property of the Pasteur Institute. All these are under the care of guardians, lodged in a central building. Pasteur Institute was commenced in May, 1887, thanks to a public subscription of $600,000. The architect, M. Brebant, is willing to accept nothing for his labors, and certainly his bust deserves a place among those of the most illustrious subscribers."

MANIA FOLLOWING OPERATIONS.

Francis J. Shepherd, M.D., surgeon to the Montreal General Hospital, writes on the above subject in the *American Journal of the Medical Sciences* for December, 1888, and gives six illustrative cases. The fact that insanity may follow accidental or surgical injury, other than that involving the brain and its membranes, has long been recognized, and not a few cases are reported in medical literature. Individuals addicted to alcoholic excesses not infrequently, after severe injuries, especially of the lower extremities, develop delirium tremens, and, indeed, it is not so very uncommon to see delirium follow severe injuries of the lower extremities in persons who are not habitual drinkers. Only a short time ago the writer saw two cases of delirium following intracapsular fracture of the femur in old women. The cases, however, which are noticed, are those in which insanity is developed after surgical injury.

Cases of insanity, melancholy, etc., are reported from time to time following operations on the female genital tract. Not a few cases of insanity following ovariotomy are recorded, and in a recent paper by Werth, six cases of psychical disturbance are reported in three hundred operations on the genital tract.

The mental disturbance in the six reported cases lasted from two to six weeks: three cases were cured, and three were not improved; one of the latter committed suicide. Two of the cases followed extirpation of the uterus, two castration, and two washing out of the bladder. Ahleld reports a case of marked mental disturbance following the introduction of a speculum. In a paper read before the Dublin meeting of the British Medical Association, August, 1887, by Dr. George Savage, of London, a number of cases of insanity are reported following the use of anæsthetics in operations. In some of the cases cited the insanity is clearly due to the anæsthetic, but in others the connection is not so clear, and traumatism as a cause cannot be altogether excluded. Dr. Savage asks, "How long after an operation may the effect of an anæsthetic be felt?" In certain cases, in which days have elapsed before symptoms develop, it is hard to connect the conditions; but in many of these cases careful examination will reveal that there was depression, drowsiness, or irritability from the first, so that, although the maniacal attack had been postponed, the disorder started at the time of the operation. In some cases Dr. Savage has seen death follow from a condition resembling general paralysis of the insane.

In a case of surgical operation followed by insanity, in which an anæsthetic has been used, it is very difficult to say which was the exciting cause, the traumatism or the anæsthetic. It appears that traumatism has a much larger share in the production of the mania, for in how many thousands of cases is an anæsthetic given for purposes of exploration and examination without any ill effects resulting. In all the cases but one, reported, iodoform was used in small amount, and on the surface only. In all the cases mania rapidly followed the operation.

In Case II. anæsthesia had been produced several times before without any ill result. In two of the cases the patients had a distinct family history of insanity. In Case V. the patient was an epileptic, and several of the family were likewise affected. In Case III. no family history could be obtained, but the patient had always been queer, and at times very excitable. Two of the cases died maniacal, and one case never recovered complete sanity. In one case pneumonia was a complication, and no doubt hastened death. Some may say that the mania was produced by the pneumonia, but mental disturbance was noticed before the supervention of pneumonia, and was either due to the anæsthetic or the surgical injury, or to both causes combined. Three of the cases followed operation on the abdomen and its walls. Whatever was the cause of the mania in the cases reported below, the fact remains that mania followed operation, and in three cases with disastrous results

Seeing that such serious results occasionally follow operations performed on individuals who have a strong predisposition to insanity, or who have suffered from previous attacks, the writer questions whether it is advisable to operate on such individuals when the operation is of no great urgency, and is not essential to the prolongation of the patient's life.

TUBERCULOSIS FROM COWS.

The sub-committee of the Dominion Parliament appointed last season to inquire into the matter of the communication of tuberculosis from animals to man have concluded their labors. From questions propounded to all prominent medical men in the Dominion Provinces they have come to the conclusion that the disease is communicated to man through the flesh and milk of cows, and they will in the next session of Parliament recommend that precautionary legislation be enacted.

Correspondence.

THE AMERICAN MEDICAL STUDENT IN BERLIN.

Boston, Dec. 31, 1888.

Mr. Editor, — It seems to me that the views expressed in a letter which came to me to-day from Berlin may be worth printing in the Journal. The writer, who graduated from the Harvard Medical School, and was afterwards a valued interne at the Massachusetts General Hospital, has been studying, the last few months, in Berlin. Under date of December 14th he says: "There is no chance to do anything here yourself. All the material is being used for teaching and the very 'private' courses, so called, are full to running over — sixteen to twenty men. One can see as many operations as he wishes, and by good men, and get a good many points. But just tell your men at the School that they will get just as much, and more, if they 'tend up' and take the places that are open to every one in Boston. . . . I had a most excellent course in *bacteria*, and am thoroughly enjoying seeing how men accomplish the same results as we did — yet I am not Europe-mad."

Yours respectfully,

An American.

THE RUSSIAN HOSPITAL BARRACKS,

AND IN PARTICULAR THE HOSPITAL ALEXANDER OF ST. PETERSBURG.

Paris, Nov. 30, 1888.

Mr. Editor, — A recent journey to Russia and a sojourn of a few weeks in the capital has enabled me to study the equipment of several of the hospitals and the working of the medical schools in that metropolis. I propose in two successive letters to examine, first, the organization of the hospitals, then that of the medical schools. In this letter I shall describe the hospital barracks, and, in particular, the Alexander Hospital of St. Petersburg. I must, however, first say something of the general organization of the hospitals of that city.

The municipality of St. Petersburg has the disposal of four thousand five hundred beds, distributed among a great number of hospitals, the most important of which are the Hospital Obonchowska, which contains a thousand beds, and the Hospital Kalinkinska, which contains nine hundred and fifty. The city spends annually on its hospitals almost 1,500,000 roubles (6,000,000 francs), and the cost for each patient is about 3 fr. 20 (80 copecks) per day. But this includes only a part of the hospital establishments of St. Petersburg; private funds have created a great number of hospitals, among which I might mention that of the Princess Marie, which contains five hundred beds; the Hospital of the Ladies of the Red Cross, a well-equipped group of hospital barracks, and, lastly, the Hospital of the Society of St. George, which also includes some model barracks.

The hospitals of the city, like those endowed by private funds, are managed by physicians-in-chief, who are both medical directors and administrators of these establishments. They receipt all bills, sign all checks, superintend the cuisine, and are responsible for all that takes place in the hospital. Generally the rôle of administrator assumes prominence over that of medical director, and most physicians-in-chief have no medical service; the latter is performed by the subordinates and internes; the internes being all physicians. There are services of medicine and services of surgery, to which are sometimes annexed special sections of gynæcology and obstetrics.

To this medical staff are added the dressers in chief *(feltschers)*, who have charge of the surgical dressings, and who have under them the corps of nurses. These feltschers receive a special medical instruction, which is quite complete. With regard to these dressings, I may remark that in all the hospitals they are never made in the patients' wards: a special ward is set apart for dressings. Little portable wooden tables enable those on duty readily to perform these dressings, whatever may be the seat of the wound.

The care of the ward-rooms is entrusted to certain lady overseers, called Sisters of Charity, who are, however, not nuns, but widows or unmarried females who abandon their hospital services when they get married.

A pharmacist-in-chief is attached to each hospital. He has under him a number of pharmacists, who prepare the medicines for the patients in the hospital and for the out-door patients. These pharmacists do not go the rounds with the attending physician, but get their orders (with the day-book) from the head dresser or interne-in-chief.

Three assistant physicians are always in charge, the one having the supervision of the medical department, the other of the surgical, while the third receives the patients during the day and keeps watch of what is going on in the wards.

When I shall have said that the medical students do not attend the clinical visits at the hospitals, and that only those physicians who wish to take special courses are allowed to accompany the hospital physician in his rounds, I shall have alluded to the principal points in the internal management of the hospitals of St. Petersburg.

These hospitals are not all of recent construction; some of them are made out of edifices originally designed for another use; old barracks, for instance. Others have been built upon old models and differ from our hospitals in nothing, unless it be their adaptation to the rigorous climate of the city. I will add that these establishments are kept exceedingly clean, that medical and surgical antisepsis is carried out there with great rigor, and that, owing to the surveillance of the physicians-in-chief, the food there is much better, both in respect to variety and choice, than that of our hospitals. I have only one fault to find with these hospitals, — the beds are too low, and, what is worse, they are too narrow.

But the most original and important feature connected with the construction of these hospitals is the wooden barracks, and in particular, the hospital barracks of relatively recent contrivance. Among the old hospitals there are hospitals for the winter and hospitals for the summer, the latter being constituted by barracks very nicely constructed. This arrangement, which obliges the patients to go into different quarters in summer and in winter, has the advantage of enabling the hospital management thoroughly to cleanse the wards when they have been vacated.

The illustrious surgeon Pirogoff was one of the first to show the advantages derivable from wooden constructions for hospitals. He believed that these structures should only be temporary, and at the end of ten years they should be burned. In 1872 Berthenson put in practice the precepts of Pirogoff in establishing, for the Hospital of the Ladies of the Red Cross, barracks which have since served as models of their kind.

Moreover, Dobroslawin, one of the Russian physicians who has done the most for hospital hygiene, has shown all the advantages of this system of barracks; he favors having them only one story high, elevated above the ground in such a way as to permit a sufficient ventilation under the wards; he insists also that the windows shall be on the sides, and that there shall be ventilating apertures in the ceiling, with movable shutters.

But the citizens of St. Petersburg are indebted to Prof. Botkine, curator of the hospitals, for the most complete edifice of this kind, and it was under his direction that the hospital-barrack Alexander was constructed, an eleemosynary institution which may be looked upon as the type of a hospital conforming to all the exigencies of hygiene. Begun in 1880 on the plans of the architect Sokoloff, this hospital was opened April 17, 1882. A commissioner had rigorously fixed the conditions which this hospital ought to fulfil, and great pains had been taken to find a suitable site. Dr. Archanguelski made a thorough study of the soil, and under his direction a complete drainage of the grounds was effected.

The sum expended on this hospital was 2,000,000 francs ($400,000). This hospital contains two hundred and fifty patients, who are distributed in twenty-two barracks, twenty of which are for patients and two for convalescents. There are buildings for the hospital managers and others for disinfection; laboratories, kitchens, a stable, etc., complete the outfit of this hospital.

All the barracks destined for patients are separated from each other. They are all constructed on a uniform type, except the two barracks destined for convalescent patients. All the barracks on the right side are occupied by men, all on the left by women.

If now we undertake to describe each barrack, we note, first its elevation from the ground; the simplicity of its construction, consisting essentially of a ward for the patients, and an adjoining building which is a necessary appurtenance of the barrack, and which contains one antechamber, a bathroom, a kitchen, the superintendent's office, and water-closets. Entrance is effected by a stairway at each extremity of the barrack.

Five windows on each side give light to this ward, which contains only twelve beds. Three scuttles placed on the roof with movable lids conduce to the ventilation of this apartment, but this ventilation is chiefly effected by four drums placed at the two extremities of the ward.

With respect to the barracks of the convalescents the arrangement is somewhat different; here we have a double barrack building, and the centre is occupied by a large ward which serves both for the dining-room of the patients and for a place of recreation. This building is completed by a veranda, which extends the length of the ward, here the convalescent patients can promenade without danger of getting wet. The central building has two stories, and the upper story is reserved for the nurses and the general service. The sleeping rooms for the convalescents are two in number, one at each extremity of the dining hall; each of these wards has fifteen beds.

These hospital barracks, those pertaining to both patients and convalescents, are constructed in the same manner; their walls are of woodwork. the interior is covered with a coat of plaster which is painted and varnished so that the walls are exceedingly smooth and impermeable. The cellar or underground part is occupied only by two large tubs which receive the fæcal matters before these are carted off to the farms. At certain hospitals, as at the Hôpital des Dames de la Croix Rouge, the fæcal matters before their removal are mixed with disinfecting substances.

This is the composition of the mixture employed by Berthenson: —

Sulphate of iron, ...	19.500	kilogrammes.
Sulphate of copper,................	1.100	"
Sulphate of zinc,................	4.900	"
Sulphate of magnesia	2.000	"
Acetic acid,........................	2.500	"
Water,............................	125	litres.

Every litre of this solution is diluted with nine litres of water.

The city of St. Petersburg in fact, has no sewers. Built on piles at the mouth of the Neva, the inhabitants of this city send all their excrement to the soil. We shall see shortly how Dr. Wassilief, in times of epidemic, destroys the virulence of fæcal matters by means of a special apparatus.

All the windows of these barracks are like those of the Russian houses — double, and when the cold weather comes on these double windows are made tight, and are not opened all winter long. Despite this hermetic closure, the ventilation is very perfect, thanks to the four ventilating shafts opening into each ward, which make an energetic suction of air by the double envelop which surrounds the chimney; another source of renewal of the air is the flue which is placed at each window, and which is closed by a valve.

But these barracks are especially dependent for ventilation on the scuttles on the roofs. Dr. Berthenson has made some curious observations relative to the little influence which the opening of the valves of these scuttles has on the temperature of the wards; these observations were made at the Hôpital des Dames de la Croix Rouge. During the winters of St. Petersburg, when the temperature is down to 0 of the Fahrenheit scale, even below it, when, moreover, the temperature was kept in the wards at the physiological standard, it took almost four hours to bring it down one degree when the scuttles were widely opened.

The Russians love much the white color, and it is this color which predominates in the wards. The paint with which they adorn their walls gives to the ward rooms a bright and neat appearance. The floor is itself covered with an impermeable coat of dried oil varnish; in certain cases asphalt is used, and I have even seen operating rooms where, to render the impermeability of the floor complete, it was covered with zinc.

The beds are of iron, they are very narrow and rather low. The bedding consists of a wire-spring mattress, of a straw mattress, and two straw pillows.

Except in the convalescent hospital, the patients all eat in their wards.

The service of disinfection is admirably organized at the Hospital Alexander; it is confided to an expert in hygiene, Dr. Kroupine, who has under his orders a staff of assistants who do the work. The disinfection pertains to the furniture, the wards, the clothing, and the fæcal matters. For the complete disinfection of a ward, it is vacated, then by the aid of a force pump with long nozzle the entire inside of the ward — walls, ceiling, floor — is flooded with a 1:1000 solution of corrosive sublimate; all the furniture, beds, chairs, tables are also subjected to the action of the sublimate solution; as for the bedding, mattresses, clothing, these are transported to the hot steam apparatus *(stove)* for disinfection.

This "stove" serves for the entire population of St. Petersburg, who in times of epidemics send there objects to be disinfected. It is situated in a two-story building. On the ground floor there is a disinfecting oven supplied with steam at high pressure, and made on the model of Geneste and Herscher (of Paris); connected with this stove is an apartment for chemical disinfection; there is an upper apartment, provided with ventilating apertures in the sides, which receives the clothing after disinfection.

As fur plays an important part in Russian apparel, and as fur cannot stand the action of steam under pressure, all fur garments as well as shoes and gloves are carried to the chemical disinfecting room, where they are disinfected by chlorine vapors. Lastly, in the cellar of this building there is a very ingenious apparatus devised by Dr. Wassilief, in which the fæcal matters are subjected to the action of steam under pressure, before being carted to the land. In connection with the hospitals is a stable where a number of milch cows are kept, which furnish these hospitals with plenty of pure milk. Prof. Botkine, you will remember, is one of those who have had the most to say about the advantages of milk diet in diseases.

When a patient is admitted to the hospital, before entering the wards, and in the reception building, he is divested of his clothes, takes a bath, and puts on a suit of hospital clothing, while the garments that he previously wore are sent to the disinfecting stove. If the disease for which he entered the hospital is known, he is at once sent to the barrack, where he takes his place among the other patients affected with the same disease. Each barrack, in fact, is devoted to special diseases; one is set apart for typhoid fever, another for scarlatina, another for acute affections of the lungs, etc. When, however, the diagnosis is uncertain, the patient is sent to the "waiting ward" *(salle d'attente)*, where the disease is studied, and when the diagnosis becomes positive he is transferred to the ward destined to the particular malady from which he is suffering.

When the patients become convalescent, they are placed in the barracks for convalescents mentioned above.

This division of the hospital barracks into isolated buildings, containing each but a few patients, makes a large corps of regular attendants, nurses, dressers, etc., necessary. You will not then be surprised to learn that for the two hundred and fifty patients so treated there is a corps of one hundred and ninety-eight persons needed, of whom sixteen are nurses in chief, seventeen sisters of charity, eighty-two are domestics, sixty-eight are watchers, washerwomen, etc.

It must be admitted that the results accomplished have been remarkable, and in order to appreciate them, we will take as an instance a disease in which careful attention to the hygiene of the surroundings and of the person are of the first importance in the treatment. I refer to typhoid fever. I will cite the statistics furnished by my pupil Louis Meliwoft. From 1882 to 1887, three thousand eight hundred and twenty-eight typhoid patients were admitted; two hundred and forty-five died, giving a mortality of 6.4%. Note in this connection that the method of cold baths is not employed at St. Petersburg, and that typhoid fever is treated symptomatically, *i.e.*, by attending to symptoms as they present themselves in a sufficiently aggravated form to demand medical interference. If we compare this mortality with that which we witness in our Parisian hospitals we arrive at the following results:

In Paris from 1882 to 1888 there were admitted to the hospitals for typhoid fever 22,049 patients, and there were 3458 deaths, which gives a mortality of 15.6%. These estimates, 15.06% for the mortality rates of typhoid fever in the Parisian hospitals, and 6.5% for the Russian barrack-hospital Alexander, show better than any mere argument could do the superiority of the hygienic regulations of the latter hospital. It is not to be wondered at, then, that this system of barracks is extending more and more in Russia. At Charkoff, at Kieff, at Kalonga, at Riga, at Peterhof, and at Lioubanne the authorities are already constructing hospital-barracks on the model of the Alexander Hospital.

It is time that Paris should wake up to the importance of imitating in her hospital constructions these eminently hygienic models. The gift of a lady noted for her benevolence, who has lately died, leaving a large part of her fortune to the city of Paris for purposes of this kind, has now enabled us to realize our wishes with regard to a suitable hospital, and the Boucicaut Hospital is to take for its model the barrack-hospital Alexander, such modifications being made as will render the new hospital better adapted to our climate and our customs.

Very truly yours,

Dujardin-Beaumetz.

LETTER FROM PARIS.

FROM OUR SPECIAL CORRESPONDENT.

Paris, 14th Dec., 1888.

Mr. Editor, —The opening of the Pasteur Institute, which took place about a month ago with great ceremonial, was looked upon as a national fête, but only by its partisans. It has been so fully described in the medical and lay publications that I need only refer to it here. I may, however, give a brief extract of the critical remarks by various writers as to the expediency of such an institution. Even if no patient will ever benefit by it, there is no doubt that M. Pasteur and his lieutenants will, as they are all comfortably lodged in the building. Some of M. Pasteur's staff have received other palpable advantages. Dr. Grancher was promoted from chevalier to officer of the Legion of Honor on the occasion. One writer remarked that this act was an infraction of the law which requires that any person holding a grade of that Order cannot be promoted before the lapse of two years, whereas in the case of Dr. Grancher that time had not expired. M. Duclaux was also promoted to the rank of officer of the Legion of Honor, and Dr. Chantemesse, who has been a doctor of medicine only since 1884, has received the dignity of chevalier of the Legion of Honor.

Medical theories have this in common with political formula, that is, that during a certain time they are marvellously applied to everything. The term bacteriology appears to M. Pasteur to be insufficient to denominate the new science, and he has adopted the word micro-biology instead. But whatever may be the more appropriate term, there is no doubt that this new science is making great strides in medicine, and there is scarcely a communication made to any of the learned societies without referring to microbes. It has been remarked that by the inauguration of the Pasteur Institute it may be supposed that hydrophobia must be a very common malady in this country; but if one should consult the mortuary report published weekly in Paris he will there find that that disease forms a very insignificant coefficient, although somewhat more considerable, as stated by Prof. Peter in a recent communication to the Academy of Medicine, since the introduction of the practice of the antirabic inoculations. Great scepticism prevails in the profession as to the real significance of the presence of microbes in the various morbid processes which occur in the organism, and particularly as to the genuine value of the antirabic inoculations, as they present no analogy with the other inoculable viruses, such as those of charbon and cowpox. But this scepticism prevails not only in this country but in many other parts where medicine is scientifically taught and practised. Institutes in imitation of the one in Paris have been established in many countries, but, it has been remarked with astonishment that there has been none founded in England, although the Scientific Commission, of which Mr. Horsley was the reporter, had testified to the exactitude and value of the experimental facts brought to notice by M. Pasteur.

At the opening of the clinical course of lectures at the Pitié Hospital for this winter, Prof. Jaccoud endeavoured to assign to bacteriology its proper place in medicine, and in doing so he repudiated the right to the title of antimicrobist which has been so gratuitously applied to him from certain quarters. He said that he was far from being an adversary of this new science, for it was impossible to be an adversary of a fact, as the presence of microbes and their rôle in a great number of maladies are well-established facts. But what Prof. Jaccoud refused to admit is, that the patient should be a secondary consideration to the microbe. The whole attention seems to be accorded to these microscopic objects. Even etiology is reduced to the penetration of microbes from the exterior into the organism; diagnosis and prognosis are restricted to the verification and appreciation of microbes; in a word, an attempt is made to transform human medicine into microbian medicine. In doing this the ancient theories of the etiology of disease are altogether repudiated. He warned his hearers against extremes. The co-operation of bacteriology that has now become necessary should not be allowed to replace completely the ancient theories of our fathers of medicine, and the microbe should not make us forget the patient, any more than the precious acquisition of the new science should make us forget the ancient truths on which human medicine was built. The learned professor concluded his lecture with the following salutary advice: — "Use with eagerness, as with discernment, all the resources which science places liberally at your service. It is your duty, it is your interest. But guard against all exclusivism. Remember that the teaching of past centuries is enriched, and not suppressed, by the microbian notions, and never forget that truth and progress are in the narrow and fecund conciliation of traditional medicine and contemporary discoveries."

In connection with the subject of inoculations, Prof. Bouchard lately communicated to the Academy of Sciences a note to the effect that the soluble matters manufactured by microbes may pass through the body of the animal in which they exist, and be eliminated by the urine, preserving at the same time their property of conferring immunity, as shown by the researches of MM. Charrin and Ruffer. To test the value of these researches, Prof. Bouchard inoculated healthy animals with the urine of an animal affected with a virulent malady, and the result was that the healthy animals appeared to have acquired immunity just as if they might have been vaccinated. The urine may therefore be said to have behaved as a veritable bouillon of culture. *A propos* of this, a critical article remarks that this would look as if we were going back to the old method of sorcerers and bone setters of times long gone by, and to their fantastical pharmacopoeia in which the urine held a preponderating position. In fact, to this day the Hindoos attribute to this liquid sacred and medicinal properties, but it must be that of the cow, which they freely administer in all sorts of affections. The writer concludes with the remark that the examination of the urine is useful as a means of diagnosis, but it is to be hoped that this excrementitial product will not give rise to a system of urotherapy.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 22, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Typhoid Fever.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	779	298	23.92	14.43	.97	7.80	6.76
Philadelphia	1,016,758	367	115	11.48	19.60	1.68	16.80	3.92
Brooklyn	751,432	341	135	20.88	10.15	2.32	10.73	2.32
Chicago	760.000	227	98	20.68	10.56	1.32	15.40	1.76
St. Louis	449.160	141	54	20.58	11.36	.71	9.23	2.13
Baltimore	437,155	137	44	9.49	10.95	.73	5.21	—
Boston	407,024	161	52	16.74	15.50	1.24	12.40	.62
Cincinnati	325,000	93	44	18.36	17.28	2.16	11.88	1.08
New Orleans	248,000	119	35	14.45	16.15	1.70	5.10	.85
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	96	31	13.52	18.72	4.16	1.04	1.04
Pittsburg	210,000	—	—	—	—	—	—	—
Milwaukee	200.000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	21	9	27.56	9.52	—	—	—
Charleston	60,145	31	9	9.69	22.61	3.23	6.46	—
Portland	40,000	13	3	15.38	24.07	—	15.38	—
Worcester	76,328	25	11	4.00	12.00	—	4.00	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	25	7	12.00	8.00	—	8.00	—
Fall River	61,203	24	9	16.66	24.96	4.16	8.32	—
Lynn	51,467	17	—	17.64	17.64	5.88	11.76	—
Lawrence	40,175	15	4	—	33.33	—	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36.298	10	1	10.00	—	—	10.00	—
Somerville	33.307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	7	—	—	14.28	—	—	—
Chelsea	27,552	5	3	—	—	—	—	—
Haverhill	24.979	6	—	—	16.66	—	—	—
Taunton	24.796	6	—	16.66	—	—	—	—
Brockton	24,784	4	3	20.00	—	—	20.00	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	6	—	—	16.66	—	—	—
Malden	18,932	5	—	—	20.00	—	—	—
Fitchburg	17,534	7	2	—	28.56	—	—	—
Waltham	16,651	8	1	12.50	12.50	—	12.50	—
Newburyport	13,839	5	1	—	20.00	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2901: under five years of age 969; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 487, acute lung diseases 412, consumption 388, diphtheria and croup 222, scarlet fever 87, typhoid fever 38, measles 35, whooping-cough 34, diarrhœal diseases 34, malarial fever 15, erysipelas 12, cerebro-spinal meningitis 10. From measles, New York 26, Brooklyn 6, Chicago, St. Louis, and Fall River 1 each. From whooping-cough, New York 12, Brooklyn 9, Washington 4, Philadelphia, Baltimore, Boston and Cincinnati 2 each, Chicago 1. From diarrhœal diseases, New York 8, St. Louis 6, New Orleans 5, Nashville 4, Brooklyn 3, Baltimore and Washington 2 each, Philadelphia, Boston, Cincinnati, and Cambridge 1 each. From malarial fever New York 8, St. Louis and New Orleans 3 each, Charleston 1. From cerebro-spinal meningitis, New York 4, Nashville 2, Chicago, Baltimore, Boston and Taunton 1 each. From erysipelas New York 7, Chicago 2, Brooklyn, St. Louis, and Washington 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273, for the week ending December 8, the death-rate was 18.6. Deaths reported 3359: infants under one year of age, 856; acute diseases of the respiratory organs (London) 277, measles 277, scarlet fever 70, whooping-cough 50, diphtheria 48, diarrhœa 41, fever 40.

The death-rates ranged from 9.2 in Derby to 29.8 in Cardiff; Birmingham 18.1, Bradford 16.6, Brighton 20.9, Hull 14.7, Leeds 20.2, Leicester 22.0 Liverpool 23.6, London 17.8, Manchester 21.8, Nottingham 18.5, Plymouth 24.8, Sheffield 17.8, Sunderland 13.1.

In Edinburgh 15.7; Glasgow 20.9; Dublin 27.0

The meteorological record for the week ending December 22, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Dec. 22, 1888.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
Dec. 16	30.12	44.0	51.0	29.0	50	70		60.0	S. W.	S. W.		28	16		C.	O.			.00
" 17	29.56	55.0	57.0	48.0	88	97		92.0	S. W.	S.		24	16		R.	R.		15.30	2.24
" 18	29.17	32.0	38.0	26.0	91	54		72.0	N.	W.		22	24		R.	C		16.45	.74
" 19	29.88	24.0	28.0	22.0	63	80		72.0	W.	N. W.		12	16		O.	C.			.00
" 20	30.23	19.0	26.0	13.0	77	80		78.0	N. W.	S. W.		9	10		O	C.			.00
" 21	29.82	27.0	33.0	19.0	76	84		80.0	S. W.	W.		16	8		O.	C.			.00
" 22	30.41	11.0	18.0	5.0	54	68		61.0	N. W.	N. W.		21	12		C.	C.		.45	T.
Means for the Week	29.89		36.0	23.0				71.0											

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

APPOINTMENT.

F. H. Hooper, M D., has been appointed professor of laryngology in the Dartmouth Medical School.

SOCIETY NOTICES.

Massachusetts Medical Society, Suffolk District. The Section for Clinical Medicine, Pathology, and Hygiene will meet at 19 Boylston Place, on Wednesday, January 9th, at 7.45 o'clock. Dr. A. L. Mason will open a discussion on "Diphtheria" Drs. G. H. Lyman, G. W. Gay, Geo B. Shattuck, C. F. Folsom, J. G. Blake, W. P. Bolles, E. H. Bradford, E. J. Forster, C. F. Withington, H. E. Marion, and others are expected to speak.

A. L. Mason, M.D., Albert N. Blodgett,
Chairman. *Secretary.*

Boston Society for Medical Observation.—There will be a meeting of this society at 19 Boylston Place, on Monday evening, January 7, 1889, at 8 o'clock. Readers: Dr. W. A. Dunn, "Three Cases of Perityphlitis with Recovery;" Dr. A. L. Norris, "Puerperal Metritis complicated by Malaria."

T. F. Sherman, M.D., *Secretary.*

Eighty-Third Annual Meeting of New York State Medical Society.—The annual meeting of the New York state Medical Society will be held in the city of Albany on Tuesday, Wednesday, and Thursday, February 5th, 6th, and 7th, 1889. It will greatly facilitate the labors of the Business Committee if members or delegates desiring to read papers will immediately forward their names, with the titles of their articles, to Dr. D. B. St. John Roosa, 20 East 30th st., New York, chairman of the Business Committee. Papers are promised from Drs. Sternberg, Bulkley, Dana, Corning, Jacobi, Bort, Loomis, Storer, Holt, Felton, and many others.

DEATH.

Died in Lowell, Mass., January 1, 1889, Nathan Allen, M.D., M.M.S.S., aged seventy-five years.

OBITUARY.

EDWIN M. SNOW, M.D.

Dr. Edwin M. Snow, city registrar of Providence, Rhode Island, died suddenly of heart disease December 22. Dr. Snow had been confined to the house by illness for several months in 1888, but had so far recovered as to resume his public duties.

Dr. Snow was born in Pomfret, Vermont, May 8, 1820. He entered Brown University, in September, 1840. An affection of the eyes obliged him to be absent from college during the second year, after which he resumed his studies and graduated in 1845. After graduating he spent two years in teaching and pursuing a course of study with a view of entering the medical profession. In 1847 he continued his medical studies with Dr. W. D. Buck in Manchester, New Hampshire, and graduated in medicine at the College of Physicians and Surgeons in New York city, March, 1849. In June of that year he began the practice of medicine at Holyoke, Massachusetts, and in the latter part of that summer he treated many cases of Asiatic cholera, which then prevailed in Holyoke. In November, 1850, he returned to Providence, where he continued the practice of medicine, and was soon afterward appointed physician of the eastern district of the Providence Dispensary. He served in this capacity for two or three years, during which time, in the summer of 1854, he attended numerous cases of cholera, and became much interested in tracing the connection of the disease with local conditions of filth. A communication from him upon this subject, addressed to the Mayor of Providence, was published by the City Council in March, 1855, and resulted in important changes in the health department of the city in May, 1855. He was appointed city registrar of births, marriages and deaths, July 1, 1855, on the creation of that office, and also health physician and health officer at quarantine. The office of superintendent of health was established in July, 1856, and he was chosen to fill that position. From that time until 1884 he was annually elected as superintendent of health and city registrar, was superintendent of the State census of Rhode Island in 1865 and in 1875, and was supervisor of census for the district of Rhode Island in the national census of 1880 He also superintended a partial census of Providence in 1871 and in 1878. During the war of the Rebellion, in the spring of 1863, he was appointed inspector of hospitals by the United States Sanitary Commission, and spent several weeks in examining the military hospitals in Philadelphia and vicinity, and in visiting the Army of the Potomac opposite Fredericksburg He was a member of and took a prominent part in the meetings of the Quarantine and Sanitary Conventions which met first in Philadelphia, May 13 1857, and in the following years in New York, Baltimore and Boston. He was a member of the National Prison Congress which met in Cincinnati in 1870, and a delegate from the State to the International Prison Congress in London in July, 1872 From May 1866, to May, 1869, he was an inspector of the Rhode Island State Prison and a member and secretary of the State Board of Charities and Corrections from the time it came into operation, June 1, 1869, until December 6, 1872, when he resigned. In 1850 he was elected a member of the Rhode Island Medical Society; in 1851 of the Providence Medical Society, in 1853 of the American Medical Association; was secretary of the State Medical Society from June 30, 1852, to June 6, 1855; president of the same Society from 1876 to 1877, and for several years secretary of the Providence Medical Society He has been a member of the staff of consulting physicians of the Rhode Island Hospital since its establishment, and was also a member of the American Academy of Medicine. In December, 1868, he was sent as delegate from this State to a convention in Springfield, Illinois, in relation to the Texas cattle disease, and was a member and chairman of the Rhode Island Cattle Commission from 1871 to 1872, and from May, 1875, to May, 1878 From 1874 to 1878 he was chairman of the State commission which built the new State Prison in Cranston. He was sent as a delegate from the United States Government to the International Statistical Congress which met in St. Petersburg in August, 1872. During the same season he made an extended tour on the Continent and through the British Isles Dr Snow was one of the original founders of the American Public Health Association, organized in 1872, was vice-president of the same from 1872 to 1874, and president 1875-76. In 1876 he was elected a trustee of Brown University. He was the author of numerous pamphlets and reports, among which are those on "Asiatic Cholera" "Smallpox," and other municipal and sanitary subjects: twenty-four "Annual Reports upon Registration of Births, Marriages and Deaths in Providence," beginning with 1855, and still continued; eight "Annual State Reports in Registration," reports on the census of the city of Providence and the State of Rhode Island, etc.

GEORGE J. BERNAYS, M.D.

Dr. George J. Bernays, one of the oldest and best known physicians of St. Louis, died December 16, aged sixty-four.

E. V. WATKINS, M.D.

Dr. E. V. Watkins, a prominent physician of Newbury, Vt., died December 18, having spent his entire professional life of nearly forty years in the town. He was a physician of more than local fame.

F. D. BARTLETT, M.D.

F. D. Bartlett died at his home in South Dartmouth, recently, at the age of eighty-five years. He was for forty years a member of the Massachusetts Medical Society, and as a successful physician was widely known in both Plymouth and Bristol counties. He was a nephew of Dr. Zaccheus Bartlett of Plymouth, and cousin of the late Dr. George and Hon. Sidney Bartlett of Boston; was a resident of Dartmouth for fifty-five years, and leaves a widow and three children.

RUFUS L WILDER, M.D.

Dr. Wilder, whose sudden death of apoplexy is announced in the New York papers as occurring in that city on the 15th ult., had been for many years the efficient book-keeper and auditor for the Department of Charities and Corrections, New York City, and was at his place of business the day before his death. Dr. Wilder was forty-five years old, a graduate of Harvard College in the class of 1857, and also of the Harvard Medical School. During a part of his early life he practised his profession in Harlem, devoting the whole or a part of his time to this work. He was, however, more inclined to the profession of journalism, and was at one time member of the city staff of the *N. Y. Sun*, and later of the *Tribune*. He resigned his position on the *Tribune* in 1883, and began the work in which he was engaged at the time of his death.

IRA RUSSELL, M.D.

Dr. Ira Russell, a widely known physician of Winchendon, died December 19, after a week's illness of pneumonia, aged 74 Deceased was a native of Rindge, N. H., a graduate of Dartmouth College and of the New York University Medical Department. He had practised medicine for many years in Winchendon and Natick. He entered the army as surgeon of the Eleventh Massachusetts. He served subsequently in many positions on the general medical staff in the field, at Baltimore, St. Louis, Arkansas, and Nashville, and was honorably discharged at the close of the war with the rank of brevet lieutenant-colonel. In 1875 he established a Home for Nervous Invalids at Winchendon. He was possessed of much physical endurance, determination, and devotion to his profession. He was vice-president of the New York Medical Legal Society, a past vice-president of the Massachusetts Medical Society, a member of the Masonic Order and of the Loyal Legion.

HENRY H. FULLER, M.D.

Dr. Henry H. Fuller, an eminent physician of Charlestown, died suddenly at his residence, No. 50 Monument Square, December 12, from heart disease. Dr Fuller had been in failing health for the past year, and for some time his family and friends have been anxious about his condition, although he continued to be about and attend to a portion of his large practice. He went to Bermuda last spring, hoping the change of climate would benefit him, but returned unimproved.

Dr. Fuller was a native of Lowell, where he was born fifty-two years ago. He received his education in the schools of his native city, and subsequently began the study of medicine, and later received his degree at the Harvard Medical School. He then went to Charlestown and began the practice of his profession, which he actively continued during the past quarter of a century. He was immediately successful, and had always had a very large and lucrative practice. Within the past year, however, or since he first experienced heart difficulty last March, he had been obliged to limit the number of his patients.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U S MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED DECEMBER 22, 1888.

Hamilton, John B., supervising surgeon-general, granted leave of absence for sixty days. December 20, 1888

Bailhache, P H., surgeon, to inspect unserviceable property at New York Marine Hospital. December 17, 1888.

Wyman, Walter, surgeon, to proceed to New York, N. Y., and transfer public property. December 15, 1888.

Carter, H R., passed assistant surgeon, granted leave of absence for fifteen days. December 10, 1888.

Magruder, G. M., assistant surgeon, upon expiration of leave of absence to proceed to New Orleans, La., for temporary duty. December 21, 1888

Cobb, J O., assistant surgeon, leave of absence extended ten days. December 14, 1888. To proceed to Evansville, Ind., for temporary duty. December 20, 1888.

Stoner, J. B., assistant surgeon, when relieved to proceed to New York, N. Y., for duty. December 13, 1888.

Geddings, H D., assistant surgeon, upon expiration of leave of absence to proceed to New York, N. Y., for temporary duty. December 21, 1888.

Original Articles.

TWENTY-FIVE CASES OF LAPAROTOMY FOR THE REMOVAL OF TUMORS.

BY A. T. CABOT, A.M., M.D.,

Surgeon to the Massachusetts General Hospital and to the Boston Children's Hospital.

In the following tables are comprised all of the laparotomies done by the writer for the removal of tumors. No case was refused on account of the severity of the operation or the feeble condition of the patient. In two cases, after opening the abdomen, the attempt to remove large and vascular solid tumors was given up in consequence of the existence of general carcinoma of the peritoneum. Both patients recovered from these exploratory incisions.

We have here an unbroken series of twenty-one completed ovariotomies, two fibroid operations, and two exploratory incisions, without a death.

Most of these patients were operated upon in the public amphitheatre of the Massachusetts General Hospital, and were afterwards treated in close proximity to other cases, sometimes in the open wards. They were cared for by the house-surgeons in charge of the other surgical cases.

There has been a prejudice against doing abdominal operations in the midst of other surgical patients. Tait says that these patients should never be operated upon in general hospitals. These results would go to show that the dangers are not so great as have been supposed, or rather they illustrate the improved sanitary condition of our hospitals under the antiseptic régime. It may be interesting to consider the precautions taken in these cases to protect them from infection.

ANTISEPTIC PRECAUTIONS.

The operations were done, as a rule, in the early part of the day, before the room had been used for other cases.

In the first four ovariotomies the operation was done under carbolic spray. In none of the other cases was this employed.

The instruments were prepared by boiling or baking, and afterwards by immersion in a carbolic solution. So far as possible the instruments used in other operations were avoided.

The sponges were specially prepared, and in all the later cases the wool sponges described by Dr. Elliot were used. These were boiled, then soaked in bichloride solution, 1 : 1000, and were never used a second time, so that they were always fresh.

The hands of the surgeon and assistants, and the abdomen of the patient, were scrubbed with soap and water, and then with bichloride solution, 1 : 2000.

No irrigation with antiseptic solutions was used on account of the fear of toxic effects from the absorption of portions of the solution that might be retained; but, as will be shown later, irrigation with hot water was used in several of the cases.

The dressings consisted in a little piece of iodoform gauze laid along the line of incision, and outside of this some loose, crumpled, carbolic gauze, covered with a large pad of absorbent cotton. The whole was held in place by a flannel swathe.

The particulars of the simpler operations seem to be sufficiently explained in the table. The cases which offered special difficulties may be grouped under two headings: —

Large tumors with firm adhesions; and —
Small cysts universally adherent.

LARGE TUMORS WITH FIRM ADHESIONS.

Of this class of cases there were six instances, and of these patients I will give brief histories.

Case 1. A strong woman of fifty was sent to me by Dr. E. G. Cutler in the spring of 1884. Her menstruation began when she was fourteen and ceased at forty-five, never having been irregular or accompanied by pain. For four years she had been troubled with frequency of urination, and for one year she had noticed a gradually enlarging tumor of the abdomen, which began in the left side and finally came to occupy a central position. She had had at times some pain in the left side, but not enough to prevent her work in the kitchen and laundry. There proved to be two tumors, — a large unilocular cyst of the left ovary, somewhat adherent to the abdominal wall; and a smaller cyst of the right ovary, growing into the broad ligament and wedged firmly behind the uterus. This last cyst was removed with some difficulty, and a rent of the serous coat of the rectum was closed by a continuous suture to stop troublesome hæmorrhage. She made a good recovery, and has remained well and strong since.

Case 10. This was a feeble woman of thirty-five. Her family history was negative. The catamenia had always been regular, painless, with but small flow. She was first seen by Dr. F. C. Shattuck three months after the first appearance of symptoms. Her first intimation of trouble was a severe pain in the lower abdomen, which became presently less severe but continuous, and was accompanied by ascites. Dr. Shattuck tapped her and drew off four pints of bloody, serous fluid, and could then feel a rather firm tumor above the pubes. He therefore transferred her to my wards for operation. The tumor was elastic but not freely fluctuating. It proved to be an almost solid papillomatous cyst of the right ovary. It was very adherent to all of the parts about, and was stripped out with a good deal of difficulty. After its removal, a calcareous, subperitoneal fibroid as large as a lemon was found on the side of the uterus. The peritoneum over this was split and it shelled out quite easily. The patient made a good recovery, but complained of some pain in the abdomen up to the time that she left the hospital, which was a month after the operation. In August, 1888, nine months later, she reappeared with a firm resisting mass as large as a cocoa-nut in the right hypochondrium. This projected into the pelvis, pushing the uterus over to the left, and was quite firmly fixed. The patient wished another operation, and this tumor, which was like the previous one, only more solid, was removed with much difficulty. It was universally adherent and fixed in the pelvis. There was a good deal of oozing, and a drainage-tube was left in after thorough irrigation of the peritoneal cavity with hot water. Everything went well until the fourth day, when the right parotid gland became swollen and painful. Three days later the left parotid was similarly

Completed Ovariotomies.

No.	Date of Operation.	Age.	Married or Single.	No. of Children.	No. of Tappings.	Time since first noticed.	Size and Nature of Tumor.	One or both ovaries.	Adhesions	Treatment of Pedicle.	Drainage.	Hospital or Private.	Result.	Remarks.
1	Mar., 1884.	50	S.	..	..	4 years.	Multilocular cyst, 18 lbs.	Both.	To abdominal wall and rectum	Tied and burnt.	No.	P. H.	Recovery.	Well four years late
2	Apr., 1884.	24	S.	..	1	4 or 5 years	Parovarian with cystic ovaries.	Both.	None.	"	No.	P. H.	"	Seen in good heal about a year later.
3	Jan., 1885.	32	M.	..	..	8 years.	Unilocular.	One.	Omental.	"	No.	P. H.	"	Seen in good heal a year later.
4	June, 1886.	45	W.	1	..	2 years.	Multilocular cyst.	One.	Slight in Pelvis.	"	No.	P. H.	"	Iodoform symptom In good health year later.
5	Jan., 1887.	25	S.	..	..	2 years.	Small sloughing ovarian cyst.	One.	None.	"	No.	H.	"	Sloughing due to pre sure of fibroid pedicle.
6	July, 1887.	46	M.	3	..	18 months.	Unilocular cyst, size of cocoanut.	One.	None.	Tied.	No.	P.	"	
7	Aug., 1887.	27	S.	..	..	3 months.	Small dermoid cyst and pyosalpinx.	Both.	Universal.	Tied and burnt.	Yes.	H.	"	Fæcal fistula appea ed 4 weeks after o eration. Closed end of a year.
8	Aug., 1887.	32	M.	..	..	Symptoms for 5 years.	Small parovarian cyst and hydrosalpinx.	Both.	Universal.	"	No.	H.	"	Pelvic abscess forme and was draine through the vagin
9	Sept., 1887.	65	M.	4	2	2 years.	Multilocular ovarian cyst.	One.	Slight.	"	No.	H.	"	
10	Oct., 1887.	35	S.	..	1	Symptoms for 4 months.	Papillomatous cyst.	One.	Extensive.	"	No.	H.	"	Recurrence in 9 mos.
11	July, 1888.	40	S.	..	..	4 weeks.	Suppurating papillomatous cyst.	One.	Extensive and firm.	"	Yes.	H.	"	Recurrence in 2 mos Iodoform symptom
12	Aug., 1888.	26	S.	1 Miscarriage.	..	2 years.	Cystic ovaries, with suppurating tubes.	Both.	Universal, firm.	"	Yes.	H.	"	Same patient as N 10. Suppuratin parotitis.
13	Aug., 1888.	36	S.	..	..	9 months.	Papillomatous cyst.	One.	Extensive.	"	Yes.	H.	"	
14	Aug., 1888.	35	M.	..	..	Symptoms for 3 months.	Double suppurating cysts.	Both.	Universal, firm.	"	Yes, 2 tubes.	H.	"	
15	Aug., 1888.	33	S.	..	4	1 year.	Multilocular cyst, 40 lbs.	One.	Extensive, firm to abdominal wall.	"	No.	H.	"	
16	Aug., 1888.	31	S.	..	..	4 years.	Unilocular cyst.	One.	None.	"	No.	H.	"	
17	Oct., 1888.	22	S.	..	..	1½ months.	Suppurating dermoid.	One.	Extensive, and very firm.	"	No.	H.	"	Injury of ureter an establishment of urinary fistula.
18	Oct., 1888.	51	M.	Several.	..	15 months.	Multilocular, large.	One.	None.	"	No.	H.	"	
19	Oct., 1888.	29	M.	3	..	3 years.	Multilocular.	One.	Extensive and very firm to omentum and bowel	None found.	No.	H.	"	
20	Oct., 1868.	29	M.	..	..	3 years.	Multilocular.	One.	None.	Tied and burnt.	No.	H.	"	
21	Nov., 1888.	..	S.	..	..	2 years.	Multilocular. Suppurating.	One.	Universal, very firm.	Tied.	Yes.	P. H.	"	Fæcal fistula appeared on 4th day. Wa closed on 10th day.

Operations for Fibroids.

No.	Date of Operation.	Age.	Married or Single.	No. of Children.	Time since first noticed.	Size and Nature of Tumor.	Treatment of Pedicle.	Hospital or Private.	Result.	Remarks.
1	Sept., 1886.	26	M.	1	1 year.	Subperitoneal fibroid, size of lemon.	Was none.	H.	Recovery	Tumor shelled out easily from under the peritoneum.
2	March, 1887.	25	S.	..	2 years.	Fibroid of body of uterus, filling the pelvis.	Extra-peritoneal with Koeberle's clamp.	H	"	Pyelitis caused by pressure on ureter entirely relieved by operation. For full report, see *Boston Medical and Surgical Journal*.

Exploratory Operations.

No.	Date of Operation.	Age.	Married or Single.	Time since first noticed.	Nature of Tumor and Complications.	Hospital or Private	Result.	Remarks.
1	Aug., 1886,	51	M.	2 years.	Semi-solid tumor. Secondary nodules on omentum and elsewhere in abdomen	H.	Recovery.	Died some months later of general cancer.
2	Sept., 1888.	40	S.	2 weeks	Semi-solid tumor. Disseminated cancer of peritoneum.	H.	"	

affected. The inflammation in both sides ran a rather severe course, leading to a limited suppuration, and the convalescence was very slow. She left the hospital about eight weeks after the operation, still in a somewhat feeble condition.

Case 11. This patient, a rather feeble-looking woman of forty-five, entered the hospital in June, 1888. Three or four months before she had begun to have pain in the right lumbar region, which was increased during the menstrual periods. Four weeks before entrance she first noticed a swelling in the right hypogastrium. In the early part of July she began to have fever, and the pain in the lower part of the abdomen became more severe. There was a good deal of tenderness over the whole abdomen now, and the tumor was exquisitely sensitive. The existence of suppuration was pretty evident, but whether the pus was in an ovarian cyst, or whether an abscess was pushing its way up from the posterior part of the abdominal wall, could not be made out clearly. July 17th I aspirated, and established the existence of pus in the fluid. An incision was then made at once in the linea semilunaris, over the most prominent part of the tumor. This point was selected as affording the most direct drainage if it proved to be a simple abscess. On opening the abdomen, however, a cyst came at once into view. It was intimately adherent over its lateral and posterior aspects, and during its removal, which was accomplished with much difficulty, considerable pus escaped into the peritoneal cavity. One small portion of the cyst wall was so firmly adherent to the brim of the pelvis near the ureter and the large vessels that it could not safely be torn away and it was therefore left. The abdomen was thoroughly irrigated with hot water and a drainage-tube was put in. The recovery was slow but steady. The tube was left out at the end of three and a half weeks and the sinus at once closed. Two months after the operation, an examination of the patient showed that another tumor was rapidly growing from the left side of the pelvis. It had then already reached the size of an infant's head, The abdomen was again opened and a condition of disseminated carcinoma of the peritoneum was found, in addition to the large tumor, which was quite solid and universally adherent in the pelvis. In view of the general distribution of the cancer throughout the peritoneal cavity, making its thorough removal impossible, it was not deemed wise to attempt interference with any part of it. The wound was therefore closed and the patient made a good recovery.

Case 15. A slight, emaciated woman of thirty-three was sent to my wards by Dr. George Haven in August, 1888. She was a native of Newfoundland. Her catamenia had been regular until March, 1888, when they ceased entirely. She had already noticed in February that her abdomen was increasing in size. She was tapped in May, and three times after that, with intervals of three weeks between. She had during this time lost a great deal of flesh, and at the time of entrance her abdomen was enormously enlarged, with dilated veins running over it. August 24th she was operated upon. The tumor was a great, multilocular cyst which had to be broken up with the hand before it could be removed. It was adherent over almost the whole of the anterior abdominal wall by very firm adhesions, which bled quite profusely when they were separated. The hæmorrhage was stopped by the pressure of sponges and by deep sutures. The tumor weighed forty pounds. In spite of her very feeble condition before the operation, this patient made a capital recovery. She rapidly regained flesh and strength, and returned to Newfoundland in November.

Case 17. A young woman of twenty-two entered the hospital early in October, 1888. Her catamenia had always been regular, but accompanied by pain and quite profuse. During the five months immediately before her entrance she had flowed much less than formerly. There was some leucorrhœa. For a long time she had had pain and straining during micturition, and latterly there had been increased frequency of urination. She had first noticed a tumor in the abdomen four and a half months before. At this time there was a sharp, cutting pain in the right hypogastrium and a bearing down pain through the pelvis, which lasted severely for about a week. Since then she had had occasional attacks of a similar character. For three or four weeks a dull pain and sore feeling in the lower part of the abdomen and through the back had persisted. The tumor had grown quite rapidly. At the time of entrance it was about the size of a man's head, and lay in the centre of the belly. It was indistinctly fluctuating, and was very sensitive to pressure. She had some fever, with a temperature of 100° F. at the time of entrance. For two days after she was under observation the temperature steadily rose until on October 5th it was 104.8° F. The fever then began to go down, until it reached 102° F. on October 8th, when it was decided to operate. The tumor proved to be a thick-walled dermoid cyst containing much hair and some plates of bone. It was extremely adherent to the rectum, and in both flanks, especially in the right. The adhesions here would not separate, and were very short, so that the tumor could not be lifted out to get at them. As they were gradually reached they were clamped and cut. When finally the tumor was thus removed, a considerable portion of a much-dilated and tortuous ureter was found on the posterior wall of the cyst. The bladder end of the ureter had been tied into the pedicle. So much of its length was gone that it did not seem possible to bring the ends together, even had the prospect of their firm union with a water-tight joint been good. The renal end was therefore hunted up and fastened into the upper angle of the wound with fine sutures. During the removal of the cyst, which was suppurating, much of its contents escaped into the peritoneal cavity. Thorough irrigation with hot water was therefore practised before the wound was brought together, and a glass drainage-tube was left in the pelvis, being brought out in the lower angle of the wound. That afternoon the temperature rose to 104.4° F., but it fell to 97° F. the next morning, and after that never rose above 100° F. The patient made a good recovery. She was fitted with a shield that caught the urine running from the ureter, and kept her perfectly dry by day, and often did not leak at night, although it could not be relied upon when she was lying down. She is now, November 25th, waiting for a full recovery of strength to undergo a nephrectomy for the relief of the dribbling from the hydronephrotic kidney.

Case 19. A married woman of thirty entered the hospital in October, 1888. She had had three children, the youngest aged eight, and an abortion fourteen years ago. Nothing unusual was noticed about menstruation until four years before entrance, when she had for several months an excessive flow. Three and a half years ago she first noticed a lump in the right side of the abdomen, low down. This was painful and tender. It grew rapidly and was tapped once, drawing off "two bucketfuls of fluid." It soon reaccumulated, however, and she was then operated upon by Dr. Berryman of St. John, New Brunswick, who removed a large multilocular cyst. She made a good recovery and felt well for a year after this. The abdominal pain, then returned, and a tumor again appeared in the left side of the belly. It grew slowly but steadily, until at the time of entrance it filled the abdomen, and occupied a central position. This tumor had never been tapped. October 22nd, 1888, she was operated upon. The incision was made just to the left of the old scar, which occupied the middle line midway from the umbilicus to the pubes. The tumor, a multilocular cyst, was firmly adherent to the abdominal wall, to the omentum, and to the descending colon. It was also firmly attached in both flanks and to the rectum. Many of the stronger and more vascular adhesions were tied before being cut. Gradually the bowel and omentum were thus separated from the tumor, and it was slowly, with the exercise of a good deal of force, torn away from its posterior attachments. No pedicle was found, although many large vessels running into the tumor were tied. The extensive oozing from the adherent surfaces was checked by the pressure of sponges. The abdomen was then irrigated and the incision was closed without the insertion of any drainage. The patient had no morphia, the temperature never rose above 100.6° F., which point it reached but once, on the evening of the second day. Her bowels moved on the third day, and her recovery was rapid and complete.

SMALL CYSTS UNIVERSALLY ADHERENT.

Of these cases there were five. In two of them the condition was complicated by suppurating tubes, and in two others the cysts themselves contained foul pus. In the remaining case a hydrosalpinx was associated with a deeply placed parovarian cyst.

Case 7. A young woman of twenty-seven entered my wards in August, 1887. Her family history was good. The catamenia were always regular but accompanied by more or less pain. In 1881 she had a miscarriage when two months pregnant. Since then she had had considerable pelvic distress and pain during and after micturition. There had also been an irregular intermenstrual flow. In May, 1887, she was attacked with sharp pelvic pain accompanied by chilly sensations. After this the temperature was somewhat raised, and fluctuated morning and night. Examination showed the pelvis to be almost filled with hard masses on each side of the uterus. These were not movable and were very sensitive to the touch. This was believed to be a case of salpingitis, and the removal of the tubes and ovaries was advised. August 15th, 1887, this operation was done. She was found to have a dilated tube containing several ounces of pus on the right side, and on the left a little, hard, dermoid cyst. The removal of these was very difficult, as they were deeply placed and firmly adherent in the pelvis. The peritoneum was carefully wiped out and a glass drainage-tube was placed in the pelvis and brought out of the lower angle of the wound. This tube was removed the following day, as the discharge had then dwindled down to a small amount of straw-colored serum. A few days later, however, there was a rise of temperature, and pus began to escape along the sinus in which the tube had lain. A rubber tube was now introduced and considerable pus welled up through it. She was soon up and about, and when the discharge of pus had been reduced to a few drops in the twenty-four hours she was sent out to the Convalescent Home. On November 28th (a little over three months from the date of the operation) a small amount of fæcal matter made its appearance along the fistulous track where the tube had lain. She returned to the hospital, and efforts were made with careful irrigation and drainage of the sinus to induce it to heal, but without avail. She finally left the hospital January 31st, 1888, with a small discharge of pus, and occasional explosions of gas and fæces coming from the opening. She was not seen again until November 21st, 1888. The fistula had finally closed in September, 1888, and the scar was smooth and solid. She had no pelvic or abdominal discomforts of any sort, and could, she said, walk or stand all day without fatigue. She had never felt so well in her life before, and certainly looked the picture of health.

Case 8. A woman of thirty-two was seen by me and sent to the hospital in May, 1887. She gave a history of having contracted gonorrhœa from her husband seven years before. Soon after this she had had a good deal of pain in the pelvis, which was severe enough to prevent her working. She had been an inmate of several hospitals, and thought she had at one time had an abscess discharging into the rectum. When I saw her, the pelvis was occupied by a hard sensitive mass on both sides of the uterus, which was firmly fixed. The condition was thought to be due to pelvic cellulitis, with perhaps a salpingitis as the originating cause. She was treated for three months with applications of iodine to the vault of the vagina, and with tampons of cotton soaked in glycerine. She also had hot douches twice a day. Under this treatment the local condition was considerably improved although the subjective symptoms remained about the same. In August, 1887, the parametritis had largely subsided, and two distinct tumors could be felt, one in each broad ligament. They were believed to be dilated tubes. She now agreed to an operation, and on August 19th laparotomy was done. There proved to be a largely dilated tube (hydrosalpinx) in one side, and a parovarian cyst in the other. These were torn out with some difficulty, but without causing much bleeding. The abdomen was carefully cleared of fluids and closed without the introduction of a drainage-tube. All went well for five days, but she then began to complain of a good deal of pain in the right side of the pelvis. This went on increasing from day to day, and soon a hard resistant mass could be made out in the right hypogastrium. A vaginal examination showed that this mass came quite close to the vagina on the right of the uterus. September 6th she was etherized, and the aspirating needle having drawn pus, an opening was made into the abscess through the vault of the vagina. A large tube was fastened in. After this the cavity rapidly contracted, and at the end of a fortnight the tube was left out and the opening quickly closed. This patient made a slow but steady convalescence, and towards the end of October she left the hospital without warning, while still in a nervous, excited condition.

Case 12. This patient was a young woman of twenty-six. She entered the hospital in August, 1888, on account of pelvic trouble. Her catamenia were always regular but usually painful. Two years before she had had a miscarriage, and after this, for a considerable time, had a vaginal discharge. She was not under the care of a physician during this time. After that her periods were more painful than before. An examination showed a tumor in the right side of the pelvis, about as large as a closed fist. On the left of the uterus was a smaller mass. Both of these were somewhat movable. August 14th, 1888, laparotomy was performed. The tumors proved to be tubo-ovarian cysts filled with foul-smelling pus. They were dug out with some difficulty, and the pus escaped freely among the coils of intestine. The peritoneum was then irrigated with hot water, and a glass tube was put in to drain the pelvis. With the exception of temporary trouble from the absorption of iodoform (see later) this patient made a good recovery, and left the hospital about four weeks from the time of operation.

Case 14. A married woman of thirty-five entered the hospital August 7th, 1888, by the advice of Dr. George Haven. She was married at nineteen, and had never had any children or miscarriages. Since marriage she had had frequent attacks of abdominal pain; and these had been especially troublesome during the past three or four months. A mass was to be felt on each side of the pelvis, of about the size of a closed fist. The pelvic examination caused considerable pain. She was operated upon August 21st, 1888. The tumors proved to be multilocular cysts which had suppurated, and were deeply placed and very adherent in the pelvis. Their removal was difficult and both of them were ruptured. The contents, consisting of pus which contained many small, black masses that looked like bits of coal, escaped freely among the intestines. After the bleeding down in the pelvis had been stopped by the pressure of sponges, the peritoneal cavity was irrigated with hot water. The cavities in the pelvis from which the tumors were removed were separated by a partial septum, so that it was thought best to put a tube into each side. This was done and the wound was closed. This patient's temperature, that had been running between 102° and 103° F., fell to 98.8° F. on the following day, and never again rose above 100° F. She made an excellent recovery and left the hospital at the end of a month. The black masses which were contained in the cysts were reported to consist of detritus mixed with cells and blood-coloring matter.[1]

Case 21. Miss E. B., thirty-four years old, consulted me in October, 1888, and gave the following history. Menstruation was always pretty regular, though sometimes delayed a week. Two years ago she was suddenly attacked with severe pain in the lower part of the abdomen. She was told that she had pelvic cellulitis, and the most acute trouble was on the right side. She was six months in bed with this illness, and it was a full year before she was comparatively well again. When she got up, there was pain in the right hip, and she could not get that heel to the floor. She got about on crutches, but had a good deal of pain through the hip and down the leg whenever she was tired. This lameness remained stationary, getting neither better nor worse, up to the time that I saw her. An examination of the hip showed but little limitation of motion in flexion, but considerable interference with over-extension. Motions of the joint were not painful, even abduction being well borne. The right side of the pelvis was occupied by a tumor that made itself distinctly felt in the right hypogastrium. By vaginal examination under ether this mass was found to be separate from the uterus, to be tensely elastic, and to be firmly fixed low down in the pelvis. It was thought to be a cyst of the tube or ovary, and an operation for its removal was advised. November 5th, 1888, laparotomy was performed. A cystic tumor as large as two fists and very adherent was found. During the attempt to separate some very firm posterior adhesions, the cyst ruptured, and extremely foul pus began to well up out of the pelvis. Finally, by the exercise of a good deal of force the sac was torn away. The firmest adhesion was to the rectum, and here a small portion of the cyst was left on the bowel. The abdomen was thoroughly irrigated with hot water; at least three or four gallons being washed through among the intestines. A drainage-tube was placed in the pelvis and the incision was brought together. The temperature never went above 100.2° F. On the fourth day, when everything seemed to be going well, there was suddenly a considerable discharge of fæcal matter and gas through the tube and wound. Shortly afterwards a small slough was sucked out through the tube. The wound now suppurated freely and the pus was exceedingly fetid. By free irrigation with a solution of chlorinated soda, this condition of things was gradually corrected. Fæcal matter and gas ceased to appear in less than a week, and the wound quickly closed. The patient went home on December 1st (twenty-six days after the operation). The wound was then solidly healed. There was still some stiffness and occasional pain about the hip. But it was then already less than before the operation, and steadily diminishing.

FIBROID OPERATIONS.

In Case 1 the tumor was a small one, but by reason of its position between the pelvic wall and the side of the uterus it had caused a great deal of irritation, which was accompanied by so much pain as to make work impossible. Its removal entirely relieved the pain and restored her to perfect health and capacity for work. In this case and in CASE 10 of the list of ovariotomies, subperitoneal fibroids were removed by splitting the peritoneum, peeling out the tumor, and stitching up the rent in the peritoneum again.

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[1] On October 16th, 1888, Mr. H. W. G. Mackenzie showed some "Blood Calculi in the Ovaries." These were little black bodies similar apparently to those in my case. They lay in cavities in the ovary, two or three together, and seemed to be composed of coagulated proteids. Mr. Mackenzie thought them akin to the colloid concretions so often found in the prostate.

CASE 2, in which hysterectomy was done, has been reported in the *Boston Medical and Surgical Journal* for June 2nd, 1887.

EXPLORATORY OPERATIONS.

In these cases, as it was quickly seen that the complete removal of the disseminated cancer was impossible, no attempt at a partial removal was made. During the examination of each of them, great care was taken not to commence the separation of the tumor from its adhesions. The dangers of partial operations, in which vascular surfaces are left bleeding around a partly separated tumor are well known, and should always when possible be avoided. When an operation is once begun, it is as a rule less dangerous to life to finish it, at the expense of a good deal of laceration of tissues, than to leave the whole or a part of the tumor in. This is due, I think, partly to the fact that the presence of the tumor in the pelvis makes the thorough drainage of the cavity difficult. On the other hand, exploratory incisions, in which no such damage is done, are almost devoid of danger.

IRRIGATION.

A word in regard to the irrigation of the peritoneal cavity may not be out of place, for the value of it is just becoming understood, and I think there is no other procedure recently introduced into the technique of laparotomy to which in so large measure is due the present success of the operation. In the cases reported there were several instances in which pus escaped freely through the abdomen. In two of the cases this pus was very fetid. It can easily be imagined what increased danger of peritonitis there is in such accidents, and how important the thorough cleansing of all the intricate pockets and pouches of the peritoneum becomes under these circumstances. In no way can this cleansing be accomplished so completely, and with so little irritation to the intestines, as by irrigation with a stream of water. Formerly it was thought that the water must be boiled or mixed with some antiseptic to avoid the danger of introducing micro-organisms into the abdomen. The experience of Mr. Tait and others has shown that these precautions are unnecessary, and that plain water drawn directly from the faucet may safely be used in this way. This fact is so at variance with other experience in antiseptic surgery, that much special investigation has been directed to the explanation of this discrepancy.

Wegner has shown by experiments that the peritoneum has an extraordinary power of absorbing fluids. By introducing air and fluids together, he found that so long as he did not put in more than fifteen cubic centimetres of a putrescible fluid, this was absorbed before the bacteria in the air had any opportunity to propagate in it. When, however, the amount of the fluid approached fifty cubic centimetres, portions of this remained not absorbed long enough for the bacterial growth to commence in it, and to set up decomposition.

Grawitz repeated and confirmed these experiments of Wegner's, and found that large numbers of saprophytic bacteria could be disposed of by the peritoneum, if it did not at the same time contain considerable putrescible fluid. If pyogenic organisms were introduced in small quantities, and mixed with only so much fluid as could be easily absorbed, they were quickly destroyed and did no harm, provided that the peritoneum was in a normal condition.

When a very large quantity of these pyogenic organisms were introduced, or when they were associated with so much fluid that the peritoneum could not quickly dispose of it, they gave rise to peritonitis even when the peritoneum was previously in a normal condition.

If, on the other hand, the peritoneum was already inflamed, or if there were an extensive wounded surface in it, or if it contained a blood-clot or serum in which the organisms could propagate, they were then capable of setting up peritonitis even when introduced in small numbers.

Mr. Cheyne, in the Hunterian lectures for 1888, sums up the facts as follows: "In order to develop peritonitis, the cocci must either be introduced in such numbers, along with their products, that a part of the peritoneum is at once injured, and thus ceases to exercise its normal functions, or they must be introduced into an unhealthy peritoneum, or they must be able to grow in the peritoneal cavity, either because fluid is present in too large a quantity to be quickly absorbed, or because the absorptive power of the peritoneum has been diminished, or because some material, such as a piece of blood-clot, or a piece of injured or dead tissue, is present, in which they can develop."

It, is plain, therefore, from these experimental researches, that although the peritoneum is much more tolerant of micro-organisms than was at first believed, still under certain circumstances they may do great harm. It is further evident that by properly understanding the conditions which favor septic trouble we may greatly assist the peritoneum to safely dispose of such germs as find their way into it.

In the first place, the septic organisms which enter the abdomen must be reduced to a minimum, and, secondly, the blood-clots, cyst fluid, and serum which might afford appropriate soil for their development must be thoroughly removed.

All this is best accomplished by thorough irrigation, which washes out the pus and contained germs, that may have escaped from cyst or tube, and at the same time removes the clots and serous fluids.

When extensive wounded surfaces are left in the pelvis, from which an exudation of serum is likely to occur, a drainage tube should be left in to conduct away this serum.

But, it may be said, this serum will be absorbed by the peritoneum, according to the showing of the experiments. That is true, immediately after the operation, but presently the peritoneum around these wounded places glues together and shuts this exuding surface out from the general peritoneal cavity, thus taking away that opportunity for absorption, and then if the serum continues to collect you presently have an abscess to evacuate, as was very well shown in Case 8.

Lastly, in regard to the best way of applying irrigation: In June, 1888, I saw Mr. Bantock wash out the peritoneum in the manner employed, I believe, by Mr. Tait. He had a good-sized Tait's blunt trocar attached to a large rubber tube, which, acting as a siphon, drew the water from a pitcher held high above the patient. With the trocar he was then able to carry the stream down into the pelvis or to any part of the peritoneal cavity, and the water rushing in behind the intestines washed everything out forwards. The procedure, whether original with himself or Mr. Tait, was very thorough, and I have since used it with good success in those of my cases requiring irrigation.

IODOFORM POISONING.

Among these patients there occurred two instances of rather severe symptoms from the absorption of iodoform.

In the first case, No. 4, a very small quantity of iodoform powder was sprinkled along the line of incision, after it had been closely sutured, so that none of the powder came in contact with the wounded surface. Outside of this the wound was covered with dry gauze. This patient come out of the ether well, but was troubled with persistent vomiting. Almost everything taken into the stomach was soon rejected. The vomited matters were dark in color and extremely acrid, so much so that they made the tongue raw, and produced an excoriated line where they ran down over the chin. Little was thought of this at first, as the patient said that she had always been troubled with a bad stomach, and often had such attacks of vomiting. On the fourth day the urine was scanty, only eleven ounces in the twenty-four hours, and an examination of it was made. On adding nitric acid for the albumen test, a black line of iodine was developed between the acid and the urine. The iodoform was at once suspected as the cause of the vomiting, and the dressing was changed. Almost no yellow color remained about the wound, which had united by first intention. The skin was carefully washed and a dry gauze dressing was replaced. From this time the vomiting steadily abated. She now retained a Seidlitz powder and had a movement of the bowels. The quantity of urine increased until it reached the normal amount, and the patient made a good recovery.

In the second case, No. 12, somewhat more iodoform was used about the wound, as a glass drainage-tube was left in the pelvis, and the end of this, projecting above the skin, was wrapped in iodoform gauze. This patient recovered well from the ether, with but little nausea. The next day she was perfectly comfortable, but towards night began to vomit. When I saw her the next day at noon she was constantly vomiting a dark fluid, which had blistered and excoriated the skin of her lips and cheek. The urine was at once examined and a considerable quantity of free iodine was found in it. The dressing was at once changed, all iodoform was removed, and powdered boracic acid was used in its place. At the same time a saline cathartic was administered. Two hours later the vomiting stopped and did not recur.

The characteristic symptom of these two cases was the constant vomiting or rather regurgitation of an extremly irritating fluid. Unfortunately the vomitus was not examined for iodine. In both patients, an immediate improvement followed the removal of the iodoform and the administration of a saline. In neither case was there any manifest effect on the sensorium.

It is interesting to see that a poisonous amount of iodoform can be absorbed from an almost unbroken skin surface. The absorption was no doubt favored, as Dr. E. G. Cutler has shown that it may be, by the pressure of the dressing and the moisture about the wound.

INTRATHORACIC SARCOMA,

PROBABLY STARTING FROM THE PERIOSTEUM OF THE RIBS, IN A BOY OF TWELVE.[1]

BY F. C. SHATTUCK, M.D.,

Jackson Professor of Clinical Medicine in Harvard Medical School; Visiting Physician, Massachusetts General Hospital.

The family history of H. J. is in no way remarkable, except that his mother is said to have died of acute Graves's disease. When five years old the boy fell out of the second-story window into the back yard; the fall was broken by the clothes line, no bones were broken, and after a few days he semed none the worse for the fall. About two years later he was struck by a playmate in the right back, and complained of being hurt at the time; this injury was, however, soon forgotten, and only recalled to the mind of his father by the illness about to be described. The boy was of a studious turn of mind, fond of reading, and never took a very active part in outdoor games.

During October, 1887, a physician, called to see another child in the family, was, as it were, casually asked to look at the boy, who had made some complaints of pain in the back near the lower angle of the right scapula. He is reported to have said that the boy had some congestion of the lung, and, in accordance with his advice, the boy was taken from school. The following spring the questions of another physician brought out the fact, never previously mentioned by the patient, that for some little time before he was removed from school shortness of breath had been experienced if he ran, or hurried up stairs. The pain in the back grew worse during November, and, though it seems to have been present to a greater or less degree most of the time, came in paroxysms of considerable severity. He passed the winter with relatives in Portsmouth, N. H., and returned to Boston in March greatly improved in all respects. He had occasional attacks of pain, but these were much less frequent and severe. In April he accompanied his father on a journey to the South; was seasick on the steamer, but otherwise enjoyed the trip. His friends now think that he flagged a little before June 1st, when he went to the seashore for the summer. It is certain that after this, pain became a more prominent symptom than it had ever been:

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[1] Read before the Boston Society for Medical Improvement, Dec. 10, 1888.

there was extreme tenderness on pressure in the right back, localized, as well as his father can now recall, between the lower angle of the scapula and the vertebræ. A dry, sometimes rather croupy, cough appeared in June and was at intervals troublesome. The months of July and August were marked by much suffering and gradual failure. He was seen by two physicians, who could make no diagnosis. His father reports that on two or three occasions he feared the boy would not live through the night, so great was his weakness. September 1st he was brought to town and seen by me for the first time.

He was tall for his age, pale, in fair flesh, free from fever. Thorough physical examination revealed some dulness over the central portions of the right chest, front and back, with loud and very rude respiration but no râle over the dull area. There was also an extreme lateral curvature of the spine, with the convexity to the left. The curvature disappeared when he lay on his face, and the mobility of the spine was perfect. No positive diagnosis was reached. His father was advised to take him back to the seashore, to encourage him to keep quiet, and to feed him. A thermometer was given him, with instructions to take the temperature twice daily. It may here be stated that the whole course of the disease from this on was unattended by fever. The very last of September he returned to town greatly improved in his general condition. He had had no pain whatever during the month, had consequently slept and taken nourishment better, and was willing to exert himself more than at any time during the summer. His grandfather, who had not seen him for several weeks, said he looked like a different boy. The spinal curvature and the chest signs showed no appreciable change. I may add that a specimen of urine taken at the time of my first interview showed a very faint trace of albumen, the only abnormality detected by the microscope being a few blood corpuscles. At my suggestion the father questioned the boy and found that he was addicted to masturbation. This practice he promised to stop. At a loss to make out the exact condition of things, I then asked Dr. Bradford to see the boy with me, a consultation which did not result in a positive diagnosis. It was advised that the back should be rubbed with lanolin twice daily, and this was done until within a few days of death. The spot in his right back which had been so tender that he could not bear it to be touched was no longer sensitive, and the rubbings were grateful to the boy.

For some days he continued to improve, and voluntarily increased the length of his walks. On a raw day early in October he got chilled standing on the sidewalk looking at the parade of the militia, and this was followed by moderate bronchitis with much prostration. From this on progress was downward, slowly at first, the last three weeks of life very rapidly. The signs of bronchitis cleared away, but stridor appeared occasionally; the cough was suggestive of pressure. Early in October severe pain returned for a portion of one day, passed off, and never recurred. October 12th Dr. Salter saw the boy with me. No sputum could be obtained for a bacillary examination. The appetite and digestion were good, there was no loss of flesh. He went out a few times to walk, more frequently to drive: but he gradually grew less inclined to exert himself. He passed most of his time on the sofa or bed, lying indifferently on either side. There was a slow increase in the physical signs in the right chest, and about November 1st I noticed a slight swelling, without change of color in the skin, notable tenderness, or fluctuation, between the vertebræ and the inner border of the scapula, an inch or so below the spine of that bone. The cardiac impulse began to move downwards and to the left finally reaching the sixth interspace: the right interspaces became less distinct than the left; absolute flatness with great resistance under the finger extended in the front from the extreme apex to mid-sternum, and below to the liver flatness; the latter reached below the costal cartilages but the edge of

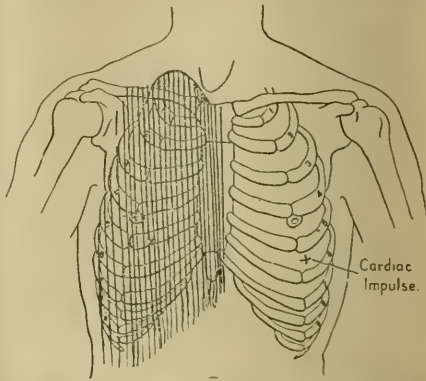

Fig. 1.—One week before death. Flat and very resistant percussion over shaded area (Whistling and bronchial respiration, loss of vocal fremitus and resonance. Interspaces flushed with ribs. No râles No glands to be seen or felt. A localized bulging, seen from the front, over right anterior axillary line, on a level with 4th and 5th ribs.

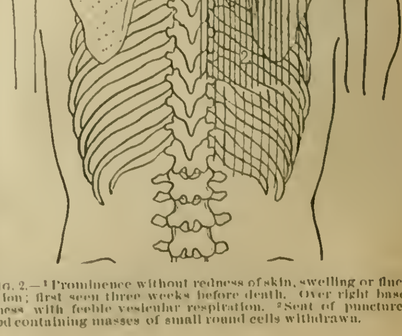

Fig. 2.—[1] Prominence without redness of skin, swelling or fluctuation; first seen three weeks before death. Over right base dulness with feeble vesicular respiration. [2] Seat of puncture, blood containing masses of small round cells withdrawn.

the organ could not be felt. In the back the flatness extended somewhat below the inferior angle of the scapula; over the base there was dulness, with feeble vesicular respiration and vocal fremitus. All over the flat area respiration was bronchial and somewhat whistling, and the vocal fremitus was lost. Nowhere could adventitious sounds be heard. Dr. Bradford saw the boy again with me, and we decided to puncture the chest in order to determine whether we had to deal with a solid tumor of glandular or other origin, or with a collection of pus coming from the mediastinal glands or the spinal column. November 18th I plunged a medium-sized aspirator needle into the back above and inside of the angle of the scapula and gradually pushed it in to its full length; strong suction brought away nothing until the needle was partially withdrawn, when several drachms of blood, unmixed with air, passed out. At no time did the needle give the sensation of lying in a cavity. The blood was given to Dr. Whitney for examination and was found to contain some masses of small round cells.

I now felt justified in making a positive diagnosis of sarcoma, probably starting from the bronchial glands, partially compressing the right primary bronchus, and in some way rendering the right lung useless. There were no signs of pressure on the vessels, a fact difficult to explain under the supposition that the disease grew from the region of the root of the lung. Lymphosarcoma was excluded by the absence of swelling of any accessible glands. Between this and November 27th, when the boy died at midnight, there was rapid increase in the tumor, and it was noticed that the right side bulged near the anterior axillary line. There was no pain, but the boy was restless at times, suddenly sitting up every now and then as if to breathe better and as suddenly lying down again on one side or the other, but always with the head low. The day of his death he was pretty quiet until 5 P.M., and much interested in hearing his nurse read. That evening his condition called for morphia, and I gave him two hypodermics.

The autopsy was made by Dr. Whitney. His report is as follows: —

Boston, Nov. 24, 1888.

Boy, twelve years old. Patient of Dr. F. C. Shattuck. Autopsy fifteen hours post-mortem. Body somewhat emaciated, still warm. Rigor mortis present; lividity of dependent parts.

Head not opened.

Pericardium and heart: normal but pushed to the left.

Lungs and pleura: the left lung did not fully retract, was of a dark reddish-purple color, and on section a considerable amount of frothy reddish serum could be squeezed from it.

The pleural cavity contained a small amount of reddish serous fluid; its walls were smooth and normal.

The right lung: filling the greater part of the left pleural cavity was a new growth of very soft consistency and opaque whitish color. Its point of firmest attachment was in the region of the fifth and sixth ribs, which were involved in it from their articulation outwards to the angle. The growth had infiltrated between them, and appeared as a small nodular swelling near the scapula. This growth was closely adherent to the pleura, and in the spaces left free there were small opaque whitish nodules, especially on the surface of the diaphragm. It had invaded the lung, replacing it in great part, but leaving a portion along and in front of the spine, which was of a dark purple color and non-crepitant. This, however, could be distended by forcible inflation. The bronchial glands at the root of the lung were small in size and of a dark color; in only one was a small whitish nodule detected. The line between the new growth and lung tissue was very sharp, and there was no evidence of any catarrhal or reactive inflammation at the border line or elsewhere.

The primary bronchus on this side was flattened but not involved in the disease.

The other organs of the body were markedly injected, but otherwise presented nothing abnormal.

The origin of the growth seems to have been from the region of the ribs and to have grown out rapidly into the pleural cavity, involving the lung and compressing the remaining portion. It had also grown through the intercostal muscles, but more slowly. It was remarkable by the entire absence of any metastasis, its effect being restricted to its immediate neighborhood.

The microscopic examination of the growth showed it to be composed of a loosely reticulated stroma of fibrous tissue, the alveoli of which were filled with large cells, the bodies of which were extremely degenerated. The general appearance was like epithelial cells; but from its place of origin and method of development it is probably one of the so-called endothelial cancer, which is regarded as a sarcoma.

W. F. Whitney, M.D.

I now think that I should have reached a positive and essentially correct diagnosis earlier, even without puncture; that I should certainly do so in another case.

The absence of fever, emaciation, expectoration, glandular enlargement, and of impaired mobility of the spine in a boy of twelve, who for ten months had suffered from thoracic symptoms and localized pain; and in whom the physical signs indicated the presence of an airless area occupying the central portion of one side of the thorax, while the character of the respiratory murmur and of the cough was suggestive of pressure on the right primary bronchus, and perhaps on the pneumogastric, — this group of symptoms point strongly, as it now seems to me, to a sarcomatous growth. Of course certainty is only to be won after puncture, perhaps several times repeated, and examination of any product which may result from the puncture. The signs of encapsulated pleural effusions, serous and purulent alike, are notoriously sometimes very difficult of interpretation.

REMARKS BY E. H. BRADFORD, M.D.

At the time the patient was seen by me he presented a peculiar appearance of the back which attracted serious attention.

There was a marked lateral curvature in the dorsal region, but without much rotation. The back was flexible and the attitude assumed by the patient appeared to be due rather to an instinctive desire of the patient to avoid a perfectly erect position, rather than to any osseous growth or muscular spasm. There was more than usual flexibility of the spine at the time. It was thought that the lateral curvature was due to the muscular weakness of the patient, a supposition which corresponded to the patient's usual appearance and condition. He seemed too weak for systematic gymnastic exercises, and local friction was all that was prescribed, chief reliance being placed on tonic medical treatment.

At the second examination the condition of the back had somewhat changed. The back was straighter, there being less curve, probably owing to the recumbent position the boy had taken during the interval. There was a slight swelling in the back and the inner side of the scapula which was soft, but not fluctuating, as if due to the presence of a cold abscess which had not yet suppurated freely. At this time the patient's condition pointed towards the presence of caries of the spine from the following symptoms: —

Severe spasmodic cough, especially if the patient was excited, a great disinclination to anything but a recumbent position, and occasional inclination to support the head with the chin.

Against caries of the spine was the entire absence of stiffness of the spine as well as the absence of projection.

It was decided, therefore, to defer any thought of mechanical treatment for the spine. The case is of interest to the orthopedic surgeon on account of the presence of certain symptoms pointing to caries of the spine and the absence of some others, and it is therefore worthy of being placed on record.

A CASE OF CHRONIC PEPTIC ULCER OF THE PYLORIC ORIFICE,

WITH HÆMORRHAGE FROM PANCREATICO-DUODENALIS ARTERY: LAPAROTOMY; DEATH; AUTOPSY.

BY W. W. GANNETT, M.D.,
Physician to Out-patients, Massachusetts General Hospital.

THE object in presenting this case of peptic ulcer is to call attention to a rather unusual situation of the lesion; to the copious hæmorrhage resulting from erosion of a comparatively large artery; and to excite discussion with reference to the advisability of the medical man asking the surgeon to operate with the view of stopping the hæmorrhage.

The case, that of a man of fifty-seven, a native of Vermont, by occupation an engineer of a stationary engine, was seen by Dr. H. F. Vickery, who diagnosticated a gastric ulcer, and advised his entering the Massachusetts General Hospital.

He did so on the 10th of September, 1888, in the service of Dr. R. H. Fitz. During the temporary absence of Dr. Fitz the patient came under the care of the reader.

The patient's father died of heart disease and two sisters of consumption. He himself had typhoid fever at seventeen, but no venereal disease; has always been temperate in his habits.

With the exception of the attack of typhoid fever his health had been excellent up to four and one-half years ago. At this time, without there having been previous gastric disturbance, he began to vomit blood, which continued for thirty days, at first profusely, then in smaller quantity and frequently. The stools during two weeks of this period were dark colored, and were said by the physician to contain blood. Epigastric pain of considerable intensity was present during this period, and there was a loss of twenty-five pounds in weight. From this attack there was perfect recovery.

Eleven months later (in February, 1885, three and one-half years ago) he had a similar seizure, lasting the same time, and making as good a recovery as before.

On the 25th of last June he began to have epigastric pain, which remained constant, gradually increasing in severity, and requiring for the fortnight before entering the hospital subcutaneous injections of morphia. The pain was less severe immediately after eating, attaining the maximum severity two or three hours after the ingestion of food. During this period there was occasional vomiting after eating, but the vomitus contained no blood.

Fourteen days before entering the hospital he suddenly became weak and fainted. Several hours later he had a large, dark, offensive stool containing blood. Seven days before entrance he had a similar stool, and again three days before entrance.

Except at these times the bowels had been regular, and the dejections normal in color.

The patient's weight had fallen off from one hundred and fifty-eight pounds in June to one hundred and thirty-nine pounds at time of entrance. There was considerable loss of strength, and though not confined to bed, he was unable to do any work after July 20th. He used no especial care about diet.

Examination of the patient, on entrance to the hospital September 10, showed him to be well developed, emaciated, anæmic. Tongue clean. Heart and lungs negative. Epigastric pain limited to a circular area size of the palm of the hand, having its centre at the tip of the xiphoid. Examination of the abdomen negative.

Urine pale, acid; sp. gr. 1012; no albumen. Patient was put upon milk and lime-water every hour.

On the 11th of September, the day after entrance, the report states that he slept well and was free from pain. On the afternoon of this day there was considerable epigastric pain, requiring one-eighth grain of morphia. On the next day, the 12th, it is stated that there was pain during the night and constantly during the day, though not severe. In the afternoon there was some nausea but no vomiting. He continued in fairly comfortable condition until the afternoon of the next day (the 15th), when he suddenly became faint and lost consciousness. The face was pale; skin cold and covered with perspiration; pulse rapid and weak. In a few minutes he recovered consciousness, and took some stimulant. Half an hour after the attack he vomited about three ounces of dark, liquid blood. Food by mouth was omitted and nutritive enemata were given.

On the next day, the 16th, he was quite comfortable, but very hungry. At 11 o'clock in the morning he had a large dejection, the first part consisting of normal, formed, fæcal matter, followed by nearly a pint of dark, viscid fluid showing a decided red color when diluted with water.

During the two following days he vomited blood four times and had three tarry stools: the blood being in such amount that it was reasonably fair to assume that it was escaping through a large opening in a comparatively large vessel. On the afternoon of the eighteenth it became evident that the patient would die unless some medical means of checking the hæmorrhage was adopted, for nothing could be hoped for from medication, and to the reader's mind transfusion seemed likely to be of little use, and after consultation with Dr. S. J. Mixter laparotomy was decided upon. The account of the operation will be given by Dr. Mixter.

Before describing the post-mortem appearances a word is perhaps desirable with reference to the degree of confidence with which the physician can say to the surgeon that the ulcer furnishing the bleeding point is of peptic, and not of cancerous, origin.

In the present case the recurrence of hæmatemesis and melæna, with intervals of apparently perfect health, covering a period of four and one-half years, while not sufficient to absolutely exclude cancer, nevertheless made the diagnosis of peptic ulcer far the more probable one.

At the post-mortem examination the organs, with the exception of the gastro-intestinal tract, showed nothing of interest beyond pallor. The stomach and intestines contained considerable blood. At the pylorus was a mass the size of a small hen's egg, adherent to deeper parts, and especially to the pancreas.

Just upon the pyloric orifice in the posterior wall was an oval ulcer of the mucous membrane, with overhanging edges of mucous membrane. The orifice of the ulcer was about the size of a silver ten-cent piece (by measurement 1 by 2 cm.); at the base it was about the size of a nickel five-cent piece (1½ by 3 cm.); the larger size of the base than the orifice being due to the overhanging edges of mucous membrane. The ulcer measured in depth 1 cm. It was filled with blood. On washing away the blood with a stream of water, there was found extending along the base for a distance of 1 cm. a thick-walled blood-vessel, which on dissection proved to be the pancreatico-duodenalis artery, the size being that of a large steel knitting-needle. It showed a double erosion through the exposed part of the wall. One opening was circular, nearly the size of the lumen of the vessel, and was plugged by a dry, firm, red-gray, adherent thrombus, probably of an age of two to four days. The other erosion was an oval one, and open so that the lumen of the vessel communicated with the cavity of the ulcer.

The floor of the ulcer was smooth; vertical section through the ulcer showed the base to be made up of a layer of dense, grayish tissue 5 mm. in thickness. Microscopic examination of this tissue showed it to consist of dense fibrous tissue.

Careful examination failed to show the presence of cicatrices in other portions of the mucous membrane of stomach or duodenum, hence it is fair to conclude that the earlier attacks of hæmatemesis and melæna were dependent upon an ulcerative process in this same site.

Anatomical diagnosis: chronic peptic ulcer of pylorus; erosion of pancreatico-duodenalis artery; hæmorrhage into stomach and intestines.

The result of the autopsy lends interest to a short reconsideration of the clinical symptoms with reference to the diagnosis of the position of the ulcer.

The pain had been epigastric, which, so far as it is of any value in differentiating between gastric or duodenal, favors the gastric seat.

In the two preceding attacks of four and a half and three and a half years ago, both hæmatemesis and melæna were present, this favoring the gastric seat.

During last July and August there was constant epigastric pain, but only occasionally vomiting, the vomitus containing no blood.

During this period there is no history of melæna, but considering that there was marked loss of strength and flesh without evidence of gastric catarrh, it seems probable that there was some bleeding from the ulcer, the blood passing downwards and not sufficient in quantity to make the stools tarry.

In the ten days preceding entrance to the hospital there were three separate attacks of melæna, without hæmatemesis, suggesting a duodenal rather than a gastric seat of the ulcer.

During the stay in the hospital hæmatemesis and melæna were associated, though the amount of blood by rectum exceeded that by the mouth.

As to the anatomical condition of the ulcer during the last four and a half years, it is probable that it healed after the first and second attacks, but has been an open ulcer since the latter part of June, the hæmorrhages resulting from erosion.

In the light of the autopsy excision would have been difficult owing to adhesions to the pancreas, and would have required the removal of the whole pylorus.

As to the question of further treatment by the physician the only possible procedure known to the writer is Schilling's method of tamponing by introducing by the œsophagus a rubber ballon connected with a rubber tube, and inflating with air. Owing to the seat of the ulcer in this case, this means would have been of no avail.

REMARKS BY S. J. MIXTER, M.D.

I saw this patient with Dr. Gannett the day before the operation. At that time his condition was one of great loss of strength and great anæmia from hæmorrhage. I was sent for in the evening, as he had had another attack of hæmorrhage during the afternoon, and we were decided that laparotomy should at least be thought of if it recurred. Dr. Porter saw the case with me, and it was decided that at least an exploratory incision should be made, because it was quite possible that the ulcer might be on the anterior part of the stomach or at the pyloric extremity. If on the anterior wall, then the chance of an operation was a very good one. The stomach could be easily drawn out, a small amount of its tissue excised, and then the peritoneal surfaces could be very readily united by a continuous suture. The stomach might be opened in case the site of the ulcer could not be otherwise determined. The operation need be but a very short one. It was quite possible, of course, that the ulcer was not in a position where it could be safely dealt with surgically.

Before the operation the condition of the patient was very fair. The pulse at the time of etherization was pretty good, and but very little ether was required.

On making an incision, beginning close to the xiphoid cartilage and going rapidly down to the peritoneal cavity, the stomach was drawn out. The whole anterior surface and greater curvature were found to be normal, but the pylorus seemed to be fixed. On passing the hand into the abdominal cavity it was found that the pylorus was very decidedly thickened, and firmly adherent to the parts below. It felt exactly like a small malignant tumor of the pylorus, — very much such a tumor as the one that Billroth removed in his first excision of the pylorus: that was malignant. I saw that operation and several others at the time, and this reminded me of one or two of the cases I saw. In this case, however, whether it were a malignant or non-malignant tumor, it was impossible to remove it on account of its attachments to the pancreas. Operations for the removal of the pylorus when it is attached to the pancreas are very difficult indeed. I have seen two such operations, and in both the operations were very long and there was a great deal of hæmorrhage, and the patients died from the shock of the operation. In this case nothing of that sort was to be thought of on account of the condition of the patient. The only other thing that one could think of was to open the stomach, and perhaps pack this opening in the pylorus, but it seemed that under the circumstances that operation would hardly be justifiable, so the stomach was returned and the wound sewed up. In case the pylorus had been opened it would have been impossible to pass a needle about the artery on account of its position, even if it would have been advisable to tie in the floor of the ulcer.

I think, in case the ulcer had been found on the anterior wall or within reach, where it could have been excised, that the operation might have stood a fair chance of being successful. The patient's condition was not worse than others in which we see recovery, and certainly the stomach heals very readily; the peritoneal surfaces unite, and there is very little tendency to tear open. Operations on the stomach are much more rapid than those on the intestine, so that the operation was, I think, justifiable, although unfortunately it was not a successful one.

Clinical Memorandum.

HYSTEROMYOMECTOMY.

BY HOWARD A. KELLEY, M.D., OF PHILADELPHIA.

[Dr. Howard A. Kelley read a paper before the College of Physicians of Philadelphia, on the 3rd inst., on a case of what he terms "supra-pubic hysteromyomectomy," in which the uterus was removed with the tumor, followed by very rapid recovery in a patient of uncertain age (she was an Irish woman, and was somewhere between sixty and eighty years old). He described the operation as follows:—]

"First, after due hygienic preparation of the patient, and careful regulation of the emunctories, she is brought to the operation; which is conducted throughout with all the antiseptic precautions at present adopted by wise surgeons the world over. She is anæsthetized; the incision is made, and the tumor freed and delivered. If necessary the broad ligaments are tied off down to the base of the tumor, which is then tightly constricted with the rubber ligature. The body of the uterus, with the tumor, is then cut away above this, leaving the upper surface of the stump concave. The cervical canal is then burnt out with the cautery, and the raw surface of the stump is now obliterated by rows of stout, buried sutures, one above the other as in Schroeder's method. The last row brings the peritoneal surfaces together, leaving a linear wound. The last row of ligatures approximating the edges of the wound are interrupted, and should be left long, at least temporarily. Grasping them all together, and pulling to the right, the left border of the stump is brought into view. The operator then takes a needle armed with strong catgut, and passes it deeply through the uterine tissue, from before backward, tying these very tight, and thus ligatures the left uterine artery. Reversing this movement, the right uterine artery is also tied. The rubber ligature is now cut, and the stump carefully watched for hemorrhage. Should any occur, a second ligature must be thrown around the uterine artery, on one or both sides, passed just above or below the other, still deeper into the uterine tissue. The abdominal wound is then closed, from above downwards, as far as the stump, the peritoneum carefully cleansed, and a drainage-tube left in, just above the stump, if thought necessary. The next step is the most important one, separating this method from Schroeder's. Above the deep uterine ligatures, but below the united lips of the stump, the visceral and parietal peritoneal surfaces are united, as in Hégar's operation, by a series of interrupted sutures, left long. The appearance of the abdomen then is that of a long wound closed down to its lower angle, where it is left open to its peritoneal surface. Plugging the opening into the peritoneum is a small wedge-shaped prominence, formed by the united lips of the stump. The dressing is simple: bichloride gauze, which has been preserved in alcohol, is wrung out in warm water and packed in around the stump. A large piece of gauze, with a slit in the lower angle, is laid over the whole. Through this slit the row of interrupted ligatures, uniting the stump and the abdominal wall, and the line on the face of the stump, are brought and grasped in the bite of an ordinary pair of long-nosed artery forceps. Over this cotton and the bandage are placed. By this means the raw surface of the stump is disposed of, dangerous hæmorrhage is avoided by the ligature of the uterine arteries, and the contamination of the peritoneum is avoided by keeping the only possible channel of escape for any oozing of blood just without the peritoneum. Should any hæmorrhage occur, in spite of the precautions used, it is under full control, at once, by grasping the long ligatures and forcibly lifting the stump, when, if necessary, it can even be transfixed or clamped. The stump is held *in situ* by the forceps, which efficiently replace transfixion pins. The after course should be one of recovery as undisturbed as after the simplest ovariotomy. The ligatures are all removed in from seven to nine days, and the granulating pit packed until it has cicatrized."

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

December 10, Dr. O. F. Wadsworth, President, in the chair.

Dr. A. T. Cabot read a paper entitled

TWENTY-FIVE CASES OF LAPAROTOMY FOR THE REMOVAL OF TUMORS.[1]

Dr. J. W. Elliot: I think the series of cases of unusual interest. Many of them I have seen, and know that they were very severe cases. The facts that the rectum was injured twice and the ureter divided once show that they must have been very serious cases; and the results, of course, are very, very fortunate.

One thing in the cases that particularly interested me was the large number of cases of suppurating tumors in which pus spilled into the abdominal cavity. Dr. Cabot's experience in that respect coincides with my own, that pus in the abdominal cavity spilled about among the intestines is not a very serious thing so far as results go. This happened in several of his cases. In seven or eight of my own cases pus has escaped among the intestines quite freely, and all these cases did well. The conclusion I have arrived at in that matter is that, if the patient be not infected by direct vaccination with septic material into the wound made by the instrument, the pus spreading over the peritoneal surface, over the intestines, does a most unexpectedly small amount of harm. Some of these cases I have mentioned would, it seems to me, have died of acute septicæmia if all our old ideas about the infection of the peritoneal cavity had been true. Washing out the peritoneal cavity is, of course, very important, and helps a great deal; but long before washing out was begun, pus had escaped into the abdominal cavity, and was got out only imperfectly, and even in those cases the results were unexpectedly good.

In some cases it is impossible to get the pus out, because the surfaces are so ragged. In a case of appendicitis, on which I operated a year ago, it was impossible to wash out the pus. Pus, I know, remained all about the intestines, and yet it did not seem to do the least harm. The drainage is perhaps more important than the washing out. Retained pus does an immense amount of damage, but pus that flows freely does not seem to affect the constitution so severely. Every one who has had these cases is delighted and surprised that it does not do as much harm as was expected. The moral is, I think, that we are encouraged to push on and operate on all sorts of collections of pus in tubes, in appendices, no matter whether the abdomen is opened or not.

Last year, in the discussion of appendicitis, there was a good deal of discussion about soiling the peritoneum with pus; and all these cases are, I think, interesting in that direction, as showing that even if the abdominal cavity be opened for an appendix, the soiling of the intestines with pus is not really such an important complication as almost every one would believe it to be.

Dr. W. F. Whitney: I have found the fluid in certain so-called suppurating cysts to be puriform, not purulent. The fluid was a sort of pathological milk due to the presence of large numbers of minute fat globules and fat crystals mixed in. In such a fluid microscopic examination is necessary to determine whether it is pus; consequently, in some of these cases, though not in all, the fluid may have been innocuous like the ordinary ovarian cyst fluid. This, of course, would give a place in which micro-organisms could find good food.

I see in Dr. Cabot's table there was recurrence in two cases, one in two months, the other in ten. I would like to ask if these were from the same side.

Dr. Cabot: In the one removed at the second operation, the growth seemed to have taken place from the same side from which the previous growth had been removed. In the other, in which the operation was desisted from on account of the general dissemination of cancer throughout the peritoneal cavity, the tumor was not separated enough to make sure which side it grew from. Both were papillomatous. Nothing distinctive of cancer was discovered in either of the original cysts, but it is very difficult in a large papillomatous cyst to go over the whole of it and say it has not undergone cancerous change in some part.

Dr. W. F. Whitney: The question of recurrence after ovariotomy is one of considerable importance, and suggests the necessity of careful examination of many cysts apparently simple to determine whether they can start from the pedicle. There is the possibility that that left behind may form the nidus from which a new growth may come.

Dr. Cabot: In one of these cases there was a small portion of the cyst wall which was so adherent near the great vessels and the ureter, on the posterior brim of the pelvis, that it could not be thoroughly removed. All that could be was taken away, but a small portion was left, and my idea was that recurrence probably took place from that point.

Dr. F. B. Harrington: I should like to ask Dr. Whitney if a puriform fluid is ever fetid?

Dr. Whitney: I have seen fluid that is not puriform that is fetid coming from a cyst lying close to the rectum. I do not remember, at this moment, a puriform fluid that was fetid.

Dr. Cabot: In several of my cases the purulent character of the fluid was settled by the microscope. In others no such examination was made.

Dr. Whitney: There is no doubt that there are suppurating cysts; but there is a possibility of a puriform fluid being called purulent.

Dr. W. W. Gannett: In connection with the two papillomatous cysts that returned, I would like to ask whether a papillomatous growth had extended from the outer wall of the tumor at the time of removal. I think that the cases in which the growth is bursting through the cyst wall are particularly apt to return, and occupy a position midway between ordinary cystomata and cancer.

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[1] See page 29 of the Journal.

Dr. Cabot: In one of the cases the papilloma was breaking through the cyst wall, and in the other the tumor was so broken up in the removal that it was not easy to settle this point.

In regard to the slight danger that comes from the escape of pus among the intestines. I think that I feel more apprehensive of danger from this source than Dr. Elliot. Formerly, before irrigation was practised, the greatest care was exercised to prevent such contamination; and it was surprising to see how completely escaping fluids could be shut off from the general peritoneal cavity by the judicious use of sponges. I doubt, therefore, whether these cases can fairly be cited as proving that pus is innocuous or nearly so in the peritoneal cavity, but think that they rather show that a little care prevents much pus from penetrating among the intestines.

When a tube is introduced down among the intestines into an abscess cavity behind them, it is to be remembered that at the end of an hour or two the track of the tube is shut off from the general peritoneal cavity, and no further penetration of pus among the bowels can take place, so that if the abdomen has been kept tolerably clear during the actual evacuation of the abscess, it is not afterwards open to infection.

Dr. W. W. Gannett: I can confirm Dr. Cabot's statement respecting the great rapidity with which peritoneal surfaces become adherent, by citing two cases of rupture of the stomach caused by a fall through an elevator well. Death resulted in the course of an hour or two, and yet the peritoneal surfaces of the lacerated portions of the stomach wall were quite firmly adherent.

Dr. W. W. Gannett and Dr. S. J. Mixter reported

A CASE OF CHRONIC ULCER OF THE PYLORUS, WITH FATAL HÆMORRHAGE FROM EROSION OF THE PANCREATICO-DUODENALIS ARTERY, WITH SPECIMEN.[2]

Dr. A. T. Cabot: I should like to ask whether, given an ulcer on the anterior wall of the stomach, you would expect, going down upon the stomach through the abdominal wall, to recognize the site of the ulcer by the condition of the serous coat of the stomach, or the appearances outside?

Dr. W. W. Gannett: Pathologically the ulcers are far more common on the lesser curvature, in the neighborhood of the lesser and not in the neighborhood of the greater curvature. If the ulcer has been sufficiently deep you find a puckering on the peritoneal surface. Unfortunately many of the ulcers come in such a position on the smaller curvature that it is impossible to see the peritoneum at that point; and the only way would be to open the stomach and discover it in that way. Where an ulcer has bled several times in the past you may find quite a marked puckering on the peritoneal surface. Where it has bled only once, the amount of puckering on the peritoneal surface is usually very slight. Only yesterday I made an autopsy in which there was a very distinct and double radiating cicatrix on the lesser curvature three or four inches from the pylorus, and no puckering whatever in that case on the peritoneal surface over it. The man died of something else, and there was no history of gastric hæmorrhage or hæmorrhage by the rectum.

Dr. Elliot: I should like to ask if you can feel the ulcer through the stomach.

Dr. W. W. Gannett: As a rule not: for they have very clean, sharply marked edges. It is often impossible to feel this edge, for in many cases they are very superficial. This is not a fair example of gastric ulcer occurring on the pylorus: it has extended much deeper than they usually do. Almost anywhere ulcer of the stomach extending to that depth would have perforated long ago. One of the characteristics of these ulcers is that they are sharply punched out and the infiltration of the edges is often very slight.

Dr. Burrell: I should like to ask if it would have been impossible to have determined the seat of this hæmorrhage unless the stomach had been opened?

Dr. W. W. Gannett: That brings up the point of differential diagnosis between the gastric and duodenal ulcer. There has been a great deal of discussion with reference to the possibility of diagnosticating the seat. If the ulcer is below the pyloric orifice the chances are that blood will pass down in the intestinal canal, and the evidence of it will be (*a*) a fainting, or, if not sufficient to cause fainting, (*b*) the passage of bloody stools — melæna. That alone would be strong evidence, but not absolute: for in hæmorrhage from gastric ulcer the blood may pass downwards and not cause hæmatemesis. In this case a part of the attacks were those associated with melæna, a part with hæmatemesis, a number with both. This ulcer was seated in such a position that an opportunity was afforded for blood to pass either way, or both ways: and in a case like this I don't think it would have been possible to say with certainty where the ulcer was seated. The pain was epigastric and not in the right hypochondrium, not intense as in typical cases of duodenal ulcer. The time of the occurrence of pain some authorities lay considerable stress upon. I have questioned quite a number about the time when pain occurred. Some said it was immediately after eating: some said three or four hours after eating. In this case there was acute epigastric pain two or three hours after eating. It may have been at the time when the contents of the stomach were most acid, and were passing through the pyloric orifice. The intensity of the pain may be due to the fact that it is at the period between three and five hours after eating that the greatest amount of hydrochloric acid is present and the time when the gastric juice would be most acid. Three points in favor of duodenal ulcer are: (*a*) pain in the right hypochondrium; (*b*) absence of gastric symptoms; (*c*) without hæmatemesis pain coming on some time after eating and the fact that there is no blood vomited, but whatever blood escapes passes through the bowels, and one has the condition known as melæna.

Dr. Cabot: I should like to ask whether it seemed at the autopsy or during the operation as if it would have been possible, opening the stomach near the pyloric orifice with an incision extending a little way into the duodenum, to bring this ulcer into view during life?

Dr. S. J. Mixter: I think not. The whole thing was so firmly held down in place that I don't think it would have been possible, and for that reason I refrained from doing anything whatever. If the pylorus could have been brought out so as to be seen as it can be in a normal case, that is one thing; here, however, it was bound down very firmly. There was another point: in case this ulcer had not been found by inspection, or by the sense of touch, it was my idea that it was advisable perhaps to make an incision into the anterior wall of the stomach in order to examine the mucous membrane, and I think that would have been perfectly justifiable and certainly would not have taken a great while.

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[2] See page 38 of the Journal.

Dr. H. I. Bowditch: Owing to my health I did not think of coming to any meeting this winter. But I was desirous of coming this evening to listen to the account of the ulcer of the stomach, because ever since the death of Dr. Ellis I have watched to see whether modern surgery, which is so splendid in its operations, is not going to *prevent* entirely the result which occurred in him and in the present case. The question in this case arises in my mind whether, if an earlier diagnosis had been made, so that instead of waiting three years and operating at last when the patient was in a miserable condition from previous hæmorrhage, — the success might not have been greater. Dr. Mixter made a suggestion which also occurred to me while coming here,— what objection would there be in any case to laying fairly open the stomach and seeing where the ulcer is, and its characteristics. To do this the incision in the walls of the stomach might be carried to the very point above the ulcer. We know very well indeed from the operation by Dr. Richardson, through the stomach and up into the œsophagus, that the stomach will bear a great deal of handling without material injury. We know that the whole peritoneum in every part will bear much more than we used to think ten years ago. The idea of doing what is possible by surgery now would have been considered ridiculous, or absolutely wrong, a few years since. I would like to ask Dr. Gannett whether he would not think that the firm, thick, non-malignant mass found under the ulcer was not probably caused by the length of time the process had lasted and the repeated inflammatory attacks he had been suffering from, and if the operation had been done earlier there would not have been a better chance. There is still a further question. Supposing an ulcer is bound down on the pancreas, is that fact of such vital importance? Not knowing myself, I ask the question. Is the pancreas so important in itself to the human frame that a portion of it could not be perfectly well removed, if necessary, in the case of a large ulcer of this kind? I know very well the close proximity to very large arteries and the danger from hæmorrhage, but it would seem as if surgery had the power of coping with that. Moreover, in regard to operating in cases of *cancer* of the stomach I should like to know what the prospects are and the actual results of operation, as modern surgery tells us.

Dr. W. W. Gannett: It seems hardly desirable to operate in cases of this sort unless the case becomes desperate; for the ulcer may heal and never break down. My feeling would be to wait until the case had become pretty nearly desperate before attempting to do an incision thinking that the hæmorrhage might cease.

As to extirpation which would involve the removal of a portion of the pancreas, I should suppose it would be difficult after removing a portion of it to stop the hæmorrhage, for the interglandular tissue is so vascular I should suppose it would bleed a great deal.

Dr. H. I. Bowditch: I should like to ask Dr. Gannett how often he finds chronic ulcer of the stomach healed.

Dr. W. W. Gannett: Perhaps in 3% of the cases the scar of ulcer has been found. It is a recognized fact that in a great many cases scars are found where in life no symptoms were known. I remember two or three cases last year.

Dr. Cabot: In regard to the surgical treatment of these cases, the reason why I asked as to whether the ulcer could have been brought into view was that, looking at that artery, it seemed clear that if it could have been brought into view it might have been tied. It would be a serious thing on the posterior wall of the stomach to excise; but after bringing such an ulcer into view one might put a thread under the artery with a curved needle.

Dr. Hamilton Osgood: I would like to mention a case I saw in Heidelberg in which Czerny excised about one fourth of the pyloric end of the stomach for cancer. The operation was lengthy, and was performed under a plentiful carbolic spray. I do not know the final result in this case, but four days after the operation Czerny asked me to see the patient. The man was in a cheerful frame of mind, and was drinking wine, which seemed to me extraordinary in view of the short period of time which had elapsed since the operation. It was of course a case in which almost of necessity death was imminent, and so far as it had progressed the result struck me as being remarkably good. I mention it as another proof of the surprising impunity with which laparotomy in every variety is now performed. If I understood Dr. Mixter, the cases of excision of the pylorus seen by him all died.

Dr. Mixter: I saw two successful ones, one by Billroth and one by Wölfler, and three or four others unsuccessful. The one by Billroth lived about a year. That brings up the point Dr. Bowditch spoke of in relation to the possibility of operations for cancer of the stomach, and apparently it is very seldom that the diagnosis of cancer of the stomach can be made early enough, and perhaps there is recurrence. But the operation of resection of the pylorus for disease of limited area is not a particularly difficult one.

Dr. Burrell: I would like to say in connection with what has been remarked by Dr. Gannett with reference to the question of these cases being left and the surgeon being called in as a "last chance" that I can't help feeling, so long as physicians regard it in this light, that the surgeons will not meet with a great deal of success in dealing with, for instance, cases of hæmorrhage as in this case. That, I know, is particularly true in cases of cancer of the stomach.

In the last two years I have been asked three times to see cases of cancer of the pylorus in reference to operating, which had gone far past the point of possibility; in other words, you had a large, solid, fixed tumor with distinct glands which was beyond the possibility of removal with recovery; and the operation for removal of the pylorus is only applicable in those cases where the pylorus is movable and you have a reasonable freedom from infection of the glands. It is a word, I think, that ought to be said with regard to it, because surgeons are often called in as a "last resort."

Dr. W. W. Gannett: I regret to have given a wrong idea. In what I said I had in mind something which Dr. Bowditch said. Dr. Bowditch asked whether it would not have been possible for the man to have been operated on after the first hæmorrhage. I meant this: clinically one sees a great many cases of gastric ulcer with hæmorrhage which result favorably with cutting off of food by the stomach and feeding by enemata. If hæmorrhages recur, then of course the situation is altered, and operation is justifiable before the case becomes desperate.

Dr. H. I. Bowditch: I intended my remarks to apply to simple ulcers.

Dr. F. C. Shattuck reported a case of

INTRATHORACIC SARCOMA, PROBABLY STARTING FROM THE PERIOSTEUM OF THE RIBS, IN A BOY OF TWELVE.[3]

Dr. Whitney: This mass represents new growth. This whole mass, felt in the right pleural cavity, was intimately adherent at about the junction of the fifth and sixth ribs — impossible to remove it from the pleural surface, consequently portions of the tumor with the ribs had to be dug out in order to take the mass away. This corresponded with the small tumor on the back that Dr. Shattuck has mentioned. The chief point of interest is this dark substance — that is what remains of the lung: it was pressed up directly towards the median line against the vertebræ. The free edge was just in front, so that on removing the sternum and opening the pleura this free edge could be seen with this tumor lying next to it.

Here is the bronchus. The cut is through the primary bronchus, and that is compressed, flattened. Before anything was done it was inflated and this portion of the lung capable of distention. The bronchus is extremely flattened and this lung capable of distention on forced inflation. The vessels are not apparently compressed to any great extent. Careful dissection failed to reveal the point of origin. There were two or three minute glands at the right of that bronchus, no deposit beyond a minute nodule, and no evidences of any secondary deposits in any part of the body, showing that in all probability it had not started from the glands, for it would be impossible to conceive of glands of this size lying in close proximity to the tumor and not find indications of glands from which this started. It is possible that it started from the lung itself, but primary tumors of the lung are among rarities and more apt to be of chondrous nature, and starting from the cartilage of the bronchus. In all probability this is a growth that has started from some of the tissues in the neighborhood either of the ribs, or periosteum, or pleura. There are great adhesions to the fifth or sixth ribs, and from that point out seemed to be its chief point of growth and the lung was pressed upon.

The structure of the tumor is peculiar in that it is alveolar sarcoma. This is rather a rarity and not always easy to differentiate from cancer. In this case it was a little difficult; you had to do with intercellular substance between the cells, which would prove that it was sarcoma rather than cancer. On section there were several places where this stroma could be seen starting out, but quickly becoming disintegrated apparently and broken down in such a quick-growing tumor as this.

These alveolar sarcoma are mentioned as occurring with bone; and it is possible we have to do with one originating in a rib or periosteum and bulging out into the pleural cavity.

Dr. H. I. Bowditch: I saw a case about twenty-five years ago which went through the same process; it was tapped three times..

In that case it filled the whole side of the chest. The chest looked as if the youth had his chest full of fluid. I was sure fluid was there, and tapped two or three times, and in no case did I get anything of any importance. The intercostal spaces were exactly filled in, as in common fluid. There was perfect flatness everywhere; and at the autopsy a tumor was brought out filling up the whole cavity, which we thought at the time — I don't know whether Dr. Jackson saw it — was a sarcoma arising from the mediastinum. The tumor when raised from the thorax made, as it were, a cast of the interior, the marks of the ribs and their interspaces being clearly seen upon it.

Dr. Cabot: About a week ago I saw in consultation a case in which there was what I took to be a very large sarcoma of the ribs near the angle in a woman of about thirty. It had grown quite rapidly and projected a good deal into the chest underneath. The woman is still living. In that case the marked symptom was tremendous pain, not felt over the tumor so much as along the distribution of the nerves. It was not removed. I did not understand how Dr. Shattuck would in a similar case exclude a cold abscess.

Dr. F. C. Shattuck: That I should exclude by puncture chiefly; but the entire absence of constitutional disturbance was suggestive certainly, and that would be perhaps the chief point of distinction. That would be less distinctive as between a cold abscess and some other collections of pus; and to determine that point in this case a puncture was made; and I think perhaps I ought to have made another puncture, having failed in the first. Still the whole aspect seemed clear that it was a solid tumor that I had punctured. The external tumor in this case was extremely slight, a slight prominence not bigger than a hen's egg.

THE NEW YORK ACADEMY OF MEDICINE.

Stated meeting, December 20, 1888. **Dr. Thomas E. Satterthwaite** read a paper on

A NEW STUDY OF LOBAR PNEUMONIA; WITH DEDUCTIONS FROM AN ANALYSIS OF FIFTY-SIX FATAL CASES.

The principal types of pneumonia were the following: (1) acute lobar pneumonia; (2) secondary lobar pneumonia; (3) embolic lobular pneumonia;

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[3] See page 35 of the Journal.

(4) bronchial lobular pneumonia; and (5) the interstitial pneumonia of heart disease. Acute lobar pneumonia was first clearly differentiated by Grisolle, a student of Louis and Chomel in 1841. and no work had surpassed his in the completeness of its clinical and anatomical details. This affection occupied a unique position in the catalogue of diseases. for both anatomically and clinically it was unlike any known disease. It had also been called croupous pneumonia from the fact that fibrin, which constituted the chief characteristic of a croupous or membranous exudation, was a very regular occurrence in the exudation which filled the vesicles. The inutility of the term croupous was clearly shown, however, by the fact that croupous and catarrhal processes might be combined in any example of pneumonia, whether lobar or lobular, and might also be associated with certain chronic processes, such as phthisis or syphilis.

Acute lobar pneumonia was the most common variety of pneumonia, and Dr. Satterthwaite's statistics sustained those of Fagge. which showed that it was chiefly a disease of the male sex. When the disease originated in one lung the right was usually selected, and where both lungs were attacked the second lung was rarely involved until the affection in the first had gained some headway. Having described the stages of engorgement, red hepatization and gray hepatization, Dr. Satterthwaite went on to speak of the symptoms and the physical signs. Fine crepitation, he said, while one of the most important early signs, was not a positively essential one. Occasionally this sign lasted the entire length of the disease. In referring to individual symptoms, he said that in his cases pain in the side usually preceded the chill. In old people the cough might be absent, and in two of his cases there was no expectoration at all. In fifteen the sputum was either bloody, blackish, rusty, or greenish; often groups of instances had been observed in which it was uniformly colorless throughout the disease. Albuminuria was quite common, though not as frequent as in the interstitial pneumonia of heart disease. Dr. Satterthwaite was convinced that if the urine received the attention which it deserved a nephritic implication would be found more frequently than now appeared from the statements of writers on this topic. His statistics showed a less amount of nephritic trouble than actually existed, since his cases were all in hospital patients, who were often brought into the wards in a moribund condition, and it was manifestly impossible to secure the complete evidence on this point that was needed for statistical purposes. Yet they showed a percentage of 41, and in 5% of this total there was chronic kidney disease of long standing. In 8% only did it positively appear that there was no renal implication, as shown by clinical and post-mortem evidence; and there was positive evidence of acute kidney disease in 36% of the cases. So far as the kidney was concerned, however, we had more to fear from the acute exacerbation of an old nephritis when the damaged organ was suddenly called upon to do vicarious work for which it had little capacity.

As to the diagnostic value of fine crepitation, he said that he thought it was now generally admitted in the best quarters that this sign was heard not only in the several types of pneumonia, but also in pulmonary phthisis and syphilis, or even in bronchitis. as Andral claimed. The pain in pneumonia, which was most frequently referred to the nipple and next to this to the base of the lung, was due to pleurisy. The highest respiration met with by Dr. Satterthwaite in his cases was 64, and there was uniformly a high ratio between respiration and pulse. Thus, while the pulse was never more than double the normal, the respiration was often three times the normal, and in an average of seven cases was about twice the normal. The highest temperature in his cases was found to be 108°, and at death the lowest 100.2°. In ten the highest average temperature was 104.3°. The crisis usually occurred between the third and eighth days, or, more accurately, between the fifth and seventh days. His statistics showed that the fatal issue, if it came, might occur on any day of the disease (always within two weeks), but that the danger was greatest about the end of the first week, or in reality on the sixth day. This fatal day corresponded with the date at which the crisis occurred, according to most clinicians.

The immediate cause of death was usually heart failure, the heart muscle becoming exhausted from the prolonged and exhaustive work it had to perform, or, indirectly, through the influence of poisoned blood upon the nervous centres. In rare cases (two of which had come under his observation), the respiratory nerves would yield, and respiration would stop, though the heart proceeded.

Some late writers, like Ziemssen, thought exposure to cold a very infrequent cause of pneumonia; but if we noted the time of the year at which the affection was prevalent, we at once realized that it was a disease of the late autumn, winter, and spring months. In thirty-six of Dr. Satterthwaite's cases twenty-seven fell between October 1 and June 1, and only seven in the remaining four months.

There were at least two varieties of acute lobar pneumonia; the first being a sort of epidemic form which might be called pythogenic, sometimes associated with diarrhœa or dysentery, where persons had been crowded together and compelled to inhale foul air. The second was due directly to cold, and there were probably other causes also. In speaking of the alleged bacterial origin of the disease, he said that it appeared that none of the observers who claimed to have demonstrated this had complied with Koch's law as to the determination of whether or not a given microbe was the cause of a disease, viz., first, its successful culture apart from the body; second, its successful inoculation on the body, with the subsequent production of a pathological condition the counterpart of the disease in a given organ. Thus, he said, it would be necessary to show that a pure culture inoculated upon the blood remote from the lungs produced lobar pneumonia. Experiments, however, had almost always failed in this respect, and it had been found necessary to inoculate the lung tissue, where any foreign substance would, if injected, produce pneumonia. But in such experiments it was lobular, not lobar pneumonia that commonly resulted.

Pleurisy was a complication that was to be expected. The pleuræ were always involved when inflammation reached the surface of the lungs, so that pleurisy was never absent, except in such rare cases as when the disease was central. A comparatively frequent complication was pericarditis, which developed either by an extension of the diseased process or by a simultaneous implication.

As to the mortality of pneumonia, he said it was profitless to give statistics in a general disease like pneumonia unless we knew (1) the variety, (2) the decade of the patient's life, and (3) the general character of the attack. Lobar pneumonia had quite a different mortality rate from either variety of embolic pneumonia, the cardiac or the pyæmic. The rate was also probably different in childhood, in adult life, and in old age. Having given the statistics of various writers as regards mortality, he said that after a brief study of these or any other similar statistics it would be seen that their variation was to some extent a natural one; and though it was ostensibly true that the expectant plan was the most successful on the whole, still the results were by no means uniform in the hands of the same person. Admitting, however, that these statistics were of value, we had evidence that the so-called expectant plan of treatment was the best. He believed that we had passed the period when it could be successfully shown that we could arrest the disease. We did, indeed, sometimes meet with cases of pulmonary congestion in association with cardiac or renal disease or malaria, that presented some of the signs of lobar pneumonia; but the prompt relief by stimulants or antiperiodics taught us the nature of the congestion.

The cause of death also indicated the obvious direction in which main efforts were to be made. It was not so much towards reducing the temperature as towards sustaining the heart; next to obviating renal complications. Hence our clinical, supplemented by our pathological, data *did* point out the line of treatment. Dr. Satterthwaite doubted whether the high temperature in pneumonia was in itself a demon that we must attack and overthrow; and said he had been led to believe, by post-mortem studies, that the use of antipyretics not only weakened the heart's action, but had some unfavorable action on the kidneys. It seemed to him that since the introduction of the newer antipyretics the renal implications had been greater than before.

As regards treatment, he had often seen benefit from copious and repeated cuppings in sthenic cases. In less vigorous persons he had seen relief follow upon cold water applications. In cases of defective hepatic action mercurials in large doses might give relief. In patients with weak hearts he had seen the case carried safely through with alcoholic stimulants; while in renal complications he had seen marked relief to the pulmonary symptoms from remedies chiefly addressed to the kidneys. Reduction of temperature was indeed a relief to the patient; but it seemed to him that it was safer to accomplish this through the simpler remedies, which caused diaphoresis, rather than by those which acted more promptly, but whose secondary effects were, to say the least, of doubtful value.

SECONDARY LOBAR PNEUMONIA.

Dr. Satterthwaite thought there was a positive advantage in retaining this subdivision of lobar pneumonia, which was recognized by the old French school, and had been approved by prominent clinicians up to the present day. In the nineteen post-mortem cases from which he had drawn his conclusions there was seen to be a line of phenomena which plainly indicated certain differences between the primary, or acute, and the secondary forms. In secondary pneumonia the ordinary clinical signs were either masked by the concurrent disease, or were so ill defined that the pulmonary attack might pass unnoticed; and so it happened that sometimes even in our best hospitals this affection might first be detected at the autopsy. The attention of the physician might not be directed to the pulmonary complication because the patient himself had not had his own attention directed to it. Such things happened with old people; or it might be that a physical examination of the chest was impracticable. He had observed the following antecedent conditions in secondary pneumonia, nephritis, alcoholism, phthisis, burns, rheumatism, fracture of the ribs, hypertrophy of the heart, pleurisy with effusion, and pericardial effusion. He had found it in contemporaneous connection with the following affections: abdominal dropsy, pericardial effusion, gangrene of the extremities, bronchitis, syphilis, endocarditis, hydrothorax, and aneurism of the aorta. Neither phthisical or syphilitic processes had any apparent connection with the pneumonia, and in fact, all cases in which there was any suspicion of phthisis or syphilis as possible causes of the lobar pneumonia were thrown out of the computation. Secondary pneumonia seemed to be most common in winter, and no one of his nineteen cases occurred between May 1 and October 1.

The disease was usually insidious, and the chill was frequently absent, probably not occurring in one fourth of the cases. While the pain in the side might be absent and the difficulty in breathing might not be marked, the crepitant râle could be heard, as a rule. The temperature would rise rapidly, as in acute pneumonia, but it would average somewhat lower; though the temperature might not indicate the severity of the attack. The pulse also averaged lower than in acute pneumonia. Bronchial breathing and dulness might be the most decided symptoms, and they are the most common in his experience, being noted in about 70% of the cases. The expectoration was apt to be scanty, and often afforded little help in the diagnosis. He had noted it in only about one third of his cases, when it was either bloody, rusty, or black. Renal symptoms were apt to be more prominent than in acute pneumonia. As indicating the difference in the type of this variety of pneumonia, there was found a decided tendency to suppuration.

The duration of secondary pneumonia was about the same as acute pneumonia, but the crisis was apt to come earlier, because the patient was already exhausted by the antecedent trouble. Hence he found that out of fourteen cases eight died within forty-eight hours, and that the period of the greatest danger was between the second and third days. The immediate causes of death were attributable mainly to the same three conditions that are prominent in acute lobar pneumonia, viz., (1) heart failure (in about one half the cases); (2) uræmia; and, last and least, respiratory failure from the toxic influence of the unhealthy blood on the nerve centres. These facts, he thought, sufficiently indicated the proper line of treatment.

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MONTAIGNE ON THE PHYSICIANS OF HIS TIMES.

Michael, Seigneur de Montaigne, was born in 1533 and died in 1592. Just three hundred years ago appeared the third book of those extraordinary essays, so replete with philosophy, learning, ethics, and some social economy, which have delighted past and will continue to delight future generations.

The medical history of this philosopher, and his attitude toward physicians and the practice of medicine, are of considerable interest. During the last few years of his life he was afflicted with "the stone," *i.e.* (as the context shows), renal lithiasis, probably of a gouty nature, the attacks of which came on frequently and were very severe. He bore these attacks very patiently, "contenting myself," he says, "with grunting without roaring out." This infirmity, he affirms, he inherited from his father, who died "tormented with a great stone in the bladder." He alludes to the mysteries connected with this matter of heredity in terms which are almost as applicable to the present state of biology. "I was born about five and twenty years before his (the father's) disease seized him, and in the time of his most flourishing and healthful state of body. Where could his propension to this malady have been lurking all that while? and he, being so far from the infirmity, how could that small part of his substance carry away so great an impression of its share? And how so concealed that till five and forty years after I did not begin to be sensible of it?" Montaigne adds that we need not trouble ourselves to seek for miracles; "there are so incomprehensible wonders amongst the things that we ordinarily see, as surpass all difficulties of miracles."

Besides his gravel, Montaigne thinks that his antipathy to physicians was inherited. His father lived seventy-four years, his grandfather sixty-nine, his great-grandfather almost fourscore years "without ever tasting any sort of physic." "My ancestors," he continues, "had an aversion to physic by some secret and natural instinct; the very sight of a potion was loathsome to my father." The ancestors of Montaigne had doubtless been favored with excellent health, but in this respect they did not differ from great numbers, whose slight physical irregularities never claim a physician's care, and whose death may be sudden and painless. Every physician is cognizant of such individuals who live methodically and well, take no medicine, or almost none, and are very unprofitable patrons. But Montaigne and his paternal ancestors not only took no physic, but they had, as he says, a positive aversion to all drugs. He gives the reasons that influenced them and him. Physic (meaning medicine of any kind) has a nauseous and disagreeable taste. We must remember that this age (the sixteenth century) was emphatically the age of nasty doses, of much purging, of bleeding, and of clysters. We may take Molière's satirical accounts (written half a century later) and the carefully kept "Journal de la Santé de Louis XIV." by Vallot, Fagon, and Aquin, physicians-in-ordinary to his majesty, as fairly representing this epoch of polypharmacy, of which Paracelsus was in some sort the leader or initiator. When we read the Journal aforesaid, we know not which to wonder at most, — the patience and meekness of the king amid such phenomenal drugging, or the strength of constitution which enabled him so long to withstand so many heroic medicaments. There is no doubt that the physicians of that period had a sufficiently copious materia medica, but they still had only the vaguest empirical notions to guide them in the treatment of the sick.

Montaigne not only revolted against the nauseous medicines of the times, but the indiscriminate purging seemed to him contrary to nature, and deplorable. "Of three sorts of motions which are natural to us," he says, "purging is the worst, and no man, unless he be a fool, ought to take anything to that purpose but in the extremest necessity. The violent gripings and contest between the drug and the disease is ever to our loss, since the combat is fought within ourselves, and the drug is an assistant not to be trusted, being by its own nature an enemy to our health, and but by trouble has no access into our condition. Let it alone a little; the Providence that takes care of fleas and moles does also take care of men, if they will have the same patience fleas and moles have to leave their systems to the workings of nature." He reasons very correctly that too frequent evacuations, instituted with the intent of clearing the humors, are an injury rather than a benefit, and that where purging is clearly indicated it is folly to resort to drastics when "ordinary simples" will do as well.

Another observation, to the disadvantage of much physicking, which Montaigne had made, was that those who once begin to drug themselves are wont to feel more and more the need of drugging. There is more than a grain of truth in this. "Experience," he says, "makes me fear drugging, for amongst all my acquaintance I see no race of people so soon sick and so long before they are well as those who take much physic."

Another and a principal reason of Montaigne's opposition to physicians was the inchoate state of medical science in his day. It was, indeed, the renaissance of medicine, and such men as Laurent Joubert, Duret, Jean de Vigo, Ambroise Paré, Lusitanus, Fernel, Prosper Albin, Botal, Sanctorius, Cæsar Magatus, deserve all praise for the discoveries they made in medicine and in surgery; but this was also the age of credulity, of superstition, of unfounded assumption, of crudities, and of humbug. Montaigne himself gives us an insight into one corner of the materia medica of the times: "The very choice of most of their drugs is in some sort mysterious and divine. The left foot of a tortoise, the urine of a lizard, the dung of an elephant, the liver of a mole, blood drawn from under the wing of a white pigeon, and, for us who have the stone, the excrement of rats beaten to powder, and such like trash and fooleries, which rather carry a face of magical enchantment than any solid science." He alludes to the perpetual disagreements among the masters of medicine (there being no unison as to the causes of disease) as evidence of the crude and inchoate nature of medical science and art, and affirms (what certainly was true of that age) that "the most important science in practice among us, that which is entrusted with our health and manner of living, is by ill luck the most uncertain, the most perplexed and agitated with the greatest mutations." "There is no great danger," he continues, "in mistaking the height of the sun or in some other astronomical calculation; but here, where our whole being is concerned, it is not wisdom to abandon ourselves to the mercy of the agitation of so many contrary winds." This is a severe indictment, from which for these three hundred years medicine has been laboring to clear itself. In many respects, certainly, we seem to be better off than the contemporaries of Montaigne. We do not think it probable that the mistake could well be committed now-a-days to which Montaigne alludes in the following paragraph:—

"A gentleman was at Paris lately cut for the stone by order of the physicians, in whose bladder, being so cut, there was found no more stone than in the palm of his hand; and in the same place a bishop who was my particular good friend, having been earnestly pressed by the major part of the physicians in town to suffer himself to be cut, refused when he was dead and opened, it appeared that he had no stone but in the reins (kidneys)." He concludes, however, that physicians are in some sense excusable for mistakes respecting diseases that are not palpable, though a stone in the bladder, he rightly thinks, is "in some sort palpable." "After all," he says, "chirurgery is much more certain by reason that it sees and feels what it does, and so goes less upon conjecture; whereas the physicians have no speculum matricis by which to discover our brains, lungs, and liver."

Had Montaigne lived at the present day, he might have somewhat modified the latter sentence in view of modern aids to diagnosis.

MEDICAL NOTES.

—Dr. J. F. Hartigan, of Washington, who was sent by Dr. Hamilton, surgeon-general of the marine service, to investigate the cause of yellow fever in Florida, reports that he found a disregard of sanitary rules that seems almost incredible. The village of Enterprise, for instance, is surrounded with marshes and pools with little or no outlet. Sewerage was conducted by open trenches into open cesspools. Side streets were overgrown with weeds and decaying vegetation, and there was no system of disinfection or for the removal of garbage. The doctor had nearly 1000 barrels of filth removed from the jail alone, and filled the cesspools with dry sand. He sharply arraigns the boards for their incompetency, and concludes with this suggestion: "It is time that the State should wake up to its interests and pass a law creating a State Board, which should be composed exclusively of medical men and sanitarians, with authority to act and appoint county sub-boards, to consist also of competent medical men, and let the powers of the corporate authorities be subservient. Thus will be saved a repetition of the absurd measures, hardships, and conflict which prevailed during the late unfortunate epidemic."

— It is disagreeable to have to retract any of the claims of science, especially when so picturesque as that which is lately copied from the daily press, regarding a consultation by telegraph between Vancouver Island and London. But the *British Medical Journal* says: "In regard to an alleged novel medical consultation supposed to have held between physicians at Vancouver's Island and Sir Andrew Clark, we have the best authority for stating that no such consultation ever took place. The only ground for the allegation consists in this, that Sir Donald Smith having asked Sir Andrew Clark by what questions he might best learn from the doctors in Vancouver's Island the state of the patient, Sir Andrew Clark furnished him with a copy of questions whereby his purpose might be fulfilled."

— The annual meeting of the Springfield, Mass., hospital corporation was held recently. The report of the treasurer, Charles Marsh, showed that the receipts from donations during the past year were $921; legacy from Mrs. Chester W. Chapin, $25,000; legacy from William Merrick, part payment, $63,575; rents and incomes, $1966. The payments for hospital and grounds amounted to $70,115, $34,000 having been paid for land alone and $35,903 for buildings. The balance of cash on hand is $8123. The total amount of popular subscriptions received to date, in addition to the Chapin and Merrick legacies, is $28,431. Work on the new hospital is going on satisfactorily and the building will probably be occupied next May.

— The secretary of the New York State board of health is reported as saying that the board is about to test the power conferred upon it by law, to compel physicians and clergymen to report all births and marriages of which they have professional cognizance to the registrar of vital statistics in the respective localities having registrars. The law has been constantly and flagrantly violated in the matter of such reports. The death-rate is full each month because undertakers comply with the law, but births and marriages are returned only in very few instances. The test the Board proposes making will involve the prosecution of a few of the clergymen and doctors.

— The fourth annual reunion of the Association of Ex-Resident Physicians of the Pennsylvania Hospital took place in the library of the institution December 27. These officers were elected: president, Dr. Henry H. Smith; vice-president Dr. William Hunt; executive committee. Drs. C. S. Bradlute, T. H. Bradford, A. V. Meigs, W. J. Taylor, and W. D. Green. After dinner, papers were read by Drs. Thomas Wistar and Thomas B. Reed, and discussions were held by Drs. Meigs, Ashhurst, Longstreth, Packard, and Green.

— "Boycotting Sir Morell Mackenzie," remarks London *Life* of December 13, "is fast becoming a fixed habit with the medical profession. Not only was his lecture at Edinburgh ignored by all the local doctors, but no word of mention was given to it in the *Lancet* of Saturday last, even in the column devoted to intelligence from Scotland Clearly the great specialist did not resign his membership of the Royal College of Physicians a single day too soon."

— Mrs. Alexander Cameron a short time ago gave $7500 to build a wing on the Toronto Hospital, and this week has given a second donation of $1600 to completely furnish the apartments which are to be called the Cameron cancer ward.

NEW YORK.

— Several students have been suspended from the medical department of the University of the City of New York for creating disturbances just before the Christmas vacation, because Dr. F. D. Weisse, who for several years has held a professorship in the department of Practical and Surgical Anatomy, was not made professor of Anatomy in the place of Dr. Lewis A. Stimson. Dr. Stimson was recently appointed to the chair of Surgery, made vacant by the resignation of Dr. J. Williston Wright, and the faculty announced that the professorship of Anatomy would not be filled during the present session. Dr. George Woolsey, a graduate of the College of Physicians and Surgeons, who for the past three years has been studying in Europe, is at present giving the lectures on anatomy under Dr. Stimson's direction; and Dr. A. S. Haynes is lecturing on practical and surgical anatomy in the place of Dr. Weisse, who has resigned and been relieved from duty.

— It is as yet impossible to form an estimate of the amount of the annual Saturday and Sunday hospital collection, made December 29th and 30th; but in several instances the contributions of the churches are known to have been larger than those of last season. That of St. Bartholomew's is nearly $4500, and it thus nearly approaches the church in London which averages about $5000 annually,— the largest regular church contribution to hospital purposes in the world.

PHILADELPHIA.

— At the annual meeting of the College of Physicians, held January 3, Dr. D. Hayes Agnew was elected president, and Dr. James H. Hutchinson vice-president. The secretary and treasurer, as well as the members of the standing committees, were re-elected. The annual reports show the College to be in good condition. Large sums of money have been expended within the last few years in building and furnishing, and in making additions to the library and the Mutter Museum.

— Dr. Howard A. Kelley, at the last meeting of the College of Physicians, read a paper on Hysteromyomectomy, and reported a case in which he performed a new operation with very successful results and rapid recovery.[1] Dr. J. H. Musser, at the same meeting, presented a communication on the treatment of peritonitis, in which he defended the medical treatment, by opium, leeches, fomentations, and salines, in opposition to the surgical treatment, that has been so much vaunted of late.

—Dr. Thos. G. Morton, recently, at the Pennsylvania Hospital, for the relief of a large innominate and subclavian aneurism, tied the carotid and axillary artery, with excellent result, and the patient was discharged with the signs of aneurism greatly diminished.

Miscellany.

THE LEGAL CLAIMS OF CONSULTING PHYSICIANS.

A point of special interest to the medical profession has been decided by the Orphans' Court of Philadelphia, says the *New York Herald*. It is that when a consulting physician has been summoned by the doctor in charge of the case the patient is bound to pay the former, although he was summoned without the knowledge or consent of the patient.

This rule does not hold good in every case, as, for example, when a patient is in a fit mental and physical condition to be consulted. But it applies whenever the circumstances or exigencies are such as to justify the attending doctor in calling another physician in consultation without communicating his purpose to the patient. The court says: —

> The trust, which includes the power for its exercise, with which the patient vests his physician is often practically unlimited, because it may require to be executed at a time when disease has taken away all ability to restrict it. The patient is not to be left to die on the plea that during such an interval no act of his adviser can be valid for want of his direct approval.
>
> Or the doctor may suspect the presence of an obscure disease, which, if it exists, demands heroic treatment. To communicate the suspicion to the sick man will probably finish him on the spot. May he not solve the doubt by consulting a specialist?
>
> If the right in the consulting physician to compensation for his services is without legal merit, then the law is a reproach to conscience. That it has not been passed upon hitherto means nothing, or rather it means that it has never been questioned, any more than the right of the physician to charge his patient with the drugs he has purchased or the nurse he has hired for him, when drugs and nursing were indispensable to his recovery.

"VICIOUS HABITS" AT WESTBOROUGH HOMŒOPATHIC INSANE HOSPITAL.

We make room, without comment, for the following extract, headed Vicious Habits, from the report of the superintendent of the Westborough Homœopathic Insane Hospital for the year ending September 30th, 1888—a report which, included with that of the Hospital Trustees, forms Massachusetts public document No. 30:

> Every physician having experience in treating the insane has undoubtedly been surprised at the frequency of finding vicious sexual habits among his patients of both sexes. His first belief is that those habits are the cause of a large proportion of insanity; while his mature opinion is that they are very often the result of weakened will power from mental disease. In either case, he will seek a means of prevention.
>
> We have found a pair of canvas drawers with or without a waist, held about the body by a lock strap, to be the best form for women. The best procedure for men, in incorrigible cases, is either circumcision or puncturing the prepuce with one or more strong iron wires, which are then bent into a ring the size of a quarter dollar.
>
> For a number of years I have thought it possible to effect the desired purpose by an operation, but I have not made the experiment until recently. My theory was that, the nerve of sensation being cut, improper practices would be discontinued. Acting on this supposition, I have operated in two cases with the assistance of Drs. Givens and Wiswall, assistant physicians.
>
> In the first case, cocaine was injected. The dorsal nerves on each side were cut, and the ends turned back upon themselves to prevent union. Sensation was somewhat deadened by the cocaine, but was still too acute for a similar attempt again.
>
> In the second operation ether was administered. The dorsal nerves on each side were cut and reflexed.
>
> In both cases, after the operation, sensation was somewhat diminished, but not obliterated. After a fortnight, no change was perceptible from that before the operation. My hope was, by leaving the ends of the nerves turned back, if mental improvement followed, and at a later time it became desirable to restore sensation to the parts, that, by cutting down to the nerves, the ends could be brought together again and sensation restored.
>
> This operation has failed in these cases because the nerve-supply is not entirely dependent upon the two dorsal nerves. To make the operation successful it will be necessary to follow the nerves farther back, which may include nerve-branches to other parts and thereby cause undesirable results.
>
> These unsuccessful cases are given as a possible inducement to others to discover a better procedure.

THE TREATMENT OF NIGHT SWEATS BY THE EXTERNAL USE OF CHLORAL.

According to the *Gazette Médicale*, Dr. Nicolaï has obtained good results in the night sweats of the phthisical by the employment of an embrocation of hydrate of chloral, two drachms dissolved in a tumblerful of brandy and water. Every night about bedtime the patient is rubbed all over with a sponge dipped in this solution. Sometimes three or four rubbings suffice to effect the complete disappearance of night sweats, which have previously lasted for weeks.

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[1] See page 40 of the Journal.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 29, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from Infectious Diseases.	Percentage of Deaths from Acute Lung Diseases.	Percentage of Deaths from Typhoid Fever.	Percentage of Deaths from Diph. & Croup.	Percentage of Deaths from Scarlet Fever.
New York	1,526,081	772	319	23.53	21.71	.52	7.41	6.63
Philadelphia	1,016,758	349	112	10.73	14.21	2.85	4.64	1.28
Brooklyn	751,432	341	137	20.59	17.79	1.16	9.86	3.48
Chicago	760,000	289	126	21.53	21.71	4.90	10.15	1.40
St. Louis	449,160	156	52	18.56	10.24	1.92	14.08	—
Baltimore	437,155	163	57	5.49	15.25	2.44	2.44	—
Boston	407,024	192	61	10.40	21.32	2.08	6.24	—
Cincinnati	325,000	84	—	14.28	9.52	4.76	7.32	—
New Orleans	248,000	132	31	9.00	6.00	3.00	4.50	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	91	30	7.63	22.89	1.09	—	—
Pittsburg	210,000	68	20	10.29	23.52	8.82	1.47	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	16	6	32.25	6.25	12.50	12.50	—
Charleston	60,145	33	11	3.03	3.03	3.03	—	—
Portland	40,000	10	3	—	—	—	—	—
Worcester	76,328	23	8	—	17.40	—	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	20	6	10.00	25.00	—	5.00	—
Fall River	61,203	25	7	16.00	8.00	—	4.00	—
Lynn	51,467	15	—	13.33	33.33	—	6.66	—
Lawrence	40,175	22	5	9.10	22.75	4.55	—	4.55
Springfield	39,952	16	5	25.00	—	—	18.75	—
New Bedford	36.298	8	3	12.50	25.00	—	—	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	10	4	10.00	—	—	10.00	—
Chelsea	27,552	12	4	8.33	8.33	—	—	—
Haverhill	24.979	11	—	—	33.33	—	—	—
Taunton	24,796	5	0	—	—	—	—	—
Brockton	24,784	8	4	25.00	—	—	12.50	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	8	1	—	—	—	—	—
Maiden	18,932	6	1	—	—	—	—	—
Fitchburg	17,534	9	4	11.11	11.11	11.11	—	—
Waltham	16,651	5	1	—	—	—	—	—
Newburyport	13,839	7	1	28.56	14.28	—	28.56	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2896: under five years of age 1021; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 481, acute lung diseases 514, consumption 363, diphtheria and croup 201, scarlet fever 80, typhoid fever 60, whooping-cough 39, diarrhœal diseases 32, scarlet fever 41, cerebro-spinal meningitis 12, malarial fevers 10, erysipelas 9. From whooping-cough, New York 19, Washington 4, Chicago 3, Philadelphia 2, St. Louis, Boston, New Orleans, and Chelsea 1 each. From diarrhœal diseases, New York 17, New Orleans 5, Chicago and St. Louis 2 each, Boston, Cincinnati, Washington, and New Bedford 1 each. From measles, New York 21, Chicago, 4, Boston, Washington, Cambridge, and Lynn 1 each. From cerebro-spinal meningitis, New York 4, Chicago 3, St. Louis, Boston, Nashville, Springfield, and Boston 1 each. From malarial fever, New York and New Orleans 3 each, Baltimore and Cincinnati 1 each. From erysipelas, New York 5, Chicago 2.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273 for the week ending December 15, the death-rate was 18.9. Deaths reported 3397: infants under one year of age 751; acute diseases of the respiratory organs (London) 330, measles 274, whooping-cough 73, scarlet fever 53, diphtheria 53, fever 47, diarrhœa 37, small-pox (Hull and Cardiff one each) two.

The death-rates ranged from 11.7 in Halifax to 32.4 in Blackburn; Birmingham 17.6, Bradford 17.9, Hull 14.2, Leeds 22.9, Leicester 16.7, Liverpool 24.0, London 17.7, Manchester 24.1, Nottingham 19,7, Sheffield 18.0, Sunderland 16.2.

In Edinburgh 14.1, Glasgow 20.9, Dublin 26.6.

The meteorological record for the week ending December 29, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Dec. 29, 1888.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
Dec. 23	30.38	29.0	43.0	11.6	36	45		40.0	S. W.	S. W.		17	15		C.	C.			
" 24	30.23	39.0	43.0	23.1	58	36		47.0	S. W.	S. W.		14	19		C.	C			
" 25	30.14	46.0	60.0	43.0	56	53		54.0	S. W.	S. W.		18	18		O.	C.			
" 26	30.20	46.0	59.0	43.0	78	76		77.0	S. W.	S.		12	10		O.	C.			
" 27	29.65	52.0	57.0	43.	90	87		88.0	S.	S. W.		18	26		O.	R.		13.10	.21
" 28	29.95	36.0	40.0	33.5	56	85		76.0	S. W.	W.		17	14		F.	C.		.50	.02
" 29	30.44	36.0	41.0	31.6	62	50		56.0	S. W.	N. E.		13	2		O.	O.			
Means for the Week	30.14		49.0	32.7				62.0											

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM DECEMBER 29, 1888, to JANUARY 4, 1889.

By direction of the acting Secretary of War, Captain FRED. C. AINSWORTH, assistant surgeon, will proceed to New York City, N. Y., and Brooklyn, N. Y., on business connected with the Medical Department. Par. 20, S. O. 302, A. G. O., Washington, December 29, 1888.

SOCIETY NOTICE

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—The annual meeting of the Society will be held at the Medical Library, on Monday, January 14, 1889, at 7.45 P.M. Election of officers. Reader: Dr. M. H. Prince. Subject: "The occurrence and mechanism of physiological heart murmurs [endocardial] in healthy individuals." Summary: Frequency of these murmurs as determined by the study of one hundred normal subjects. They are endocardial and functional, not organic. Coexisting cardio-respiratory murmurs. Analysis of concomitant physical phenomena. Increased cardiac action a causative factor. Mechanism of the heart by which the mitral orifice is closed, as determined by recent experiments. Relation between this action and these mitral murmurs, which are due to physiological leakage. Characteristics of those murmurs the same as ordinary regurgitant murmurs. Permanency. Frequency of aortic and pulmonic murmurs. Theory of their mechanism. Alternative hypothesis. Conclusions.

F. B. HARRINGTON, M.D., *Secretary.*

JAMES A. EMMERTON, M.D.

Dr. James Arthur Emmerton died in Salem, December 31, 1888. Dr. Emmerton was born in Salem, August 28, 1834, the sixth of eleven children of Ephraim and Mary Ann (Sage) Emmerton. His early education was obtained in the Salem schools. He was graduated from Harvard College in 1855, and from the Harvard Medical School in 1858. He then went abroad, and in 1858-59 was a resident student of the Dublin Rotunda Hospital, and attended Wilde's eye and ear cliniques. At the breaking out of the Rebellion he enlisted, in October, 1861, in company F, 23rd regiment (Colonel Kurtz), Massachusetts volunteers. This regiment formed a part of the Burnside expedition. He was warranted as corporal. After faithful service in the ranks, Dr. Emmerton was made assistant-surgeon at Batchelder's Creek, in 1862, and commissioned July 31. He was post surgeon at Plymouth, N. C., when the hospital was burned in December, 1862. He was with the 23rd in the winter of 1863-64, and with General Butler at Bermuda Hundreds, and with Grant at second Cold Harbor, until June 20, 1864, when he was made surgeon of the 2nd Massachusetts heavy artillery, from June 27, 1864, until the regiment was mustered out in October, 1865. After he came home he was assistant physician at the New York State Lunatic Asylum at Utica in 1866-67, when he gave up practice. Since then he has devoted much time and study in behalf of the Essex Institute. in 1879 he was with Henry Fitz Waters searching English records for the Prince and Silsbee families of Salem, compiling a large amount of valuable information that has been published by the Institute. In 1881 he published a large volume of the records of the Emmerton family, tracing the family back to Paganus de Emberton in 1168, down to the birth of Joseph Emmerton at Chebacco, now Essex, in 1712, who served as corporal at the siege of Louisburg, and was drowned in Chebacco river, September 27, 1782. Dr. Emmerton was the historian of the 23rd regiment, and published an exceedingly interesting regimental history.

Dr. Emmerton served the Salem public library as one of its trustees, and he made a special study of the methods used in conducting libraries; visiting a large number, and by correspondence and in other ways making himself fully acquainted with all the details of library work. He had collected one of the most valuable libraries in Salem, it being very largely composed of art works and those especially devoted to etching. He had a taste also for the drama, and literature connected therewith. Dr. Emmerton was a member and officer in the Essex Institute, a contributor to its publications, and interested in its work, a careful historical and genealogical student, a quiet, unobtrusive man, leading his own life in his own way, known intimately, perhaps, by very few outside of his own family circle, but by those to whom he was known trusted and beloved.

NATHAN ALLEN, M.D., LL.D.

Dr. Nathan Allen, a well-known physician and medical writer of Lowell, Mass., died January 1. Two weeks ago he fell down stairs while descending for some coal, striking the back part of his head on the stairs. He suffered concussion of the brain and some internal injuries, the precise nature of which could not be determined.

He was born in Princeton, Mass., April 25, 1813. At seventeen he began academic studies, and matriculating at Amherst College 1832, was graduated in the class of 1836. Then he went to Philadelphia, and studied in the Pennsylvania Medical School. He received his degree there in 1841. In the autumn of that year he settled in Lowell. His attention was soon attracted to the differences in birth-rate among people of various nationalities, and the small number of children in New England families, as compared with the rate of fifty to one hundred years ago. He investigated the subjects of physical culture and degeneracy, insanity and State medicine, heredity, hygiene, education, intemperance, and the family institution. In 1856 he was chosen a trustee of Amherst College by the legislature, and took a leading part in the establishment in that institution of the department of physical culture. Gov. John A. Andrew in 1864 appointed Dr. Allen a member of the State Board of Charities. By reappointments he served fifteen years, being chairman a part of the time. In 1872 he visited Europe as a delegate appointed by Gov. Washburn to the international congress which met in London to discuss the matter of reform in prisons and other correctional institutions.

Among Dr. Allen's published works are: "The Opium Trade," 1853; "Important Medical Problems," 1874; "State Medicine and Insanity," 1876; "Normal standard of Women for Propagation," 1876; and his last, "Physical Development," 1888. During his residence in Lowell, Dr. Allen had for many years been a member of the board of health of Lowell. In that capacity he rendered valuable service by pamphlets and published articles in the local newspapers, in impressing upon people the necessity of observing sanitary laws as a condition of good health. He was one of the oldest practitioners in Lowell, and in his younger days enjoyed a large practice. from which he acquired considerable wealth.

LLOYD MORTON, M.D.

Died at Pawtucket, R. I., October 16, 1888, Lloyd Morton, M.D., in the sixty-first year of his age. Dr Morton was born in Halifax, Plymouth county, Mass., where his father practised medicine many years. He was a graduate of Brown University, Providence, R. I., and of the Woodstock Medical College, Woodstock, Vermont, and he settled in the then town of Pawtucket, Mass., in the year 1852, and became a member of the medical society of that State the next year, and of the medical society of Rhode Island in 1864, of which society he was president for two years. For about two years Dr. Morton had attacks of angina pectoris, which were known to a few intimate personal friends, and while in attendance in a lying-in chamber the final one came. Of his practice the writer knows only that he required two horses, and that he was often called as a consultant to patients in the neighboring towns, in both this State and in Massachusetts. A widow survives him and also a son, now a law student in Harvard College. Dr. Morton was a true husband and father. At his burial, members of the medical profession attended in large numbers, and, as was most proper, officiated as bearers.

BOOKS AND PAMPHLETS RECEIVED.

U. S. Bureau of Education. Circular of Information. No. 1. 1888. Contributions to American Educational History. Edited by Herbert B. Adams.—No. 2 Thomas Jefferson and the University of Virginia. By Herbert B. Adams, Ph.D., etc., etc., with authorized sketches of Hampden, Sidney, Randolph, Macon, Emory, Henry, Roanoke, and Richmond colleges, Washington and Lee University, and Virginia Military Institute.—No. 5. 1888. Industrial Education in the South. By Rev. A. D. Mayo. Washington. 1888.

The Histology and Surgical Treatment of Uterine Myoma. By Henry O. Marcy, A.M., M.D., LL.D., of Boston, U. S. A., president of the section of gynæcology, Ninth International Congress; late president of the American Academy of Medicine; member of the British Medical Association; member of the Massachusetts Medical Society; member Boston Gynæcological Society; corresponding member of the Medico-Chirurgical Society of Bologna, Italy; late surgeon U. S. Army, etc. Reprint.

A Clinical Atlas of Venereal and Skin Diseases, Including Diagnosis, Prognosis, and Treatment. By Robert W. Taylor, A.M., M.D., etc., etc. Illustrated with 192 figures, many of them life size, on fifty-eight beautifully colored plates. Also many large and carefully executed engravings through the text. Part III. Venereal Diseases. Part IV. Diseases of the Skin. Philadelphia: Lea Brothers & Co. 1888.

Proceedings of the Connecticut Medical Society, 1888. Ninety-seventh annual convention, held at New Haven, May 23d and 24th New series. Vol. IV. No. 1. Published by the Society. N. E. Wordin, M.D., secretary, Bridgeport, Conn. Hartford, Conn. 1888.

The Medical Bulletin Visiting List, or Physician's Call Record. Arranged upon an original and convenient monthly and weekly plan for the daily recording of professional visits. F. A. Davis, medical publisher, Philadelphia.

The Continuous Use of the Bromides. By L. W. Baker, M.D., Superintendent Family Home for Nervous Invalids, Baldwinville, Mass. Reprint from The Medical Register, December 8, 1888. Philadelphia. 1888.

The Philosophy of Memory. By D. T. Smith, M.D., lecturer on medical jurisprudence, University of Louisville, author of "Gathering of the Waters," etc. Reprint. 1888.

Massachusetts Institute of Technology. Twenty-fourth annual catalogue of the officers and students, with a statement of the courses of instruction, and a list of the alumni. 1888-1889. Boston 1888.

Aus dem hygienischen Institut zu Berlin. Die Verbreitung der Tuberkelbacillen ausserhalb des Körpers. Von Dr. Georg Cornet, prakt. Arzt in Berlin und Reichenhall. Reprint. 1888.

Retrojection in Gonorrhœa. By E. R. Palmer, M.D., professor of physiology and pathological histology, University of Louisville. Reprint. 1888.

Thirty-third Annual Report of the Trustees of the Northampton Lunatic Hospital, for the year ending September 30, 1888 Boston. 1889.

Description of a Case of Coloboma of the Iris, Lens, and Choroid: with a Study of the Visual Fields. By Charles A. Oliver, M.D.

The Chemical Philosophy in Remedy. By Hugh Hamilton, M.Sc., M.D., Harrisburg, Pa.

Ninth Annual Report of the Associated Charities of Boston. November, 1888.

The Treatment of Heart Disease. By James Barr, M.D. Reprint

Original Articles.

THE AZORES AS A WINTER RESORT.

BY EMERSON WARNER, M.D., WORCESTER, MASS.

The Azores, or the Western Islands, as they are frequently called, are located in the North Atlantic, about two thousand miles from Boston, and from eight hundred to one thousand miles from Portugal, to which kingdom they belong. They lie between 36° 59′ and 39° 44′ N. latitude, and 25° 10′ and 31° 7′ W. longitude from Greenwich. The average latitude is about that of Philadelphia. Their authentic history begins in the first part of the fifteenth century. All previous accounts of them are apocryphal. Originally discovered and settled by the Portuguese — Moors, Flemings, and remnants from other countries are represented.

Thus they are a mixed people and have a mongrel language, based largely upon the Latin, so that their language is spoken of as the youngest daughter of the Latin.

Nine islands form the archipelago, somewhat irregularly situated, running W. N. W. to E. S. E., covering a linear distance of some three hundred miles. Much speculation exists in regard to their origin. Some assert they are the remnants of the lost Atlantis; but the evidences of igneous action are so abundant, they are generally regarded as volcanic.

Geologically they belong to the Miocene period, as identified by the stratified rock, and signs of the Glacial epoch are abundant on several of the islands. They are characterized by bold precipitous coast lines, rising rapidly towards the interior, the highest peaks averaging about thirty-five hundred feet, though one island, Pico, supports a peak seven thousand six hundred and thirteen feet above the sea-level. The same peak below sea-level extends downwards rather more than sixteen thousand feet.

They have no natural harbors, the business being mainly carried on through two islands, where artificial harbors are being constructed.

They contain a population, according to the census of 1878, of about 260,000, distributed approximately as follows: St. Michael's, 120,000; Terceira, 45,000; Pico, 26,000; Fayal, 25,000; St. George, 18,000; Flores, 9,000; Gracioso, 8,000; Santa Maria, 6,000; Coroo, a little less than 1,000.

That wonder of the ocean, the Gulf Stream, flows well to the north, and is crossed in going from Boston. The southern branch of the stream flows to the eastward between the islands and the continent, thus enclosing them in its embrace.

This gives them an equable climate. The changes of temperature are extremely slight — that between mid-night and mid-day in the shade not ordinarily over four degrees, and between the summer and the winter mean not more than ten or fifteen degrees. The average for the winter months is about 62°, and in summer about 72°. No frosts, no snows, except Pico's head is snow-capped a short time in what they call their winter. The view of this peak, five miles distant, has a peculiar charm for the visitor at Horta, the chief city of Fayal. In summer or winter its alluring, fascinating power is never lost.

The houses are built of basaltic lava. Doors and windows are wide open during the day, and the natives use fires only for cooking purposes.

Stoves are seldom seen, and many of the peasants' houses have no chimneys.

The dress of the peasants is coarse island linen, or wool, spun on distaff and woven on hand-loom.

They go barefooted the year through. Small children, sometimes with only one scanty garment, may be seen on the street every day, with head, arms, legs and feet bare.

St. Michael's, the largest of the Azorean group, is about forty miles in length and nine to twelve in width. It is a most picturesque island, and abounds in beautiful scenery. Here is located Ponta Delgada, the chief city, and third in importance in the kingdom of Portugal. It is a business centre, with considerable wealth, and contains about 25,000 inhabitants. It is situated on the south-west point of the island, extends two miles along the shore, and is backed by well-cultivated hills. The breakwater, begun in 1861, which will cost well nigh a million pounds when finished, will accommodate one hundred vessels of all dimensions and draught, and constitutes this the chief commercial port of all the islands. Its chief export is alcohol made from sweet potatoes, and all the product is sent to Portugal. They export also beans, maize, oranges, pine-apples, and pozzolana, a good cement. Ships in need call here for supplies and repairs. There is mail communication with Europe by mail steamers to Lisbon twice a month and by fruit steamers to England.

Some of the finest and most extensive gardens are here to be seen, filled with trees, shrubs, and flowers from every clime. As frosts are never known, verdant fields and vegetation exist throughout the year. The rich and titled have capacious residences in the midst of extensive grounds beautifully adorned, to visit which strangers and foreigners are ever welcome.

The roads are well-nigh perfect. In the leading cities are fairly comfortable carriages drawn mostly by mules, though there are some horses, but in the rural districts the donkey is the chief beast of burden.

Hotel accommodations are limited and are mostly under Portuguese management. In Ponta Delgada is a small hotel kept by an English family, which is homelike and comfortable. At Fayal, Terceira, and St. Michael's are Portuguese hotels of some pretension, but they have little in common with the commodious and luxurious American hotel.

In the winter months it is sometimes a little chilly and damp, showers are frequent, and one seldom leaves the house without taking an umbrella, as in England and Scotland, but the sun reappears quickly and the ground is soon dry, partly from evaporation and partly from the porous soil which conducts the surface-water quickly away.

Strong winds at times prevail, and high walls and hedges of incense and fiya trees are required to protect orange trees and other fruit. In summer the prevailing winds are said to be north-east and easterly. In winter they are from the south, south-west and more rarely from north-west and south-east, occasionally accompanied by severe gales, when the temperature falls to its lowest, With the Azoreans winter begins about Christmas. The three coldest months are usually January, February and March. During the winter of '87 and '88 the following is a digest of the daily record of the temperature and weather for the three months of December, January, and February. In December the thermometer was never seen below 60°. Warm, pleasant weather with only light, local showers till the 22nd. This was a wet day, followed by cloudy, showery days, till the 25th, when the showers come in squalls with heavy winds, and the 26th and 27th gave gales of wind and rain with low barometer (28.3). No such low barometer or heavy gales and high seas since 1839.

It was a regular blizzard, doing great damage to trees, shipping, harbor, and breakwater. Not more than once in a lifetime will one see such a Niagara sweeping over the breakwater, a structure thirty-three feet in height, and lifting boulders of tons in weight and depositing them on its promenade. During January the thermometer only once stood below 60° — that was January 4th: morning, 58°; mid-day, 62° — a lovely day. The rest of the month the thermometer registered from 60° to 66°. The extreme of variation was never more than four degrees in any given twenty-four hours. Only six days gave this variation. Nineteen days gave only two degrees of variation; the remaining days gave only a degree or less. Twenty-two days were without rain unless it might be a slight local shower. Three days only were cloudy and rainy the whole day,—the other days were a mixture of sunshine and rain. Of the twenty-nine days of February, eighteen were pleasant and without rain unless a very light local shower. Six days were cloudy and rainy most of the time — the other five days were more or less cloudy, windy, and squally.

Fourteen days of this month were spent at the Furnas, a crater containing valuable mineral waters, bath-houses, etc. Here the thermometer usually registers about four degrees lower than at any other place in the islands. The lowest was 57°. Here as elsewhere, the variation for the same twenty-four hours follows the same uniform rule.

The winter of 1886–87 was milder and more pleasant. May and June with us are seldom more agreeable — the changes there less sudden and great.

Mineral waters are found in several of the islands, but mostly in St. Michael's. In Ponta Delgada is found bottled and on sale one of the most healthful and agreeable of table waters. It issues from a high rock difficult of access — is collected and bottled as it comes from the rock, and its value has only been recognized within a recent date.

It has been analyzed in Paris, by Riche, professor of Chemistry in the School of Pharmacy, with the following results. In a litre of water was found: 1 gr., 748 of free carbonic acid,
0.0132 of carbonate of lime,
0.0105 of carbonate of soda,
0.0017 of chlorate of potassium,
0.0189 of chlorate of sodium,
0.0037 of peroxide of ferrum,
0.0030 of peroxide of manganese,
0.0890 of silica.

It being less saline than most of the waters extensively advertised, it can be used by a much larger number with advantage. Other mineral waters, found mostly in the crater called the Furnas, are longer and better known.

These were analyzed by a French chemist, M. Fouqué. As samples, the analyses of three or four only will be given. "Coldeira Grande, a boiling well of about eight or ten feet in diameter, seething furiously in a bed of loose stones, and protected by a circular wall some six feet high, wells up at the rate of nineteen gallons per minute, and its temperature is estimated at 212° Fahrenheit. The rush of gases is considerable, and they probably increase the violence of its agitation, which makes it impossible to take the temperature at the source."

Carbonic acid	988.90
Sulphydric acid	9.50
Azote	1.16
Oxygen	0.14
	1000.00

An evaporated litre of this water left a dry residue weighing 1.818 grammes. After the superoxidation of the sulphate of soda, the weight of the dry residue was equal to 1.767 grammes, which, when dissolved, gave:—

Carbonate of soda	0.707
Sulphate of soda	0.025
Sulphate of potash	0.016
Chloride of sodium	0.646
Sulphuret of sodium	0.064
Silica	0.285
Silicate of soda	0.024
	1.767

Caldeira de Pedro Botelho, or, as the natives call it, Boca do Inferno, a name suggestive and very appropriate, shoots what little water it contains with even, recurrent spurts and emits large quantities of gases at each pulsation. The water is intensely acid, and the sides of the pit are covered by a fine, gray, siliceous mud, much sought after by the peasantry for topical use in cases of stiffened joints and skin diseases. A sample of this mud, from which all trace of sulphate of lime has been eliminated, presented these results on analysis:—

Silica	61.23
Alumina	25.41
Peroxide of iron	0.92
Lime	0.51
Manganese	8.47
Potash	1.33
Soda	0.41
	98.28

The thermometer, quickly plunged into a bucket of this muddy water taken from the mouth of this Caldeira, indicated 98.5° C. (208.40° Fahr.), but the temperature is probably higher. A litre of evaporated water gave a dry residue weighing 1.003 grammes, which on analysis showed —

Sulphate of soda	651	Silica	.300
Sodic alum	087	Chlorohydric acid	.012
Sulphate of lime	031	Sulphuric acid	.003
Sulphate of iron	traces		
			1.087

Agua Azeda. This water is of the ferro-saline type, delicious to the taste and tonic in its effect. Its temperature is 60.80° Fahr., and it flows at the rate of 11 2-5 gallons per minute. A litre submitted to ebullition lost 930 cubic centimetres of gas, composed of —

		equal to	
Carbonic acid	890	Carbonic acid	95.7
Azote	35	Azote	3.7
Oxygen	5	Oxygen	0.6
	930		100.0

A litre of this water evaporated left a residue weighing 0.334 gramme, which gave —

Bicarbonate of soda	.170	Sulphate of potash	.004
Bicarbonate of lime	.010	Chloride of sodium	.067
Bicarbonate of iron	.008	Silica	.091
Sulphate of soda	.040		
			0.390

Padre José, temperature 123.80° Fahr. A litre of this water submitted to ebullition lost 102 centimetres of gas, made up as follows :—

Carbonic acid	86.3
Azote	12.0
Oxygen	1.7
	100.0

and a detailed analysis gave —

Bicarbonate of soda	.214	Chloride of sodium	.113
Bicarbonate of lime	.031	Silica	.201
Bicarbonate of iron	..020	Sulphydric acid	traces
Sulphate of soda	.114		
			0.693

One of the largest of the Quenturas baths wells up at the rate of 38 gallons per minute, temperature 118.40° Fahr., and is drawn off into reservoirs for use as required. A litre submitted to ebullition lost 200 cubic centimetres of gas, composed of —

Carbonic acid	192.5
Azote	6.0
Oxygen	1.5
	200.0

An evaporated litre left a dry residue, weighing 1.014 grammes, which on analysis, showed —

Bicarbonate of soda	.956
Bicarbonate of lime	.008
Bicarbonate of iron	.008
Sulphate of soda	.026
Silica	.192
Chloride of sodium	.111
	1.301

A public bath-house has been built in the valley of the Furnas — a nice, large, commodious and somewhat expensive building. It contains some sixty bathrooms with dressing-room attached to each; a marble bath-tub cut from a solid block set in the floor, and supplied with hot and cold water of iron and sulphur, so that a bath of any temperature desired, of either sulphur or iron water can be had, or a mixture of each. Each room has tiled floor, electric bell, suitable chairs, table, etc. The services of a janitor can always be had — a female attendant when necessary — and for all this there is no charge. A tip to the janitor or attendant is all that is expected. As yet there is no physician in attendance, save in the months from June to September, when two from Ponta Delgada serve a month each in turn for the time specified. They are taken from the hospital at Ponta Delgada, and a small hospital under the same management is located near this bath-house, which they use for such patients as they choose and think may receive benefit from such treatment.

An official report to the government is expected from these physicians each year.

It is easy to see that this imperfect service can not be productive of very valuable results.

This locality, so abounding in nature's products of sanative qualities, needs cultivating. This wealth of material running to waste night and day, if rightly appropriated, might be a boon to many who are afflicted and whose ailments might here find relief.

From the imperfect and unsatisfactory reports that have thus far been given, some idea can be had of the classes of cases which have received most attention, and the result. Cases of rheumatism are most numerously treated with the largest percentage of improvement. Next come nervous and skin diseases. Of seven cases of sciatica five were improved. Two cases of dorso-intercostal neuralgia were improved. Of ten cases of paraplegia in rheumatic patients, eight were improved. Five cases of hemiplegia following upon cerebral hæmorrhage, three were improved. Cases of psoriasis, impetigo, lichen were treated successfully. Many forms of dyspepsia are relieved and cured. Cases of anæmia are often greatly benefited. But the use of these waters is still largely empirical, and the great gift which nature has here bestowed on mankind is by no means properly appreciated.

The valley itself in which is found this wealth of mineral water is one of the loveliest spots on earth — rich in extensive and beautiful gardens, summer houses capacious and comfortable, and surrounded by peaks from which the view is entrancing. An old resident of the Sierras said of it in contrast, "While not so grand, it is far more beautiful."

Here Wm. Hickling Prescott spent a part of the year 1816, and wrote his sister, "In this delightful spot I have enjoyed some of the happiest hours that I have spent since I quitted my native shores."

Well may a man in such a retreat as this throw off the cares and burdens which threaten to crush mind and body both, and recover his elasticity, and find peace and health in the surrounding beauties and in the pure atmosphere which here he breathes.

The diseases most prevalent among the natives, as is generally the case, are born of their climatic conditions and sanitary surroundings.

The peasant is poor, poorly nourished, poorly clad, has the ground for his cottage floor, a damp climate, a damp house; these conditions bring their train of ills — general debility, dyspepsia, anæmia, rheumatism, and pulmonary troubles.

Epidemics of severe types of diphtheria, typhoid fever, or other fevers seldom visit the islands.

Malaria is unknown. The middle and higher classes are comparatively free from sickness, and many attain a great age. The natives are nearly all Catholics. A single small English chapel at St. Michael's, supplied by a Church of England clergyman from Christmas to Easter, is the only other public service in the islands. A few English-speaking people are found in the chief cities. At Horta, Fayal, is the home of our American consul. This office has been in the family over eighty years, minus two years only. Educated largely in our highest institutions — the family is intelligent, cultivated, refined, and keep thoroughly posted in matters that most engage the attention of American scholars and statesmen, and they are tireless in their efforts to entertain and make pleasant the stay among them of American visitors and others.

Many have had occasion repeatedly to return thanks for flowers — souvenirs of their delicate attention and kind regards, from their capacious and well-kept garden of several acres in extent, and containing specimens of nature's varieties of trees, shrubs, fruits, and flowers from nearly every clime.

Nor must the genial Mr. and Mrs. Edwards, of Fayal Hotel, be omitted. They are large-hearted and generous quite beyond what is usually seen in those who manage hotels. In Ponta Delgada, St. Michael's, are also to be found pleasant and cultivated English-speaking families, mostly natives of England.

The Portuguese are a polite and courteous people, even to the children. Saint's days and other holidays are frequently observed. Religious processions headed by bands of music, and conveying images of worship, often fill the streets with a gaily dressed throng.

On the whole they seem fairly prosperous and happy. Their increase is much in excess of their ability to maintain, so emigration, mostly of the young of both sexes, constitutes yearly a large export product. It will be seen by this somewhat discursive description that the Azores furnish the tourist or invalid who seeks to escape the rigors of a New England winter with an equable climate and beautiful scenery, among a profusion of flowers and luxurious vegetation.

Springs of fresh and medicinal water are ample in supply, and healthful. A winter residence here should never be sought by the consumptive; but for those suffering from asthma, rheumatism, neuralgia, anæmia, nervous exhaustion, malaria, general debility, the Azores are justly celebrated. The great and sudden changes which belong to our climate even in summer never surprises and shocks the invalid who seeks rest and quiet in these island retreats.

Expenses of living here are very moderate. Barks for Boston are sent out from E. A. Adams & Co., each making the round trip on an average once in ten or twelve weeks. The vessels are not large, but seaworthy — each in command of experienced and skilful officers.

THE MODERN PRACTICE OF SURGERY.[1]

BY OTIS K. NEWELL, M.D.,

Assistant Demonstrator of Anatomy at the Harvard Medical School, Surgeon to Out-Patients at the Massachusetts General Hospital.

THE briefest possible consideration of the subject to which I wish to call attention will be necessary in order to consume no more than the space allotted to this paper. Bearing in mind, moreover, the present abundance of medical literature, I realize the great importance of putting, at all times, whatever we have to offer in the fewest possible words, and I shall endeavor to do so. I wish to present to you the practice of surgery as it is to-day, and to consider in what way it may be pursued in order to give the most possible impetus to the progress of the Art, and the greatest and most effective value to our professional opinions. I fully realize the difficulty of considering, from every standpoint, what the practice of surgery in this community is and should be, and I shall endeavor to confine myself as much as possible to its scientific aspects. I believe it is quite well known how inclined men are to live so much within their own day as to be led to feel that improvement in particular directions can no more be possible, and to thus retard, in a measure, the inevitable advent of change and improvement in all human contrivances.

This may possibly result in a wise conservatism, which makes us loth to give up the old and tried thing until what would replace it has doubly proved its value. In 1833 Du Boyer, a well-known French surgeon, began his lectures on surgical diseases with the following sentence: "The art of surgery, pursued in all times with more or less diligence, has made, in our day, extraordinary progress, and appears to have reached almost the highest possible degree of development." In the light of a great discovery, which has changed the surgical treatment of disease from what was before almost empiricism to quite an exact science, how strange this statement seems and how much it ought to warn us against similar misconceptions.

Aside from the great advance in surgery which has brought us to the time when the peritoneum, which but to touch in the old day was considered fatal, may be operated upon with that degree of success which has made the mortality of exploratory abdominal operations practically nil, there is, as I believe we are all aware, a corresponding progress in almost every branch of the arts and sciences, a progress so great that a close consideration of its developments is almost appalling. Scarcely appreciating it we live under advantages, many of which would, to our ancestors, have been only as possible as miracles, and whose combined effect we, living also, perhaps, much within our time, cannot possibly estimate or understand completely. It is very gratifying to know that the present wonderful degree of intercommunication and interdependence of the civilized world has become only possible through the application of scientific discoveries to the more material advancement of mankind's condition. How abundant and familiar are the proofs of this! We only need to desire it and we can readily keep informed of all that occurs of importance throughout the civilized world. If the ordinary channels of circulation between this city and New York be occluded by the severe storm of a few hours we can rapidly develop a collateral circulation *via* London, which will keep up the necessary supply of information until the main current is re-established. In a few days, and indeed hours, we can travel from one clime to another by what but a short period ago would have been a long and tedious journey. We can speak, hear, write, and even walk with machinery. All these and many other possibilities, providing our lives are still averaging their forty odd years, crowd so much into them that it becomes a question how much is possible and advisable to do.

Is it likely that among other things the practice of medicine should not be greatly modified and improved by all these changes? I say the practice of medicine, because in trying to indicate what that of surgery should be, I must consider with it general medicine, to which it is now more closely than ever related. Probably nothing affects the advance of medicine so much to-day as the means of intercommunication above referred to, through which all knowledge and ideas in regard to it can be so rapidly disseminated that practically the whole medical world is set to thinking and to work upon them simultaneously. If necessary we can know the Crown Prince's pulse in every hour, and any important medical discovery can be read throughout the world in a few weeks. These enormous facilities for obtaining information furnish us with a literature so abundant that more than a few otherwise occupied evenings prohibit the careful perusal of even the most important medical publications. In surgery, in addition to this, the great strides of antiseptic treatment are developing a technique with which but few can find time or inclination to keep themselves properly familiar. In the other branches a corresponding condition of affairs is effecting its like results, and the conscientious practitioner finds himself sacrificing some of his sleeping hours in order to keep properly informed. If he does not do this, and if so, as a general practitioner, accepting the responsibility of every sort of case, he must be resigned into spreading his knowledge over a broad area, parts of which he knows he cannot properly cover, but must leave half-protected, justifying himself in some ill doing for the sake of the work well done.

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[1] Abstract of a paper read before the Massachusetts Medical Society, June 12, 1888.

It seems to me, in considering these facts from the scientific standpoint alone it is only possible for the professional man, whether physician, chemist, engineer, or of whatever calling, to pursue his work in full justice to himself or profit to his profession as a special worker. As true as it is that great progress is being made in all the arts and sciences to-day, so I believe it is true that the same progress is everywhere recognized to be due to special workers, and that but rarely is any great discovery due to the haphazard idea of that fast-disappearing genus, the Jack-at-all-Trades. I am far from wishing to suggest even that the "One-Idea Man" can work for the most good, or that any part of scientific work can ever grow faster by a general or occasional neglect of the whole; but rather that by a harmonious working of the several parts we shall be able to accomplish the most for ourselves and our profession. I have not time to mention here much in connection with this fact, but would refer those of you who wish to read a clear exposition of it to an address upon "The Relation of Modern Surgery to Internal Medicine," delivered before the Fifty-ninth Meeting of the German Naturalists' and Physicians' Society at Berlin, in September, 1886, by Prof. Dr. von Bergmann.

That to start with a broad and deep foundation is indispensable for the future work is as true as it is that the structure, as built to-day, cannot in a single lifetime serve its purpose and grow only as foundation. Already certain branches of medical practice are universally recognized as specialties, and as such they will probably remain unless further subdivided. In this community, however, it is not the custom to consider the remainder of practice as coming distinctly and properly under the two heads of general medicine and surgery. Again criticizing from the scientific standpoint alone, I am quite sure there can be no doubt that such should be the case, and that, as far as the practice of surgery is concerned, no man is to-day justified in undertaking it unless he has had, and is continually having, special surgical experience. I shall be told at once that this is impossible, that in the country the doctor must be ready to do all things, whether medical or surgical, such a division of work being thus made out of the question. I beg to differ upon this point, however. It is indeed self-evident that the so-called country practice is of a peculiar nature, and that it, above all, requires a man of the broadest information and widest capabilities; but whatever comes to him or to the general medical practitioner in cities, except for general medical treatment, I believe he should only treat in emergency. At all other times, and then always when possible, it would be better to call to the surgical case some one who devotes all his time to the study and clear understanding of that kind of work. In what degree our present system of medical practice makes this arrangement impossible, I have not to consider here, — a system that will in time here, as it already has been elsewhere, be made conspicuous by its absence. By our present method conscientious practitioners are forced into treating many cases which are taken rather because they justly contribute to the necessary income, than that they are welcome as scientific problems. A surgeon is perhaps not so readily called in consultation, since the very fact that he is thus in a degree designated as the superior of the attendant, and is also a "medical doctor," may result at the next illness in a faithless circumnavigation of the original advisors' abode. If the arrangement of special work were adhered to, the preponderance of one calling over the other would be in direct ratio of the number of surgical and medical cases. There would be enough and better work for each, and not every man would have to consider himself a physician and surgeon, a successful combination of which is, as I shall endeavor to indicate further on, nowadays impossible. May I, perhaps, put the matter in the light of practising as we would be practised upon? I not long since saw a physician who was travelling from Maine to New York to have his heart carefully auscultated. Which of us could lie quietly with a strangulated hernia, or a perforated intestine, if he realized that his fate rested in the hands of a man with whom the operation was practically an experimental lesson, and who did not have at his wits' end all that the most recent advances in surgery offered for whatever emergency or condition might arise? Is it not wrong to the scientific eye for a man to be allowed to die of perforating appendicitis or other similar trouble, when an operation is at hand to add to his chances of recovery, which has, owing to the work of specialists in medical diagnosis and surgical treatment, reached a point of almost practical certainty and safety? I may seem to be putting the case rather strongly, and I do so because I feel that every member of this society appreciates the daily increasing load which, under our present system and the great progress in all medicine, he is forced to carry, and that any suggestion of future arrangement, which shall lessen this and make his practice more satisfactory and valuable to himself and the community, if sincere in its purpose, is not out of place.

The great truth which has grown from the groundwork of Listerism has become so universally established and accepted that we no longer expect to or ought to hear that the antiseptic or aseptic method was used in an operation any more than that the patient was under the influence of an anæsthetic, and could as well excuse the absence of one as the other. The knowledge of proper and successful wound treatment under the observation of a principle, which until the past twenty years had never before entered the history of surgery, has been already so developed that a fatal result in no case of premeditated operation should ever occur. If it does, it must either be due to some unforeseeable complication or to poor surgical judgment. That this is so in carefully selected cases, long series of capital operations, including abdominal tumors, tongue extirpations and many others equally severe without one fatal result, give unanswerable evidence. Does it not then seem that whoever undertakes to do surgery to-day should be, except in emergency, held responsible for a completely aseptic course of wound healing, and at least a successful immediate result?

The long list of wonderful and ordinary operations which have been evolved from time to time has, perhaps, not yet increased as much as might be expected, since we find accounts of many of them back in the early days of surgery. But how different is the aspect which our new principle and its resultant certainty of technique put upon them and how great the number of marvellous feats which the well-trained surgeon of to-day should always be ready to perform. Let me review them as well as I can by translating closely from an address on the "Progress of Surgery in the last Decennium," by Prof. Wölfler, of Graz, November 28, 1887, and adding a few operations at that time omitted: —

"I. The different successful operations in the various body cavities for the removal of foreign bodies and growths, or the re-establishment or compensation of various functions. Here belong œsophagotomy, gastrotomy, gastroenterostomy, opening of the intestine in incarceration, colotomy for retained fæces, opening the gall-bladder for the removal of stones, cholecystoenterostomy to direct the obstructed bile current by a new channel into the intestine, and thus preserve its function, twice successfully performed, opening of pancreas cysts and echinococcus cysts, supra-pubic cystotomy and entrance into the bladder through the perinæum for exploration or the removal of stone and new growths; incision into the pelvis, of the kidney for the removal of pus, and calculus, fissure of the larynx, opening the pleural cavity with or without resection of the ribs for permanent drainage, opening of pulmonary abscess in gangrene of the lung, opening the pericardium, and aspiration of the ventricle, the removal of foreign bodies from the peritoneal cavity, and also the opening of bone abscess.

"II. Resection of different organs in the continuity. Extensive resection of diaphyses and epiphyses, Mikulicz's osteoplastic foot resection, resections of the sternum of the coccyx, resection of the arteries in aneurism, extensive resection of the veins in hypertrophied conditions and in tumor extirpations; the resection of nerves and their reunion after division.

"III. Resection of individual organs. Resection of the brain for tumor, — Horsley, and, by the same surgeon recently, successful removal of a tumor of the spinal cord. Resection of the larynx, and resection of the pharynx, œsophagus, stomach, large and small intestine.

"IV. Extirpation of organs. Among these belong entire extirpations of the larynx, of the thyroid gland, of the spleen, of one kidney, of the bladder in ectopy, vaginal and abdominal extirpation of the uterus, and the extirpation of ovarian tumors.

"V. As further progress in surgery we may regard the fact that we are now more than ever before able to replace defects, surgical or accidental, of various organs by transplantation in plastic operations, where, owing to the more favorable conditions of healing, the transplanted parts, from the same or another individual, or from animals, heal in without suppuration. Here belong the advances in plastic surgery of the skin, in the transplantation of large pieces of skin from one place to another, or the gradual transplantation of pediculated flaps from adjacent or distant parts; further transplantation of large pieces of epidermis; and nerve, muscle, tendon, and bone, transplantations. In this same group of operations should be recorded Von Bergmann's recent operation for the treatment of old patellar fracture, by chiselling off the portion of bone to which the ligamentum proprium patellæ is attached, Dollinger's treatment of spina bifida through osteoplastic union of the corresponding portions of the vertebral column, and Koenig-Olliers' method of covering nasal defects with periosteal flaps from the forehead. Finally, as another operation for defect reparation, Czerny and Macewen's operations for the radical cure of hernia. In the group of plastic operations comes also Nicoladoni's brilliant idea of making the pes calcaneus heal so that the function of the lamed Achilles tendon is transmitted to the peronei.

"VI. Further progress has been made by bringing dislocated organs into their normal position and retaining them there by means of suture and otherwise. Among these operations belong the fixation of a dislocated liver, Billroth and Von Hacker, fixation of the kidney by Hahn, and fixation of the uterus, Alexander and Adams.

"Among progress not indicated in the foregoing may be reckoned Bigelow's litholapaxy and the various methods of endoscopic examination of the bladder, stomach, and other cavities. Also obliteration of dead spaces, Mikulicz, and buried sutures, Neuber and others.

"Cases of surgical tuberculosis and cancer operated upon in the very early stages may be radically cured; when advanced, however, they are unfortunately as yet wholly beyond successful treatment.

"Local anæsthesia has also become of great value.

"Finally come the great number of advances in orthopedic surgery, and especially where complicated apparatus has been substituted by radical operations."

The great impetus which all this progress of the antiseptic era has given to the surgical pendulum has not been unattended with evils, perhaps unavoidable and necessary ones, in that they tend to bring the vibrations soonest to the normal swing. By these evils I refer to operating for records, unjustifiable experimentation, scorn of conservatism, what Volkman has referred to as "surgical tight-rope walking." We know that the best surgery minimizes the amount of operating, but that on the other hand the surgeon should never allow the magnitude of any operation or the effect of its possible poor result on his reputation to deter him from its performance when indications of its necessity are present. After all, the greatest progress is made, not in devising quaint and effective methods of operation, so much as in studying the technique of wound treatment during and after the operation, so that wounds, which at first it was thought could only be safely guarded by colossal occlusion dressings, are gradually being just as well protected by such light and simple coverings as an iodoform pad and a sack of absorbent material.

In conclusion I wish to consider another matter which has a strong bearing upon the progress of surgery and all medicine, especially in this State, and that is the relation of legitimate medical practice to quackery. In the code of ethics of the Massachusetts Medical Society, I find Article I. to say: "A physician should lend his influence to encourage sound medical education and to uphold in the community correct views of the powers and the limitation of medical science and art;" and in Article V.: "In every community there are minds naturally inclined to quackery, which has flourished in every age. It grows by being noticed and thrives best under opposition. It is commonly unwise to employ argument against it." Now this latter clause seems to be somewhat in contradiction of the first, and is, I believe, in its whole statement and effect a most grievous error. In the "Medical and Surgical Directory of the United States," the medical laws of Massachusetts are given as follows: "The Illinois State Board of Health, referring to this subject, says: 'Samuel W. Abbott, M.D., of Wakefield writes: "In reply to your letter requesting copies of our laws relating to the practice of medicine, I will say that we are all well aware of the excellent progress made by Illinois in this direction, and only wish that the whole Union might follow her example. Three years since a similar law was proposed and a bill presented to the legislature of Massachusetts. Several hearings were had before the committee on Public Health, but such a storm of opposition was raised by the Boston quacks as to kill the bill completely, and the feeble efforts to resurrect it have proved of no avail."'"

Is not this a disgrace? There can be but one excuse that the Massachusetts Medical Society has not long before this gone in a body to contend for the passage of such intelligent laws as are needed, and that is, in so doing its members are accused of making efforts to fill their own purses rather than to benefit the community. How absurd it is to say that "quackery rather flourishes under opposition; when in every intelligent community where it has been confronted with it it has been reduced to the least possible minimum. No doubt quackery always has and always will exist until people become educated above it, but it should no more on that account be legally recognized than should any other evil, because it has the same likelihood of continuing among us."

By a strange perversion of things, this State, credited I believe with so much average intelligence, is proverbially known as a "hot-bed of quackery." In medicine, unlike any other science, the quack is only readily detected by him who is well versed in the art itself, and it therefore devolves upon the physician more than any one else to aid in his exposure and extermination. In a few hours any member of the society well acquainted with this city can pick out close on to a hundred individuals practising here as doctors of medicine, who, aside from the inability to speak half decently their mother tongue, have so little knowledge of human anatomy as it acts and is acted upon in different ways that they may not know whether the liver is situated beneath the diaphragm or in the pelvis, and yet our State Law and sentiment allow such criminals, before every moral and scientific law, to intermingle with and be responsible for the most delicate, serious, and sacred affairs that can enter into life.

What more culpable wretch is there, for instance, than the man, and I have witnessed such, and can point out many more, who will, because he can legally steal a few dollars in that way, sit by the bedside or calmly gives advice in other places to patients threatened with some fatal malady, which he can no more understand than can the sick one the fact that within his smooth exterior is encompassed the mind and heart of that sort of a criminal who makes nothing out of trifling with human life, except his living. If the united effort of this society cannot soon succeed in establishing the most effective laws for the quick suppression of such vice, there is one way, I believe, in which it can be done, and that is by a process which is gradually making this thing, which "grows by being noticed and thrives under opposition," less and less indigenous to the soil of human intelligence. I refer to the education of the public in general medical, hygienic, and sanitary affairs. In other communities this is already being done with great effect, and here, in spite of the insulting lack of legal support, the medical profession is doing much in the same direction. Our society is growing to large numbers, and our annual meeting has already become a problem to the committees entrusted with its organization. The Arrangement Committee has this year been obliged to make new plans for the entertainment of the members, as no hall large enough was obtainable for the usual table dinner. I have been wondering if, in the course of time, we should not be able to hold our meeting during several days in the Mechanics' Association Building, and in addition to the regular business, which promises now sectional work, have a large educational exhibit corresponding to such as the London Healtheries and the Vienna Cooking Exhibition, to which the public could be admitted and there be taught to realize just what the regular study of medicine is, and the relation which every medical parasite bears to the great body of modern medicine.

I can well imagine such an exhibit, where hygienic systems, methods of food preparation, cooking apparatus, sanitary appliances, and all the various surgical and medical apparatus, with all the rest that bears upon the subject, could be seen with great interest and profit. The great value of educating the public in regard to the prevention and cure of disease is already recognized, and quite universally, to a greater or lesser degree, especially in hygienic and sanitary matters, being put into practice. It is in itself worthy of a much longer and abler article than the present. I can but touch upon it as affected in this State by the non-existence of laws, and there only in a few instances among the many which have come to my particular notice.

Our newspapers, under the existing laws, are justified in advertising statements, which it is not their business to analyze, of the most false and misleading character in regard to the cure of disease, things which to the less fortunately educated classes appear from their very manner of statement and place of publication as necessarily true and valuable, so that they readily pay their hard-earned money for such nostrums or to such individuals. It is well known to the profession that many cases of cancer, when seen in the very early stages, may be radically cured by operation, such as lip cancer, to which the patient's attention is soon called. This is also the case with early-discovered so-called "surgical tuberculosis," which may be cured and prevented from becoming constitutional by early operation. How many lives and how much misery might be saved if people were taught to have their bodies examined occasionally, with the same care that some have given to their teeth, so that by detecting a destructive process in the early stages, a whole organ need not be sacrificed, especially where its loss is either of irreparable injury or fatal effect.

I saw a man not long ago at the Massachusetts General Hospital with cancer of the lip. He was advised to have an operation which would promise him a radical cure, but, not being educated in regard to the value and simplicity of etherization, and the safety of surgical procedure, the word "operation" overcame him, and he refused the recommended treatment. He was then advised to permit no other sort of interference with the growth. That very day, on his way from the hospital, he encountered a wagon and pair of horses covered with the red-lettered signs of certain long-haired, greasy, so-called "Indian doctors," who, among other things, never failed, and would promise on their oath, if necessary, to the patient, to cure cancer. He visited them, and at a liberal consideration was treated to a "drawing and healing" salve. About two weeks later he came again to the hospital. The growth, irritated and aggravated by the "Indian" application, had increased with great rapidity, and the glands in the neck were hopelessly involved. This is only one instance among a hundred such that are daily occurring in this community, and still the Homes for Friendless Cats and Dogs, and many other things equally as good as the Societies for the Prevention of Cruelty to Animals, have, *from a close study of their needs*, grown up among us in flourishing condition.

I recently met an acquaintance, a young, apparently intelligent man, who told me that he had been ill for six months, that he had tried all sorts of "doctoring" without avail, and asked me what I supposed finally cured him? I could not imagine. He told me mental healing, and asked me if I believed it. Believed it? Certainly I did; and also believed that in this State one in three hundred and fifty of the population is insane, and that among the rest, at greater or less remove from the same condition, are people who, from the slight tendency to mental impressions, such as nausea at the sight of trivial things, may pass on to the point of sincerely believing themselves in control of the Indian girl Gita, or some other even more impressive influence. When we realize that a man completely the subject of mental impressions may even sit on a red-hot stove as comfortably as the ordinary individual reclines in a chair, can we look with anything but anxious compassion upon those whose mental state is in such a critical condition that they imagine the powers of mind-cure to extend beyond the normal physiological safety line? Is it not hard to believe that in this city and in the 88th year of the 19th century, the doorways of our large public halls may be placarded with flaring signs reading that, within, the wonderful Dr. So-and-So will practise mental healing free of charge from 10 to 11 A.M. Have any of you ever taken the trouble to enter these places and see the class of people whose credulity leads them to seek such men, and witnessed how they are imposed upon? How the "doctor" *promises* to cure these weak, trembling things, "if they will come to the hotel," and that "his charge is only five dollars."

The same spirit that discountenances any legal interference with the practice of medicine affects the degree of ease with which its study is pursued. Aside from the unnecessary difficulty in obtaining material for anatomical study, the investigation into the pathology of disease is retarded here because an ignorant prejudice exists against the wisdom and necessity of post-mortem examinations, so that among 2807 deaths at the Massachusetts General Hospital during the past seventeen years, only 930 post-mortem examinations have been made; or, as statistics kindly furnished me by Prof. R. H. Fitz show, the average number of post-mortem examinations among the deaths from 1876–1885, inclusive, has been in the New York Hospital 76%, Presbyterian Hospital 55%, Pennsylvania Hospital, not including fatal cases of accident, 46%, Montreal General Hospital for five years 89%, Boston City Hospital 29%, and Massachusetts General Hospital 27%.

How little support the study of medicine has received here from the laity can be somewhat estimated by comparing our institutions with the Carnegie Laboratory of the Bellevue Hospital Medical College, the Laboratory of the Alumni Association of the College of Physicians and Surgeons, the Hoagland Laboratory of the Long Island Medical College, the Loomis Laboratory of the Medical Department of the University of the City of New York, the Vanderbilt and the Johns Hopkins Medical Schools, and other similar gifts elsewhere made towards the progress of medicine in America.

A CASE OF UNIFORM CONTRACTION OF ALL OF THE FLEXOR MUSCLES IN THE FOREARM, RELIEVED BY AN OPEN INCISION.

BY A. T. CABOT, A.M., M.D.

The following case is briefly reported to draw attention to one or two considerations, which, it seems to the writer, should determine our selection of the proper point for section of contracted muscles in the forearm.

Annie L. M., fourteen years of age, entered the Massachusetts General Hospital August 12, 1886, with her left wrist strongly drawn over by a uniform contraction of all of the flexor muscles to the wrist and fingers. These muscles and tendons were not fixed by inflammatory adhesions, but were simply so shortened that they would not permit the extension of hand and fingers. When the wrist was strongly flexed, the fingers could be completely extended, and when, on the other hand, the fingers were tightly closed, the wrist and metacarpus could be brought into line with the arm. The extensor muscles were not paralyzed, although they were, perhaps, less powerful than they should have been.

This condition had existed since the girl was three years old, and had followed a fracture of the forearm with confinement in splints at that time.

The motions of the wrist and fingers, although limited, were fairly strong, and the condition was objectionable on account of its unsightliness and its interference with her playing on the pianoforte. With her hand in the flexed position she could not strike an octave.

An attempt was made, under ether, to forcibly straighten the wrist, but to all the force that could be safely applied it did not budge a particle. After considerable demur, the parents finally decided upon an operation.

August 20th. Ether was given and an incision was made across the forearm, about three inches above the wrist joint. All of the flexor tendons, to the number of twelve, were divided (flexor carpi radialis, flexor carpi ulnaris, palmaris longus, flexor sublimis digitorum, four tendons, flexor profundus digitorum, four tendons, and flexor longus pollicis). The fingers and wrist were now easily straightened and secured to a splint, and the wound was brought together with silk sutures. The whole operation was done with extreme care in carrying out antiseptic precautions, and healing took place by first intention. The splint was taken off on the thirteenth day, and the next day the patient could somewhat flex the fingers herself. She went home on the seventeenth day, with directions to carefully attend to active and passive movements of the fingers. When seen again, some months later, there was very good motion in both flexion and extension, although there was some adhesion of the muscles to the scar. She told us that she had an illness, said to be typhoid fever, shortly after her return home, so that for several weeks at that time the exercise of her fingers was wholly neglected.

On September 13th, 1888, her mother wrote as follows: "We think the cords have not contracted any since the operation. The arm is as strong and not less useful than before the operation. She plays the piano, and can reach a full chord, but without much force. The fingers lack strength at the tips, so that she has not the power to strike them down on the keys bent, but lays them down flat. When she wishes to grasp anything firmly, she takes it between the thumb and the palm of the hand, the fingers remaining nearly straight."

The difficulty in flexing the terminal phalanges seems to be due largely to the adhesion of the tendons at the scar. How much less troublesome this might have been, had the motions of the fingers been continuously attended to just after the operation, it is hard to say. Even with its limitations, the parents and child feel the relief of deformity and increased usefulness of the hand to be a great gain over the old condition.

The point of incision, so far above the wrist, was selected in this case for three reasons. First, it avoided opening the bursa which surrounds all of the flexor tendons near the annular ligament. This bursa communicates with the carpal joints, and any inflammation originating in it quickly extends to and disables the wrist.

Second: It did not divide the tendons where they lay close alongside of each other, and would therefore be hopelessly matted together by any slight inflammatory adhesion. The healing of a tendon within a synovial groove causes a more or less intimate adhesion to an unyielding sheath, while a tendon wounded in the midst of lax connective tissue is much more likely to retain its freedom of motion.

Third: There seemed to be a very decided advantage in dividing the tendons at a point where the muscular fibres were already attached to them. In this way they were not separated from their respective muscular bellies, but some of the muscular fibres remained attached to the distal portion of the tendon, preventing a too great separation of the parts, and serving as a guide for the reparative process which was to reunite them. This third advantage attached especially to the division of the tendons of the flexors of the fingers.

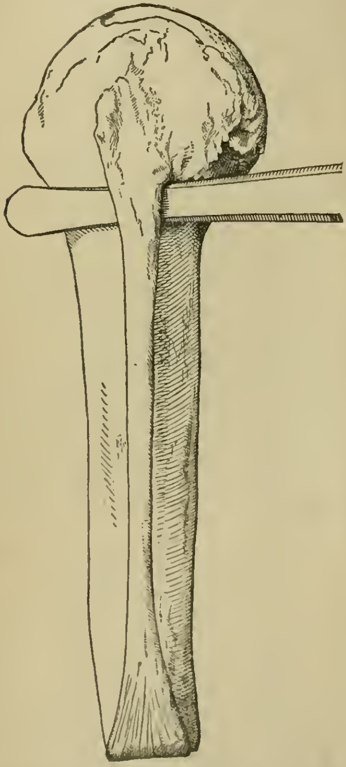
All of these considerations seemed of practical value in the performance of the operation, and the favorable healing with the preservation of function confirmed this opinion. Whether this practice should be applied to the section of other muscles of the pennate variety experience will show. Fortunately, in no other part of the body is the individual independence of the muscles so important as in the forearm.

RUPTURE OF THE TENDON OF THE LONG HEAD OF THE BICEPS.

BY G. H. MONKS, M.D.

Some time ago I found in a cadaver in the dissecting-room a shoulder-joint which illustrates so well the ultimate results obtained after most ruptures of the long bicipital tendon, that I consider a cut of it worthy of a place in the *Journal*. The figure shows the humerus and the tendon. The subject was a tall, thin man, apparently about fifty years of age. The joint showed distinct evidence of a chronic rheumatoid process, and the head of the humerus was flattened and broader than normal, and its surface was rough. The biceps tendon, which had been torn from its attachment to the upper margin of the glenoid cavity, was firmly adherent to the upper end of the bicipital groove, while above this point and at the spot where the tendon should normally arise there was no trace of any tendon whatsoever. The capsule of the joint was considerably thickened, and the tendon was firmly adherent to that part of it which was over the bicipital groove.

The *predisposing* cause of the rupture was possibly a weakening of the tendon from senile or rheumatic changes, and a gradual wearing away from friction over a roughened surface. The *immediate* cause was probably some slight strain. The tonicity of the biceps muscle undoubtedly pulled the torn tendon down the bicipital groove, where it acquired a new attachment to the bone; this time to the humerus, Thus two clinical facts, which are almost always noticed in these cases, are explained: first, that the tendon can in life be felt below the lower margin of the deltoid, a thing not possible under normal conditions; and, secondly, that ultimately a useful arm may result because of the new attachment in the bicipital groove.



Since reporting four cases of this injury in 1886[1] five or six others have come under my observation, and I have never yet seen a case where the tendon cannot be felt below the deltoid.

The snap of the tendon during life is sometimes so slight as to escape the notice of the patient himself. This is often the case in the aged. In the young or middle-aged the snap is sometimes so loud as to be heard by the bystanders:— thus a patient (kindly referred to me by Dr. F. B. Harrington) was engaged with another laborer in lifting a heavy stone, when the tendon gave way with such a loud snap that his partner at once inquired if he had "bust his suspenders"!

In a case of injury to the shoulder, where the biceps tendon is found ruptured, it is often difficult to determine whether the rupture is due to this injury or whether it dates farther back. It may have taken place years before, and have given rise to so little trouble at the time that the patient has entirely forgotten the occurrence.

A complete rupture is easily recognized by the physical signs alone; but not so a partial rupture or strain, where there is no deformity to point to the correct diagnosis. In such cases, let the surgeon grasp the hand of the patient as if to "shake hands" with him. Now, the patient should be told to *pronate* and then to *supinate*, the surgeon resisting. If the tendon is injured there will be much greater pain on attempting to supinate than in pronating; for in supination the biceps is called upon for action, whereas in pronation it is practically at rest. This test I have found more reliable than that suggested by Hueter, viz., that flexion of the supinated forearm causes more distress, and is accomplished with more difficulty, than flexion of the pronated forearm.

If then, after an injury likely to unduly stretch the tendon, there is *tenderness* along the bicipital groove, with possibly some *ecchymosis*, and if the act of supination (against resistance) is more painful than pronation, there is every probability that the long bicipital tendon has been either partially ruptured or severely strained.

REPORT ON OBSTETRICS.

BY CHARLES M. GREEN, M.D.

THE USE OF ANTIPYRINE DURING LABOR.

GRANDIN[1] (New York) has experimented with antipyrine as an analgesic in the first stage of labor with gratifying results. His method has been to give fifteen grains of the drug, well diluted, and preferably with some stimulant, such as spiritus ammonii aromaticus, and to repeat the dose in one hour. Two hours later the patient is given ten grains, and this dose is repeated every two hours if necessary. In conjunction with antipyrine, Grandin uses chloral hydrate in fifteen-grain doses, every three-quarters of an hour, until three or four doses have been given.

The result of this combination Grandin has found to so far nullify the pains as to be scarcely perceptible in two instances, and in other cases to be simply uncomfortable. The progress of labor was not interfered with, and there was no evidence of injurious effect on either mother or child.

LESIONS OF THE PLACENTA IN ALBUMINURIA.

Rouhaud[2] (Thèse de Paris, 1887) found that, among sixty-eight women affected with albuminuria, there were twenty-eight having lesions of the placenta characterized by hæmorrhages. Among eleven women with eclampsia, placental lesions were ascertained to exist in eight. In almost all the cases in which the lesions existed the patients were primiparous. These lesions can explain the hæmorrhages often observed in the course of pregnancy, as well as premature labor and death of the fœtus. We possess no sign which enables us to recognize this lesion, and its treatment is the same with that of albuminuria.

THE SEPARATION, IN POINT OF TIME, OF VERSION AND EXTRACTION.

Winter wrote on this subject, and his views were noticed in these reports.[3] His main conclusions, based on three hundred and ten cases, were:

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[1] Journal, vol. cxv, page 49.

[1] N. Y. Med. Jour., July 14, 1888.

[2] Revue des Sciences Medicales, July 15, 1888.

1. That one ought not to perform version until the cervix is sufficiently dilated to allow of immediate extraction.

2. That the best results for the child are obtained by immediate extraction.

Dohrn[4] discusses Winter's conclusions, and admits the first but not the second. In one hundred and fifty-two cases of transverse presentation in the Königsberg clinic, immediate extraction followed version: one hundred and thirty were born alive and twenty-two were still-born. On the contrary, in twenty-two cases of trunk presentation, in which, after version, the expulsion was left to nature, all the infants were born living. Dohrn, therefore, thinks himself justified in concluding —

1. That in a shoulder presentation one ought never, in the absence of a particular indication, to perform pelvic version until dilatation is complete.

2. That the extraction of the fœtus ought to be performed only when there is a special indication; in all other cases natural expulsion is preferable for both mother and child.

INTRA-UTERINE SNARING OF THE ARMS IN VERSION AND EXTRACTION FOR CONTRACTED PELVIS.

Schatz[5] (Rostock) has suggested the novel expedient of snaring the fœtal arms in utero, with a view to facilitating extraction after podalic version in narrow pelves. The difficulty, so frequently encountered in such cases, is the extension of the arms above the head. Valuable time is then consumed in bringing down the arms, which are sometimes also injured in the manœuvre; and fœtal life is often lost from delay thus occasioned before the head can be extracted. To avoid this delay with the after-coming head, Schatz has in a number of cases snared one or both arms, while his hand and arm are in the uterus prior to podalic version. The loss of time from this manœuvre is of no consequence, as at this time the child does not suffer any respiratory interference, and Schatz believes that by this procedure he has saved the life of many children. The application of the sling to the arms requires, of course, a certain amount of dexterity, but no more than ought to be possessed by one who would attempt version and extraction in contracted pelves.

THE EFFECTS OF COMPRESSION OF THE FŒTAL SKULL, WITH SPECIAL REFERENCE TO DELIVERY IN MINOR DEGREES OF FLAT PELVIS.

Milne Murray[6] (Edinburgh) has written a paper of great value, which has an important bearing on the question of turning *versus* high forceps in minor degrees of flat pelvis. The great objection to the use of high forceps in such cases has been the belief that the necessary compression of the fœtal head in its occipito-frontal diameter resulted in a corresponding increase in the transverse diameters, which increase only enhanced the difficulty with which the head passed the narrowed conjugate. There is eminent authority for this belief. Being struck by the unexpected ease with which he had delivered with axis-traction forceps in a case wherein long forceps had failed under similar conditions in a preceding labor, Murray set himself to explain the reason. Obviously the conditions of compression would be the same in both kinds of forceps, and this fact led him to doubt whether the transverse diameters of the fœtal head are in reality increased by occipito-frontal compression. To determine this point, the following experiment was made: a cephalotribe was applied to the occipito-frontal diameter of a recently delivered fœtus, and the blades simply brought into contact with the head without in any way compressing it; the antero-posterior and transverse diameters were then accurately measured with calipers. The compression-screw was now turned until there was a manifest reduction of the occipito-frontal diameter; the same diameters were then measured and noted, and the procedure repeated two or three times until the bones began to show signs of giving way under compression. This experiment was repeated on nine fœtuses of varying degrees of development. Accurate tables are given in the paper of two of the experiments, and from the results of all his observations Murray concludes: 1, that "the fœtal skull is compressible in an antero-posterior direction by the sliding of the occipital and frontal bones under the ends of the parietal bones;" 2, that "this compression is not accompanied by any appreciable increase of the transverse diameters."

The question then arose as to what happened to the contents of the skull, and how they accommodated themselves to the diminished space. As these contents are practically incompressible except within narrow limits, if their containing space is limited in one direction it must be correspondingly increased in another; this was found to be provided for by the elevation of the parietal bones and the elongation of the head in a vertical direction, directly proportioned to the antero-posterior compression.

If the forceps blades are accurately applied over occiput and sinciput, as they naturally would be in simple flat pelvis, they do not interfere with the telescopic adjustment of the cranial bones, and with the vertical elongation of the skull. If, however, the grasp is an oblique one, the effect of compression will be distortion of the head, that is, a lengthening of the free oblique diameter to a degree nearly proportional to the shortening of the compressed diameter, a result which would materially increase the difficulty of the passage of the head through a contracted conjugate.

[It is probable that this oblique grasp of the head, interfering, as it does, with the telescoping of the bones, and adequate vertical elongation, is often the cause of fatal injury to the fœtal head; a result which has unjustly prejudiced the skilful use of high forceps in suitable cases. — REP.]

The practical deductions from these observations are as follows: —

First. That the failure to deliver in minor degrees of flat pelvis with the simple long forceps was not due to transverse bulging consequent on antero-posterior compression, as the conditions of compression are the same with axis-traction forceps; rather that in the older instrument force was not applied in the axis of the superior strait, as can be done with axis-traction.

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[3] Vide Boston Med. and Surg. Jour.

[4] Zeitschr. für Geb. und Gyn., Band xlv. 1; Revue des Sciences Médicales, July 15, 1888.

[5] Trans. of the Second Congress of the German Gynæcological Society; Centralblatt für Gynäkologie, 1888, No. 24.

[6] Edinburgh Medical Journal, Nov., 1888.

Second. That in minor degrees of simple flat pelvis and flat mechanism (*i.e.*, with the sagittal suture in the transverse diameter of the pelvis, and with some head extension so that the fontanelles are in the same plane), a reasonable amount of traction with axis-traction forceps will effect safe delivery, and the risks of turning may be thus avoided.

[It should be borne in mind that the virtue of axis-traction forceps is not that the instrument enables the operator to apply additional force, but that by the *better application* of force, a given resistance in a case suitable for forceps may be overcome with *less force.*]

Third. That it is of the greatest importance to apply the forceps in the antero-posterior diameter of the head. In cases of flat mechanism, where the occipito-frontal diameter presents in the transverse, the blades should therefore lie at the extremities of the transverse diameter. In the justo-minor pelvis, the head presents in one of the oblique pelvic diameters, and the forceps should therefore be applied at the extremities of the same oblique diameter at the brim, otherwise the proper telescoping and elongation of the head will be interfered with, and the cranial contents may suffer undue compression.

Clinical Memorandum.

A CASE OF BRONCHIAL ASTHMA,

APPARENTLY CAUSED BY A FOREIGN BODY IN THE LUNG.

BY F. I. KNIGHT, M.D.

MISS T., æt. twenty-eight, was seen by me last month while suffering from a severe attack of bronchial asthma. She stated that she had been subject to such for more than twenty years, and could always relieve a "simply spasmodic attack" by burning the papier Fruneau, but that when one came on with a cold and bronchitis, nothing gave her much relief for several days. She had lived in various parts of the world, and was familiar with many methods of relief, but strangely enough she had never received a subcutaneous injection of morphia. I administered a small one at once, hardly more than an eighth of a grain, and she experienced an immediate alleviation of her extreme suffering. The next day the expectoration had become free, and the patient quite comfortable. She then gave me the following history.

She was well till between five and six years of age, when she inhaled a bean. Tracheotomy was performed, but the foreign body was not expelled at the time. The wound was left open without a canula. She grew very ill, and was not expected to live, but after three days the bean was expelled during a violent fit of cough. She recovered, but had much cough during the winter, soon attended with asthma, to which she had been subject ever since.

It seems to me pretty clear that a morbid condition of lung was set up by the presence of the foreign body in this patient, which ever since has acted as the immediate cause of her asthmatic attack. I do not mean to say that there was not a constitutional predisposition to this kind of reflex, but the lesion in the lung was one of the factors needed for the asthmatic paroxysm. The frequency with which bronchial asthma originates in an attack of broncho-pneumonia, especially in measles and whooping-cough, has been pointed out and strongly insisted upon by Heidsalter and Berkhartt, according to both of whom this happens in about 8% of cases. Some damage recurs to the lung, not perhaps perceptible on auscultation or percussion, but yet sufficient to act as a permanent source of asthmatic paroxysms, slight irritation from a great variety of sources being sufficient to start the reflex phenomenon. If this local condition had not been excited by the foreign body, it would very likely have been caused sooner or later by a broncho-pneumonia from some more common cause, for though her mother and father were free from asthma, one other of a family of ten children developed asthma after a severe bronchitis at the age of six.

I report this case to call attention to an unusual way in which one of the factors necessary to the development of an attack of bronchial asthma may be produced, and to take another opportunity to protest against the idea that bronchial asthma is a simple neurosis, a simple bronchial spasm in a perfectly healthy lung and tubes. Bronchial asthma is, as a rule, a complex manifestation requiring several factors, and although nervous irritability comes in as a predisposing element, we will often find, as in this case, that the manifestations do not begin until some morbid condition of the lung itself has been set up.

Chemical Memorandum.

TYROTOXICON IN MILK.

BY LEONARD P. KINNICUTT, D.SC.,

Professor of Chemistry in the Worcester Polytechnic Institute,
Salisbury Laboratories.

ON Friday evening, November 9th, Dr. George E. Francis brought me a pint of milk, and gave me the following facts: —

"I was called this morning to attend five persons in one family suffering from an attack of cholera morbus. On inquiring, I found that, of the two members of the family not ill, one had taken no cream or milk, while the other had taken only boiled milk with her breakfast. The five members who were ill had all taken cream or milk of the previous day, and the symptoms of poisoning had begun about two and one half hours after breakfast."

The milk was in a pint beer bottle with patent rubber stopper, and appeared and tasted perfectly fresh and good. After carrying it to the laboratory it was allowed to remain in the tightly stoppered bottle for one week before it was examined. The milk had by that time decomposed, separating into two layers. It was filtered through thick Swedish filter-paper, the filtrate neutralized with a dilute solution of sodium hydrate, placed in a separating funnel, and shaken thoroughly with ether. A thick emulsion formed, and it was only after four days, and by the use of various mechanical means, that a separation could be effected. The ether solution was allowed to evaporate at the ordinary temperature, and the residue carefully tested. Reactions were obtained which agreed perfectly with those given by Vaughan, *Journal of Analytical Chemistry*, vol. 1, pp. 25 and 281, for tyrotoxicon.

There is therefore no doubt that the poisonous action of the milk was caused by the same poison that Vaughan found in the various cases cited by him.

A visit to the dairy from which the milk was obtained was made, and it was found that the herd consisted of fifteen Jersey cows, all in the best condition, well fed and cared for. The dairy supplies about forty families with milk, and the milk of all the cows is mixed together, before subdividing it into the various portions. And as only one family out of the forty supplied with the milk, as far as can be found out, suffered from any poisonous effect, it proves that the poison was developed after the milk had been delivered. This was also found to be the fact on questioning the servants of the family poisoned. The milk had been received in a tin can, which it was their business to keep clean, and it had been immediately subdivided into two portions. One portion was placed in an earthen dish to raise cream, and the other was used during the same morning as fresh milk, without causing the slightest trouble. The symptoms of poisoning were caused by the first portion, after standing over night. The above facts seem to show that the tyrotoxicon was developed during the twenty-four hours after the milk was received.

The only explanation of its development that I can at present give is that the cans used for obtaining the milk had not been thoroughly scoured with boiling water, and that a little old milk remaining on the inside edges of the can had undergone a peculiar fermentation, and had caused the development of a sufficient amount of tyrotoxicon, during the twenty-four hours it had remained in a cool place, to produce the poisonous action.

I have been led to describe thus fully the above case, as up to this time almost nothing is known as to the cause of the formation of tyrotoxicon in milk. I have, I think, pointed out one way in which it may be developed, namely, the use of cans which have not been kept perfectly clean, but it is only by the careful examination of a number of cases that it will be possible to decide whether the formation of the poison is due solely to such causes.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

Report of meeting of October 10 — continued.

Dr. F. I. Knight read a paper upon a

CASE OF BRONCHIAL ASTHMA, APPARENTLY CAUSED BY A FOREIGN BODY IN THE LUNG.

Dr. E. W. Warren opened the discussion by the following history: A dispensary case I saw recently might bear somewhat on Dr. Knight's paper. The man was referred to me from the Men's Room as a case "subject to bronchitis with asthma." Examining his throat, I found he had chronic laryngitis, and on questioning him I learned that his asthmatic attacks were in direct proportion to the bad state of his throat, and that he had not the feeling common to chronic laryngitis — cough and sense of oppression around the throat. These attacks he had at intervals, between which he was perfectly free from asthma, and could do his work perfectly well.

Dr. H. Osgood: I cannot say that I fully agree with Dr. Knight in the position taken in regard to asthma being a symptom, simply because cases have come to me where asthma has alternated with dyspepsia, with epilepsy; and I have seen that usually it was simply hysterical, and was disposed of when the hysteria was disposed of. The fact that asthma following the lodging of a bean in the bronchial tubes — the bean having remained three or four days — seems to me perfectly logical; and I think we are very liable to overlook the good of our patients when we find an existing attack of asthma and lazily prescribe for the asthma without looking further.

Dr. Lyman: I don't understand that Dr. Knight considers that the bean swallowed twenty years ago is the cause of the present attack of asthma, but that he wishes us to believe that that excited inflammation or irritation in the person who was predisposed to asthma at that time, and that during the subsequent twenty years any irritation coming on would bring on another attack of asthma; in other words, that the person was predisposed to asthma, the first attack brought on by the lodgment of this foreign body. Having this predisposition she possibly would have had the same attack without any foreign body.

I was called to-day fifteen miles into the country to see an old lady whom I have attended off and on at intervals for a great many years. She had a very decided attack of asthma, though she never had had an attack before. She attributed it all to one spot low down in her throat on the left hand side. The curious part of it is that a fortnight ago she had a very severe fit of coughing followed by a swelling the size of an orange on that side of the neck. The cause of that I don't know. I could not make out that it was emphysema. I would not be at all surprised if she had other attacks of asthma in the next two or three years — confirmatory of Dr. Knight's position.

Dr. Blodgett: I have had an opportunity of studying two cases of asthma, one some time ago, the history of which was a little obscure, but would seem to conform to Dr. Knight's opinions in regard to the causation of asthma in persons who might not otherwise be susceptible to it.

The first case was that of a lady now some years dead, who, as I remember, after a severe illness from typhoid fever became very sensitive to the odor of ipecac; and being a physician's wife, her life became one of constant apprehension. Her home was in the country, and her husband had his medicines in some supply on hand This particular drug he kept in the stable, and whenever he filled the service bottle which he carried in the saddle-bags he retained enough of the powder in the clothes or on his hands to provoke asthma in the wife.

This occurred at any time of the year, and was apparently dependent upon some peculiar susceptibility to that particular drug in the form of dust in the atmosphere, even when in such minute quantity that no other person could notice it.

Another case is that of a gentleman with whom I am acquainted, who cannot take champagne without immediately having an attack nearly like hay fever, except that it occurs at any time of the year and is produced by no other known substance. Whether it is due to any peculiar susceptibility on the part of the patient to alcohol in general, I doubt. I don't know of any alcoholic substance except champagne that produces it; that causes intense difficulty of breathing, noisy respiration, wheezing, which is distressing to the patient and those about him. It is a regular spasm of asthmatic character and is accompanied by a great deal of distress. The attack usually lasts some hours. At times he has found relief from the use of bromide of potassium and bromide of sodium in equal parts.

Dr. Osgood: I would like to call attention to the annoyance I have had in ridding patients of that tender spot left at the bifurcation of the trachea after a severe attack of bronchitis. It is, I think now eleven or twelve years since I myself had an attack of bronchitis, — the first I ever had. The attack was not very severe; it ran its course in perhaps two or three weeks. I coughed incessantly, especially in the presence of dust, for six or eight weeks after that time; and I have never succeeded in ridding myself of this sensitive spot at the bifurcation of the trachea. At this spot the air strikes "butt end on," one might say. Probably the ammonia in the air, the dust, etc., strike that spot; and naturally a long time under favorable conditions would be required to rid one's self of the congestion in that spot.

Dr. Mason: It seems to me that such cases as Dr. Knight described would be called secondary asthma in the same way as those cases we see dependent upon gout or renal disease. The paroxysms of asthma in renal disease are very severe. But apart from all these secondary cases there are a great many cases of asthma in which, I think, no cause behind the paroxysm can be made out — an individual idiosyncrasy, because such patients are generally relieved only by the effect of climate. In one locality the paroxysms are frequent and severe, and in a suitable climate for that individual they are entirely absent for years; therefore I have no doubt that there must be many cases which would not fall into the class that Dr. Knight refers to.

Dr. Knight: I have been surprised, since my attention has been directed to this point, at the very large proportion of cases that I could trace back to measles or whooping cough. Heidsalter claimed 80% referable to attacks of broncho-pneumonia in one of these children's diseases. I have not found so large a percentage as that, but I am constantly finding cases the origin of which I have been ignorant of before, but when specially investigating them with reference to that point I have been able to trace them back to one of the diseases of children that is usually attended with broncho-pneumonia. There are other cases, where we get no trace of pulmonary disease, which are to be considered simply nervous. There is a peculiar sensitiveness of the reflex; and here, although it does not exactly pertain to this special study of the question, it may be well to say something in regard to the frequency with which the location of the exciting element is the upper air passages. Of late the medical journals are full of cases of asthma due to nasal obstruction, so that one would almost think that the nose was always guilty in these cases. But this is not the truth. The exciting lesion may be in the lung, in the nose, or the stomach, or some other remote organ.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON THEORY AND PRACTICE OF MEDICINE.

Stated meeting, December 18, 1888.

Dr. J. C. Minor read a paper on

THE TREATMENT OF THE ACUTE STAGE OF TRAUMATIC TETANUS.

He assumed, at the outset, he said, that the disease was the manifestation of a poison due to the tetanus germ and produced by the formation of ptomaines as a sequence of its germ origin. The discoveries of Nicolaier in 1884, and the subsequent investigation of Conli, Ratione, Rosenbach, Shakespeare, Brieger, and others had demonstrated that tetanus was a blood disease, infectious, inoculable, and having its origin in a bacillus, and that from germ cultures at least three poisonous substances or alkaloids could be separated, namely, *tetanine*, *tetanotoxine*, and *spasmotoxine*. The facts already elicited served, therefore, to substantiate the observation that in the treatment of tetanus we had to deal with a toxic condition. As to the prevention of the disease, the fact that a high temperature destroys the tetanus germ pointed to a possible local prophylaxis in the primary dressing of wounds.

The healthy working of a nervous centre, as had been well said, required two qualities which were equally necessary, namely, a power to act when called into play and a power of remaining at rest. In tetanus the latter was lost; inaction becoming impossible because excitation was constant. Even when the tonic contractions diminished in force, nervous energy accumulated during the remission, to be discharged later on as a paroxysm of increased tension, or spasm. The disease had a duration, in average cases, of three or four weeks. There seemed to be a definite limit to the production of toxic material, and the disease, having run its course, terminated in recovery under certain conditions. That these conditions were not often fulfilled, however, was shown by the mortality, which, according to Gowers, was nearly 90%; a rate that afforded sufficient warrant for better and more systematic methods of treatment. The fact that the disease was self-limited should encourage the hope of a successful treatment, provided the patient could be protected against its force for a definite period; and the mortality lists showed that this period consisted of the first and second weeks of the disease, the acute stage of tetanus. Recovery, therefore, depended mainly on the treatment during this time.

It was admitted that we could neither eliminate or destroy the poison of tetanus, and that the disease, once started, was beyond the reach of direct methods of antagonism. But when we considered the limitation of the disease and the fact that its activity was expended upon the cord and medulla, we were led to the inference that if we could so act upon the central nervous system that the force of the disease would be spent upon a benumbed tissue, if we could so modify these functions of the cord as to materially diminish its reflex excitability until the nerve-storm had passed, we should accomplish the most essential end of treatment. The problem before us, therefore, was how to put the cord and medulla "in splints" physiologically, to do this in the shortest possible time, and to maintain this condition of modified function for at least two weeks.

He did not believe it possible, except by profound anæsthesia, to obtain complete relaxation of all the muscles in the first period of an acute attack of tetanus without incurring as much danger from the remedies used as from the disease. The object of treatment was, not to abolish the manifestations of the disease, but to control them to such a degree as to maintain a relatively safe condition long enough for the disease to expend itself. The effect of the disease upon the muscular system was the main point of clinical significance.

Beginning with mere stiffness of the jaws and neck, the muscular tension increased, and subsequently involved the muscles of the abdomen and chest. At times a sudden increase in the degree of this tension occurred as a paroxysm or convulsive spasm, affecting the whole muscular system, producing opisthotonos or other distortions, and threatening death by asphyxia from tonic contraction of the respiratory muscles. It was to be noted that we had a period of remission and a period of exacerbation, with a certain rhythmic rise and fall of nervous excitability. This condition, during the first or acute stage of the disease, was one of constantly increasing violence; the spasms growing more and more severe, and the remissions shorter or less pronounced, until in from one to two weeks the disease culminated in a spasm of extreme violence that usually ended the case. The termination was not always fatal, however, as this might be the critical discharge, from which the patient, if he survived, would pass at once into the declining stage of the disease. Other causes of death might occur in the form of simple exhaustion, cardiac failure, or accidental complications.

It appeared, then, that if we could eliminate these convulsive paroxysms from the disease it would cease to yield such an extreme mortality, and the aim of our treatment, consequently, should be to prolong the remissions and modify or absolutely prevent the paroxysms. Now it was a well-known fact that when the functions of the nervous system were under the control of any agent that modifies them, they were not easily affected by any other agent; and in tetanus we had a toxæmia of which tetanine was the genetic agent. This poison produced a marked influence on the functions of the cord, increasing its reflex excitability, and if we attempted to counteract this effect by agents which depress the functional activity of the cord, we should find that ordinary doses produced little or no result, because the nervous system was already under the control of a powerful modifier of function. Hence toxic doses would be required to produce therapeutic effects. On the other hand, if we once obtained control of the nervous system, and maintained that advantage, by using our remedies in doses sufficient for the purpose, neither tetanine or any other agent would easily regain control of the functions thus modified.

Assuming that all remedies useful in the treatment of tetanus must possess the power of depressing the functional activity of the cord, the choice of remedies was not of more importance than the method of using them; and a poor remedy well used was better than the best of remedies inefficiently given. The main object being to intoxicate the spinal cord, so as to depress its normal excitability, it was evident that quite a wide range of drugs was at our service. The ones to which Dr. Minor gave the preference were calabar bean, chloral, and the bromides, with an occasional resort to chloroform. Chloroform, calabar bean, and chloral were the most efficient in the first period of the disease, and its crisis or climax; while the bromides, and also the salicylates, came into use during the declining stage.

In the first stage there were three indications to be fulfilled: (1) to lessen muscular rigidity; (2) to prevent convulsive spasms; and (3) to carry the patient through the crisis. The three remedies named were not equally adapted to the purpose in view. Chloroform, for instance, had only a limited use, but within its ranges of adaptation its action was unrivalled. It was to be employed in those cases of rapid development, occurring soon after an injury, in which the violence and frequent recurrence of the paroxysm threatened an early and fatal termination. Again, it might be necessary in cases of slower development, in which the disease, either from neglect or inefficient treatment, had been permitted to get under full headway. Under these conditions chloroform was of immense value. Its action was sure and rapid, and, carried to the degree of narcosis, it gave us complete control of the functions of the cord, abolished reflex excitability, and held the disease in check. This point attained, anæsthesia was to be continued long enough to transfer the control of the functions of the cord to some other and safer agent. During anæsthesia, then, we might administer chloral, calabar bean, or any remedy suitable for hypodermic or rectal use, and, after waiting twenty or thirty minutes for absorption to take place, suspend the chloroform.

Of the two agents mentioned, calabar bean was preferable, because its action was confined to the same field in which the tetanus poison operated, and it was the nearest approach to a physiological antidote to tetanine that was at our command. The variable character of the drug, as usually found, rendered it very unreliable in practice, however, and it was better to use the salicylate of eserine than to depend upon the solid extract of calabar bean. Chloral was not so good a remedy or so perfect an antagonist of tetanine, but it was a better drug, and practically of greater service. If calabar bean was used, chloral would be needed to supplement its action as the disease approached its climax; while if chloral was employed, the bromides would serve in the same relation. As to dosage, we should start with the maximum quantity, and be governed as to its subsequent increase by the effect observed upon the muscles. There was, in fact, no such thing as a perfectly safe method of treating the disease successfully. Verneuil advised doses of not less than one drachm of chloral to adults, and not less than four drachms daily. He considered it necessary to keep the patient in a kind of continuous coma at least for fifteen days and then to gradually reduce the amount of chloral daily. Twice, Dr. Minor said, he had succeeded in carrying cases to recovery with much smaller doses of chloral than this, and he believed that a semi-coma was not the best condition for the tetanic patient; smaller doses being equally effective if combined with or supported by other remedies. If about the end of the first week the bromides were given in addition, we should increase the action of the remedy without adding to its danger.

The use of calabar bean required far more care and attention to detail than that of chloral, and he recommended that the initial dose should not be less than half a grain of the solid extract. In its administration the object was to regulate the doses in such a way as to anticipate the condition of muscular tension, and thus prevent the recurrence of spasms. Under the use of calabar bean the periodicity naturally incident to the disease became more marked, because the remedy contributed to a more pronounced remission. Two grains might be sufficient to obtain this relief for two hours at a time during the first week of the disease, but three or four grains were usually required before the end of the second week; and the increasing violence of the disease would bring these doses closer together. As the crisis approached, the patient was in great danger from both the disease and the remedy, as both were cumulative in their toxic action; and at this stage both these dangers would be materially lessened by bringing chloral into use, and rapidly diminishing the amount of calabar bean.

During the period of increase of the disease, no matter what remedy was given, it was necessary to increase the dose in proportion to the work it had to do; and as the crisis came on we had to choose between the danger of an excessive dose of our remedy and an excessive dose of tetanine. We chose the first, because if toxic symptoms appeared we might antidote then, with the probability that the disease had spent its force at this point. To pass the crisis successfully signified recovery.

Having referred to the toxic symptoms of calabar bean, and their treatment by atropia and morphia, Dr. Minor said in conclusion that to use our remedies timidly was to permit the disease to kill the patient; to use them recklessly was to perform that office ourselves. The responsibilities assumed by the physician in the treatment of traumatic tetanus were precisely the same as those belonging to the surgeon who undertook a dangerous and difficult capital operation. As to the general management of these cases, rest and nourishment were so important in their relation to the successful issue of treatment, that no matter how careful and thorough the therapeutic methods might be, they would certainly fail unless the strength of the patient was properly supported, and his nervous system protected against undue excitement.

Dr. E. D. Fisher read a paper on

CEREBRAL SYPHILIS.

He said that his design was to treat principally of the disease of the vessels. In speaking of the pathology of cerebral syphilis he stated that in the tertiary stage the changes, whether in the form of gumma, or merely affecting the arteries, had unquestionably a specific character; and this led him to believe with Rumpf that the virus itself was still active, and that the changes were not due to the effect of a poison which had expended itself, but left its impress on the system. There was also considerable clinical evidence to substantiate this position.

Meyer considered as almost pathognomonic of syphilis a matting together of the dura and pia, with softening of the cortex, since in pachymeningitis from other causes this rarely occurred. Characteristic of the pathological changes of syphilis, as distinguished from atheroma, according to Heubner, was the fact that the larger arteries were alone affected in atheroma and that continuous tracts were involved; while occlusion occurred by thrombosis, and never by a narrowing of the lumen of the artery. The process consisted of a simple hypertrophy, resulting in calcification, there being no new growth. In syphilis both larger and small arteries were affected; the tendency being, however, towards the small and middle-sized vessels. We might, indeed, have thrombosis; but the marked lesion was narrowing and final occlusion of the vessels from the extension of the new growth internally, though rarely in the endothelial lining. The process was rapid, and differed from atheroma in that it was not continuous, but occurred in plaques. Arterial disease might occur entirely independent of gummata, and according to Down the vessels of the pia mater were very frequently involved, leading to softening and atrophy of the cortex.

Rumpf placed the origin of the arteritis in the middle coat of the vessels, and insisted on its character of granular tissue, similar to that found in all syphilitic growths. He admitted the difficulty of differentiation microscopically from atheromatous arterial changes, but believed that a special bacillus could here be found which was the same for the primary chancre and the late growth. A drawing of his representing syphilitic arteritis, in which the narrowing of the lumen was clearly delineated, corresponded very closely to a microscopical section of the basilar artery in a case of Dr. Fisher's, the history of which he related at the close of the paper.

In treating of the symptoms of cerebral syphilis he referred first to the psychical changes often present. While occasionally sudden in their onset, they were more often gradual, extending over months, or even years. There was noticed a general loss of mental power, the ethical nature seemed to suffer, the memory became weakened, and there was often a feeling of loss of power of performance. Insomnia, independent of cephalalgia, was one of the early symptoms, and always a serious one. It sometimes had associated with it somnolence or even stupor. Headache was perhaps one of the most frequent of all the early symptoms. If localized, however, it was always indicative of either a cranial bone or dura affections. It was very often absent when the lesion was situated in the arteries. The cranial nerves, and especially the third, fifth, and sixth pairs, were early affected, either partially or completely.

In arterial diseases unassociated with meningitis or tumor we often found the single paralyses of the cerebral nerves. Epileptic seizures were often present, and as the inflammation was usually diffuse they were more frequently general than localized. As regards the condition of the eyes, Dr. Fisher called attention to choroiditis and retinitis as indicative of an already existing affection of the cerebral vessels. A cloudiness of the disk, appearances of atrophied spots in the fundus, traces of a past retinitis or choroiditis, and gummatous enlargements, especially involving the terminal arteries, naturally aided in a positive diagnosis. Any interference with vision in a part of the field of vision or a general loss of acuity of vision in the young, should lead to the suspicion of syphilitic diseases of the cerebral arteries.

Paralyses of parts widely separated were strongly suggestive of syphilis. Also hemiplegias coming on without loss of consciousness, in which the paralysis was preceded by numbness and tingling, and gradually extended from the arm to the leg (especially if there had been previous irritability for weeks or months, loss of memory, and perhaps headache, confusion of ideas, and somnolence or insomnia), occurring in persons under forty, were probably specific.

DISCUSSION.

Dr. William H. Thompson said that the differential diagnosis of the various forms of cerebral syphilis was often a very difficult matter. In the first place, the question arose, Have we syphilis at all to deal with? The nervous symptoms alone were not sufficient to determine this point, and it was necessary, therefore, to make an examination over the patient's body. There was one mark which he regarded as of considerable importance in this connection, namely, tenderness on pressure at the junction of the sternum with the ensiform cartilage. It was almost uniformly present in syphilitic patients, and its diagnostic value was, therefore, very great. It being reasonably sure that the patient was suffering from cerebral syphilis, it must then be determined whether he had meningeal trouble, syphilitic tumor, or vascular disease. If the latter, we should endeavor to find out what particular form of vascular syphilis was present.

Syphilis was to be suspected in any case which was characterized by variableness and inconsistency; in which it differed from other forms of disease. In meningitis, headache was the most marked characteristic. In the second place, we had the gradual development of the symptoms. Thirdly, we should examine the condition of the vessels generally, and see whether they were soft and natural. In syphilitic tumor we had to rely very much upon the condition of the eye; and choroiditis was much more commonly present than retinitis. Sometimes with meningitis or tumor there were symptoms of insanity and epileptiform seizures.

About a year ago he had been called in consultation in the case of a lady well advanced in years, who was in a comatose condition. There was no evidence of kidney disease indicating that the trouble was uræmic, and pressure upon the sternum elicited groans from the patient, notwithstanding the coma. Suspecting, therefore, that the trouble was due to cerebral syphilis, he advised specific treatment, and the patient afterwards recovered. Yesterday, he said, he was called to see the husband of this lady, a man seventy years of age. About two weeks ago he began to be affected with confusion of speech, great irritability, and motor symptoms. These motor symptoms were not of a paralytic kind, but referable to inco-ordination. Depression alternated with excitement, and he had become quite emotional. He also had insomnia at night, and suffered from somnolence in the daytime. Dr. Thomson said he had very little doubt that this patient was suffering from syphilitic endarteritis.

Dr. L. C. Gray said that if we started from the prime anatomical lesion of syphilis, the round cell, we could get a better idea of syphilitic developments. It was a characteristic of the syphilitic round cell that it had an enormous vitality. It would live for a long time in the system, and would undergo retrograde metamorphosis without the formation of pus. As long as the cell caused no structural disease by its presence the prognosis was favorable. We did not yet know all the forms of cerebral syphilis, but some of them were sufficiently familiar. There might be, in the first place, a chronic interstitial encephalitis, scarcely distinguishable from that of general paresis except by its slower progress. Secondly, there was pseudo-encephalitis, in which there was great danger from sudden death. In other cases the disease attacked the arteries. Precisely what the lesion was we did not know, but there did not seem to him to be anything pathognomonic about the affection. Finally there was an implication of the meninges: (1) of the dura, causing headache; (2) of the pia, involving the cortex. In the majority of instances it was necessary to make the diagnosis from the conditions found in the brain, rather than from evidence of syphilis derived from other sources. Dr. Gray then proceeded to refer to certain groups of symptoms which he said he had formulated from his own experience, as indicative of specific infection, and enunciated in a paper which he read last year before the Philadelphia Neurological Society.

Dr. C. L. Dana said that the symptomatology of cerebral syphilis was very difficult; but from the contributions which had been made of late years to the subject we could now form a pretty correct picture of it. The pathology, however, still remained in a very unsatisfactory state. He could not believe that the lesions were due to Dr. Gray's round cell, since this anatomical factor was common to other conditions and affections. In the cases which he had seen there were four different forms of lesions, namely: —

(1) Local hyperæmia.
(2) Local meningitis and gummatous changes.
(3) Cranial root neuritis, or neuritis itself.
(4) Degenerative changes resembling those from other causes.

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ENDARTERITIS CHRONICA DEFORMANS AS A CAUSE OF SUDDEN DEATH.

IN recent issues of the *Nordiskt Medicinískt Archiv* and of the *Vierteljahreschrift für gerichtliche Medicin* Dr. Key-Aberg gives an extended review of the literature of this subject, a summary and critique of what has been published, with reports of cases and detailed necropsies that came under his own observation. The earliest authority cited, Lancisi. in his classic work, "De Subitaneis Mortibus," made public in 1709, defines *subitanea seu repentina mors* in very much the same terms as Aran in his thesis, "Des morts subites" of 1853, and Vibert in his "Précis de médecine légale." brought out during 1886.

From the standpoint of both physician and jurist verification of circumstantial and pathologico-anatomical facts in such events merits the utmost care. Valuable time may be saved the medical examiner by having a full account of the precognition. The causes of death are frequently returned incorrectly, and, still oftener, so vaguely as to seriously vitiate statistics (Christison). Suicide may so occur, or the fact thereof be so concealed, as to simulate a natural sudden death. In these cases an official examination of the body and circumstances is the best safeguard for the innocently suspected, even as it is a necessary means for the proper protection of the public.

The results given rest, in the main, upon an examination of official records (in Vienna) from January 1, 1879, to June 1, 1886; cases occurring in persons under fourteen years of age are omitted from compared figures. The proximal causes of sudden death due to vascular changes, in all save one (thrombosis or embolus) of the six hundred and thirty-four cases considered, are placed in five classes: (1) heart disease; (2) heart rupture; (3) aneurism of the aorta and branches; (4) rupture of aorta; (5) cerebral hæmorrhage. Of the above named number 73.5 per cent. were due to heart trouble, and 15.3 per cent. to intracranial bleeding.

From various quoted reports it appears that in five hundred and ninety instances of arterial aneurism (non-cranial) two hundred and twenty-seven were located in the ascending aorta, one hundred and ninety-two in the arch of that vessel, and a much less number in the descending and more distal portions. In one hundred and twelve cases of intracranial hæmorrhage, thirty-two occurred in the meninges, and eighty-one in the encephalon.

As to the influence of sex, it is found that in four hundred and fifty-one sudden deaths from heart disease, two hundred and ninety-one were of men, against one hundred and sixty of women. A similar relation appeared in seventy-two aneurismal deaths, fifty-seven being of men, and fifteen of women. Nevertheless, figures compiled by others make it probable that, intrinsically, both sexes are about equally liable to death as a consequence of pathologic change in the arterial system.

The element of age, also, is dwelt upon, as it may aid the oncoming of the final end by these morbid processes. The largest number of such male cases occurred in the fifth decade (forty to fifty). Death from chronic endarteritis, and bursting of intracranial aneurism, came at a proportionately later term of life with women than among men.

In some six hundred instances, observed with regard to social status, occupation, and sex, the figures given do not show that the number of cases had a clear and precise relation to the vocation of the individual. If any class of the community were specially affected. it was that of persons in good circumstances, and not the so-called laboring folk.

The different seasons of the year showed an unequal proportion of cases. Among the six hundred and thirty-four examinations, winter furnished one hundred and seventy-six deaths; spring one hundred and forty-four; summer, one hundred and forty-three; autumn, one hundred and seventy-one: these were in the temperate zone. Results might vary according to the climate whose inhabitants were under observation. Although such data seem to show an effect of stress from climatic conditions, research did not reveal any scientific basis in the hygrometric, barometric, or thermometric states of the atmosphere, on which to found a logical opinion.

From the foregoing statistical study the following inferences are drawn: (1) that 74.5 per cent. of the sudden deaths (after fourteen years of age), recorded in legal medicine, are due to arterio-sclerosis, variously localized in heart, aorta, and the cranial vessels, and of these, 59.9 per cent. appear to be caused by cardiac lesions; (2) that men are sufferers in a slightly greater proportion than women.

From our author's investigation it at least results that *chronic arteritis* or *mesarteritis* plays a very important rôle in the lethal evolution, although its relative influence is not easily demonstrable. Arterio-sclerotic changes, particularly about the aortic valves and in the coronal vessels, rank first in causal relation to sudden death by cardiac inability, often giving rise to what is termed heart paralysis. So-called heart rupture is frequently a bursting of an old aneurism. Examination showed, on the one hand, peripheral arterio-sclerosis and on the other, diffuse spreading of the aorta ascendens, leading to insufficiency. The breaking open of miliary aneurismata is again stated to be a very common cause of encephalic bleeding.

The Scandinavian author gives the results of microscopic examinations as to the state of heart muscles in regard to fatty degeneration and macular cartilagination. In several necropsied cases a marked feature was the complete obliteration of the openings of the coronal vessels, from a chronic endarteritic process, while in other parts of this vascular field was seen only a comparatively unimportant amount of sclerotic spots; on this stenosis ensued sudden cardiac paralysis, apparently as a direct consequence, through loss of nourishment (atrophy) and the hardening of small muscular areas in that portion of the heart so supplied, chiefly on the left side. From similar conditions gradually follows failure in function, finally becoming mortal. With normal coronal arteries was found healthy contractile tissue. The imminence of danger from paralysis appears to be in direct proportion to the rapidity of such necrotic vascular change. Fatty degeneration, though present, did not, of itself, seem sufficient to cause death. Lessened elasticity and contractility of the entire cardiac arterial system are evidently direct sequelæ of sclerosis in the finer branches and capillaries, which may involve the whole heart, though often limited to the coronal vessels.

Though it may be difficult or impossible to establish a logical connection between the aforesaid morbidity and cessation of function, yet we may consider as highly probable that a wide-spread hindrance of its own circulation stands in causal relation to the stoppage of the heart's action.

The study of such pathologic manifestations is otherwise of use in comparison with physiologic experiments being made to clear up unresolved features of this problem.

As illustrative of possibly causative means we refer to a statement (*Journal de médecine et de chirurgie,* April, 1888) to the effect that when a dog, subjected to chronic poisoning by alcohol, procreated, the female being healthy, a major part of the progeny died young, presenting lesions characteristic of alcoholic degeneration, such as thickening of cranial bones, early suturing, hepatic alterations, etc. When a bitch, whose mother was likewise experimented upon brought forth pups, the litter, for the most part, showed evidence of grave disease. The degenerative influence is thus as marked in the second as in the first generation. In the examination of a hundred alcoholics, only once did Lancereaux (1884) find arterio-sclerosis at all extensive.

Statistics, gathered in Vienna during five years, permit an estimate resulting in an average of one sudden death from atheromatous arteries to every 5700 inhabitants.

Inasmuch as the preceding personal investigation gives results somewhat at variance with those of other workers in this field, it is quite possible that evolution of the morbid processes in question may be modified by the climatic, racial, social, vocational, and individual environment. The etiologic influence of hereditary or acquired temperament and diathesis should be borne in mind when trying to find out conditions of disease, in order to attempt prevention by intelligent direction of personal life, looking toward dietetic and climatic hygiene.

The real as compared with the presumable value of some even well-accredited statistics, as previously set forth in our editorial columns of December 6, 1888, shows the importance of laying stress upon the Swedish writer's remark as to the necessity for exact observation of fact in the precognitions of medical examiners, or governmental officials, who investigate circumstances of suspected crime for legal purposes, or in order to render feasible the presentation of scientific data in tabular or other graphic form.

THE VITAL STATISTICS OF MASSACHUSETTS FOR THE YEAR 1887.[1]

The forty-sixth report of the vital statistics of Massachusetts, for the year 1887, comes to us improved in form and in tabular statement in several particulars.

There were, during the year, 53,174 births; 19,533 marriages; and 40,763 deaths, giving the following rates as compared with previous years, the population being estimated at 2.010.388, from the State census population of 1,942.141 in 1885: —

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[1] Forty sixth Report to the Legislature of Massachusetts, relating to the Registry and Return of Births, Marriages, and Deaths in the Commonwealth, for the year ending December 31, 1887; together with the Reports relating to the Returns of Libels for Divorce, and to the Returns of Deaths investigated by the Medical Examiners for the year 1887. Prepared by the Secretary of the Commonwealth, with Editorial Remarks by Samuel W. Abbott, M.D. Boston: Wright and Potter Printing Co., State Printers, 18 Post Office Square. 1888.

	Marriages to 1,000 Persons.	Births to 1,000 Persons.	Deaths to 1,000 Persons.	Excess of Birth-rate over Death-rate.
1887.	9.72	26.45	20 28	6.17
1888.	9.12	25 69	18.85	6.84
Five years ending 1885	9.3	25.1	19.8	5.3
" " 1880	8.0	24.8	19.2	5.6
" " 1875	9.9	27.6	20.8	6.8
" " 1870	10.5	26.1	18 2	7.9
" " 1865[2]	4.3	25.4	20.7	4.7
" " 1860	9.8	29.5	17.9	11.6
" " 1855	11.7	28.8	18.7	10 1

Our birth-rate and rate of increase are low as compared with the countries of Europe except Ireland and France. Our native birth-rate is decreasing: the foreign is greater than forty years ago but less than twenty years ago; and the mixed has nearly sextupled since 1849. The illegitimate births have increased from 366 in 1868 to 1158 in 1887, nearly equally divided between foreign and native mothers.

The divorces, 796, were 1 to 24.5 marriages for the year, an increase from an average of 1 in 32.7 in the ten years 1868–1877 to 1 in 27.7 in the ten 1878–1887.

Our death-rate compares with the average death-rate (1865–1883) of Europe as follows: — Northwestern Europe 20.5 (birth-rate 32.0); Southern Europe 25.6 (birth-rate 34.0); Central Europe 28.3 (birth-rate 37.6); Russia 35.7 (birth-rate 49.4): Europe 28.1; Massachusetts for the same years 19.56; England and Wales (1861–1880) 21.9.

The average death-rate of our last six census years ranged from 24.5 in Boston to 16.8 in Berkshire county. By ages the death-rate for the State for the year 1887 varied from 237.2 per 1000 under one year of age to an average of 10.07 for the ages twenty to thirty. The average age at death was 33.95: Suffolk county, 30.37: Barnstable county, 49.99. The deaths of children under one year of age were 20.89 per cent. of the mortality for all ages; under five 32.26; the averages for fifteen years being 20.94 and 33.88.

The infection-diseases caused 19.7 per cent. of the total mortality, as compared with 18.5 in 1886, 19.0 in 1885, 25.2 in 1878, and an average of 21.5 in the ten years. In the same time there has been a decrease in the percentage from constitutional diseases from 25.2 to 22.6, the difference being made up in the diseases improperly called local, the percentage from which increased from 34.7 to 42.7. The deaths from the chief infection-diseases are shown in the previous table, the population having increased since 1878 from 1,667,200 to 2,010,388.

	Diarrhœal Diseases.	Typhoid Fever.	Whooping Cough.	Diphtheria and Croup.	Measles.	Scarlet Fever	Small-Pox
1878	2,900	679	400	2,517	805	404	2
1879	2,560	617	302	2,293	19	850	8
1880	3,601	882	230	2,391	236	674	38
1881	3,203	1,072	217	2,383	230	367	47
1882	3,709	1,079	265	1,771	68	318	45
1883	3,100	890	137	1,621	321	575	5
1884	3,514	875	110	1,618	75	627	3
1885	3,249	768	181	1,523	313	587	19
1886	3,339	800	271	1,558	130	331	..
1887	3,713	922	232	1,628	455	504	3

Consumption caused 5,871 deaths (2,759 of males, 3,112 of females) or 14.40 per cent. of all the deaths for 1887, the rate per 1,000 living having decreased from 1.39 in the decade 1868–1877 to 1.02 in the decade 1878–1887. The rate for cancer in the same periods increased from 0.35 to 0.54 — both changes being without doubt in part due to improved diagnosis and better registration.

The fatality of "local" diseases was as follows: —

	Brain Diseases.[3]	Convulsions.	Kidney Diseases.	Heart Diseases.	Bronchitis.	Pleurisy.	Pneumonia.	Peritonitis.
1878	2,909	562	634	1,509	548	80	2,171	164
1879	2,946	612	711	1,608	690	90	2,647	226
1880	3,364	705	723	1,822	780	98	3,076	270
1881	3,355	691	843	1,937	843	88	2,967	284
1882	3,393	687	900	2,025	867	102	2,932	307
1883	3,562	757	987	2,153	934	164	3,045	339
1884	3,669	752	1,032	2,117	949	65	2,646	307
1885	3,894	721	1,128	2,227	1,131	138	3,468	350
1886	3,841	799	1,161	2,469	1,020	100	2,835	320
1887	4,257	861	1,146	2,837	1,212	104	2,348	387

During the same time deaths reported from dropsy decreased from 370 to 212 — an indication pointing to better diagnosis in later years.

There were 46 deaths reported from malarial fevers, which is about the average of the last eight years.

The medical examiners' returns indicate that 1,556 cases were investigated, of which 52 were deaths from homicide, 173 suicide, accident or negligence 748.

We are glad to receive the report a few months later than heretofore, and to observe that the extra time has been well spent in perfecting methods and increasing accuracy of results. We desire especially to note the valuable calculations of percentages of actual mortality by ages, but the time for preparing the tables and editing the report is still too short for all that might be done to advantage in analyzing the causes of death, and especially in work upon the original returns from the towns.

— The State Board of Health of Maine has issued a sensible and useful circular containing instructions for the public in regard to the management of contagious diseases.

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[2] Including the years of the Civil War

[3] Softening of the brain, apoplexy, paralysis, insanity, cephalitis, and unspecified brain diseases.

MEDICAL NOTES.

— Twenty-six nurses were graduated from the training school connected with Bellevue Hospital, January 8th. In the sixteenth annual report of the secretary, Mrs. Theodore Cuyler, it was stated that 1263 applications were made to the school by letter last year, and more than two hundred personal applications, but only sixty-four, the full number of the school's capacity, could be taken. The graduates now number three hundred and twenty. Three more of the nurses have recently gone to St. Paul's Home, in Rome; several have taken positions in Western and Southern hospitals, and there have been more than fifty applications from different hospitals for nurses of this school to fill responsible positions. Two nurses have gone to China in the last year, and four volunteered their services and did admirable work in Jacksonville, Fla., during the recent yellow-fever epidemic.

— A bill has been introduced into the Pennsylvania legislature, which provides for the appointment by the governor of a State board of medical examiners and licensers, composed of nine members from lists of names submitted by the incorporated State medical societies of this Commonwealth. The board are to examine all applicants for license to practice medicine or surgery. Any person will be entitled to examination on paying $10 and presenting proof of being over twenty-one years of age, and of having received a sufficient preliminary education, and a diploma from any legally incorporated medical college or university having authority to confer degrees in medicine.

— Dr. Paul Gibier, the French bacteriologist, who has been investigating the pathogenic germ of yellow fever in Florida, has, it is said, offered his services, without charge, to the government for further experiments. Dr. Gibier has been honored by the confidence of his government in investigations of the cause of cholera, and was decorated with the cross of the Legion of Honor for valuable contributions to the etiology of that disease. If his services are accepted by the government at Washington, he will ask for a secluded island off the Florida coast, where he can make investigations, without danger to any locality, with animals to be inoculated with the fever germs.

— "There are just sixty women who have taken medical diplomas entitling them to enter their names on the British register of duly qualified medical practitioners," writes a correspondent to the San Francisco *Call*. "Of these two are dead, and seventeen have gone to India, leaving only forty-one in Great Britain. Of the forty-one, twenty-one are engaged as lecturers or instructors in the London and Edinburgh medical colleges for women, or as medical officers to hospitals, dispensaries, or other institutions, leaving only twenty who depend solely on private practice."

— The Morton Hospital at Taunton, Mass., was dedicated with appropriate ceremonies January 3rd, an interesting address being delivered by Dr. S. D. Presbrey, president of the institution. The donor of the building is Mrs. Susan T. Kimball, of Boston. The house has been comfortably furnished throughout, the sanitary work being done by James T. Mahar, from plans furnished by W. R. Billings. Dr. F. August Hanson has been chosen superintendent of the hospital, and Miss Elizabeth Fanning, a graduate of the Massachusetts General Hospital school for nurses, will be the matron.

— The annual meeting of the Elliot Hospital trustees of Manchester, N. H., was held January 5th. The annual report of the treasurer showed the income receipts of the year to have been $3315.30, and the total receipts of the year to have been $13,861.94. The total disbursements of the year, including a payment of $10,080 for construction, were $13,861.94. The report showed the resources at the present time, reckoning the securities at their par value to be $75,112.10. The construction of the hospital building is going on satisfactorily, and it will be completed the present year.

— The physicians of the Salem, Mass., Hospital staff held their annual dinner lately at the Essex House. Dr. William Macy, the president for many years, declined to serve longer, and Dr. Amos H. Johnson was chosen in his place. Dr. George Z. Goodell was elected secretary.

— The building which Mrs. Henry Farnam has provided for the New Haven, Conn., Hospital as a memorial of her son, the late Dr. George Bronson Farnam, was — not with formal ceremony but in a practical way — dedicated to the cause of humanity, January 8th, by the performance of the first surgical operation therein.

— Prof. Von Nussbaum has been instructing and perhaps regaling the young generation of German surgeons by a brave pamphlet on "Surgical Mishaps." Among the instances is the following case of a peasant who many years ago was taken to the clinics of a great medical centre in order to be treated for multiple ulcers of both legs. On being examined on the operating table the right leg was pronounced to be curable, while the left was declared to be incurable and to require amputation. The amputation had scarcely been performed when the surgeons found to their great horror that they had amputated the wrong leg! Their chagrin was still increased when the right leg, which by accident had been saved, healed in a short time spontaneously.

— According to the *British Medical Journal*, Mr. Hurry Fenwick and Mr. Pearson Cooper, of the London Camera Club, have been working for some considerable time at photography of the human bladder. Various obstacles were in turn recognized and overcome, and they have now so far perfected their vesical camera and method as to obtain good negatives of the interior of "dummy" and dead bladders. They hope before very long to describe a method of recording the appearances and progress of diseases of the living bladder. The negatives are taken *per urethram* through a tube of 23 French calibre (11 or 12 English).

— The German societies of Brooklyn, N. Y., interested in the establishment of a German hospital, have appropriated about $10,000 from the regular society fund to the purchase of a hospital site in the 18th ward, near the routes of the Brooklyn Elevated and other city railroads. The twenty-seven parcels of land bought aggregate 50,000 feet or more.

— A number of newspapers have protested somewhat clamorously against the so-called "secrecy" policy of the new law of New York State regarding criminal executions by electricity. The suggestion forces itself upon the mind that possibly such newspapers foresee the loss of a present opportunity for catering to a depraved taste by reports which shall give their papers an increased sale. We are glad, therefore, to notice in the *Rochester Advertiser* a defence of the new law, which, as that paper points out, simply amends certain sections of the old law by substituting, as required witnesses to the execution, the agent and warden of the state prison for the sheriff or under sheriff, a supreme court justice in place of the county judge, the sheriff in place of the clerk and surrogate, and seven assistants in place of the others, and continues the two physicians, the ministers of the gospel, priests or clergymen, and twelve reputable citizens, as well as the prohibition that no persons other than those designated shall be present. The other provisions with regard to certification of death, etc., are altered only so far as is necessary to render them consistent with the principal amendments, while the humane and obviously proper change is made from permitting attendance of relatives at the execution, to allowing to be present after the execution at religous funeral service the immediate family and relatives of the deceased. The cry of "secrecy" has been raised and is continued in evident innocence of knowledge of the existing law, which is merely amended so as to make it conform to the new order of things.

— A. B. Ward writes thus in *Scribner's* of an important function of the doctor: — "The doctor who could not laugh and make me laugh I should put down for a half-educated man. It is one of the duties of the profession to hunt for the material of a joke on every corner. Most of them have so esteemed it. Garth, Rabelais, Abernethy, and a hundred or so more too near to be named,—what genial, liver-shaking, heart-quickening, wit-waking, worthies they were and are! To the son who loves her best, Nature reveals most her tricks of workmanship. He knows there is a prize in every package of commonplace and sadness, and he can find it — not only the bit of fun shining to the eye of a connoisseur like an unset jewel, but the eccentricity, the resemblance, the revelation, countless signs and tokens of the evanescent, amusing, pathetic creature we call the human. Heartless, grasping, irreverent? The deepest compassion for human ails, the broadest generosity to human needs, the highest respect for all that is strong, and pure, and holy in human lives, I have seen in the men who come closest to the mystery of life and the mystery of death, who read the naked heart when it is too weak or too sorrowful to hide its nakedness, who know our best and our worst, and are most of them wise enough to strike the balance. If they are cynics it is we who have made them so. We are the books out of which they learn their lessons."

— There are dangers incident to attending faith-cure meetings, even as a spectator. According to a newspaper report, Robert Watts, a young farmer, went to Springfield, Ill., the other day to attend a faith-cure meeting. Among the recent converts is Anna Delany, about twenty years old. Since her conversion she has become a regular attendant at the meetings, going into trances upon the slightest provocation. While in a trance she sometimes walks about the hall. At a meeting last week, the girl was in a trance as usual, and in walking up and down the aisle passed Watts, who was standing in the rear of the hall. As she did so she caught hold of his hand with a grip so firm that, although he struggled to get loose, he was unable to do so. Several men tried to stop the girl, but she continued walking, and Watts was compelled to follow her. It was four o'clock in the afternoon when Anna took him by the hand, and it was seven and a half hours before he regained his freedom. When she walked, Watts had to walk, and when she stood, he had to stand. Shortly before midnight Miss Delany fell to the floor. She was placed upon a stretcher, and in about five minutes let go her hold of Watts, greatly to that individual's relief. The young farmer lost no time in getting out of the hall. His hand was swollen, so that he was hardly able to use it. Miss Delany came out of the trance later, but has no recollection of what occurred."

NEW YORK.

— Dr. Alfred L. Loomis has been elected president of the New York Academy of Medicine.

— Dr. Carlos F. MacDonald, medical superintendent of the State Asylum for Insane Criminals, states in the twenty-second annual report of the institution, which has just been issued, that the number of days' work done by the inmates during the year was 21,264, against 15,067 for 1887. In regard to the treatment of the patients he says: — "It has seldom been necessary to resort to forcible measures in maintaining the customary order and discipline of the wards. There has been no instance of seclusion on account of maniacal excitement since May last, at which time we determined to discontinue, experimentally, that method of controlling disturbed patients. Complaints by patients of abuse or ill treatment at the hands of attendants have been few and unimportant. These, on investigation, have generally been found to be groundless, and usually the offspring of delusions of persecution or conspiracy entertained by the complainant. Such delusions are extremely prevalent among the criminal insane, and render their victims morbidly sensitive, intensely suspicious, and prone to harbor mistaken ideas respecting their condition and surroundings, and to misinterpret the conduct and motives of those about them.

— Thanks to the prompt and efficient action of the National Bureau of Animal Industry, through its representative, Inspector H. R. McLean, the attack of pleuro-pneumonia which has recently prevailed among the dairy cattle of Orange county is now well under control, only one new case having been reported for some days. Since the work of stamping out the disease commenced eight entire herds, many of them composed of the first class of cattle, have been slaughtered, and the sum expended by the Bureau has amounted to about $56,000.

— The United States steamer Yantic arrived at quarantine January 10th from Port-au-Prince, Hayti, with yellow fever on board. During the voyage, which commenced January 1st, four cases developed. On January 7th Corporal Rowe died, and when the vessel arrived in port, two of the patients, Cadet Bristol and Yeoman Keller, were convalescent; while the remaining one, Lieut. Miles, was still in a critical condition.

— It is announced from Albany that as the result of a competitive civil service examination, held December 27th at Castle Garden, New York, for the position of medical superintendent of the Immigrant Hospital at that place, Dr. Cadwallader C. Vinton has been selected for the post. There were four other applicants.

— Dr. A. E. MacDonald, the well-known alienist expert, for many years superintendent of the Insane Asylum on Ward's Island, and more recently general superintendent of the city insane hospitals, is said to have himself become insane.

Miscellany.

INFANTICIDE IN CHINA.

The *Sei-I-Kwai Medical Journal* gives the following facts concerning the value put on infant life in China: —

In a series of papers on infanticide in China read at a meeting of the North China Branch of the Royal Asiatic Society in Shanghai on the 14th May, 1885, Dr. Edkins and Mr. Balfour both allude to a bullock cart which perambulates the city, collecting the corpses of infants for burial. It is extremely difficult to obtain accurate information upon any subject in China, and the particulars given concerning the details of this charity vary with each informant, but the following may be taken as a fairly correct account of the matter. Except in the more respectable families with some money to spare, it is considered useless extravagance to bury with any formalities a child under ten years of age; and going lower in the scale we find that infants of the poor are often simply thrown out into the fields or canals, where they are at the mercy of dogs, instead of being properly interred. To meet this distressing state of things, at any rate inside Peking, there are two carts in connection with the Imperial Foundling Hospital, which make daily rounds to collect the little corpses for burial in ground set aside for that purpose. Each cart has its district, one for the East city and one for the West, which it visits daily. (Here it may be well to mention that some informants state that there is only one cart actually, which visits different parts of the city in turn.) The carts are each drawn by a bullock and driven by an old man — the object being that they should move slowly and reverently. They always take the right of way as being imperial equipages, and every one, even high officials, must yield the road to them — which most people are only too glad to do, especially in hot weather. They are the ordinary travelling carts with the cover, which in their case is black, and are known as "compassionate dry-land ferry," being an allusion to the ferry "in which Kwan-yin carries souls to rest." Outside each gate are established stations, generally in connection with a temple, where the bodies are brought by women to await the cart, which carries its pitiful freight to cemeteries outside the south-east and south-west corners of the city. These burial grounds are either imperial property or the gift of the charitable. The person bringing a corpse to the Niu ch'e Fang pays four hundred cash. The bodies are sewn up neatly in matting, or very occasionally enclosed in a rude coffin. They are not buried separately, but in a common grave. It occasionally happens that a cry reveals the fact that a little one is not dead, in which case it is taken to the Foundling Hospital, where its life hangs on a very slender thread unless it is speedily adopted. The most significant fact in connection with the institution is that *no examination is made of the bodies*, a startling proof that whether infanticide does or does not exist to any great extent, the government does not regard it as a matter of the slightest consequence. As for the quantities buried no statistics are obtainable, but the cart has been seen crammed full of these abortive attempts at increasing the population, even the rest at the back being piled high with the little packages.

THE ALLEGED INCREASE OF CANCER.

APART from the purely surgical interest attaching to the Morton Lecture on Cancer and Cancerous Diseases, delivered on the 26th ult. by Sir Spencer Wells before the Royal College of Surgeons, the lecture contained in its opening remarks some important statistical information, tending to prove that such diseases are on the increase in Great Britain and the United States. Thus in England, during the twenty-six years 1861–87, the mortality of cancer has risen from 360 per million of the population to 606 — an increase which Sir Spencer Wells truly remarked is far more than can be attributed to improved registration. In Ireland, although the total mortality does not show so striking an increase, yet when this is corrected by reference to the diminishing population of that country, the proportional increase per million is almost as striking as that for England, viz., from 1864 to 1880 an average annual rate of 676, and from 1881 to 1887 a rate of 873. In Scotland the proportion of deaths from cancer is larger than in Ireland. A like increase in mortality from cancer during the last decade is noted in the United States. It is obvious that improved diagnosis of malignant disease and greater accuracy in making returns do not suffice to explain the rise in these figures; and Sir Spencer Wells deserves thanks for strenuously urging the importance of more detailed statistical returns, especially as to the organs primarily affected, the ages and sexes of the subjects, and the districts in which the various forms of cancer most prevail. A question on this subject was recently put in the House of Commons. Mr. Ritchie's reply, that the medical officers of the Local Government Board were too much occupied to undertake the inquiry, implies the necessity for an improved system of returns made to the Registrar-General.

PROFESSOR VON BERGMANN ON CEREBRAL SURGERY.

THE number of cases in which a cerebral abscess has been successfully treated by incision and drainage is somewhat slowly increasing. The most recent addition is that of a patient shown to the Berlin Medical Society on December 5th by Prof. von Bergmann, described in the *British Medical Journal*, December 22. The patient, a workman, aged twenty-nine, had suffered from otorrhœa for eleven years. For six years he had been ailing, and, after admission, it was found that there was some fever, with evening exacerbations and shivering. Evidence of the intracranial mischief was afforded by the onset of headache and by a remarkable slowing of the pulse to 53 per minute. Finally, right facial paresis, with partial left hemianæsthesia and hemiparesis ensued, symptoms which confirmed the probability of a lesion of the left hemisphere affecting the sensory centres. The diagnosis of abscess of the temporo-sphenoidal lobe was made. The skull was freely opened, the dura mater incised, and the pulsating brain exposed. Having in two previous cases missed an abscess with the trocar, Prof. von Bergmann now prefers to incise the brain. In the present case pus, which was extremely green and foul, was reached only on the third incision; the finger could be introduced into a smooth-walled cavity. A drainage-tube was introduced, and the wound dressed with iodoform gauze. The subsequent progress of the case was very satisfactory: the drainage-tube was gradually shortened, and in three weeks the abscess cavity was entirely closed. The patient was shown to the society six weeks after the operation; he was then free from fever, and the facial paresis and other nervous symptoms had disappeared; a considerable portion of the bone removed at the operation had been reproduced, but the otorrhœa persisted, though in diminished quantity, in spite of local treatment by scraping away the granulations with the sharp spoon. Prof. von Bergmann commented on the danger attending the indiscriminate use of injections and irrigations.

Correspondence.

NO UNUSUAL SICKNESS AT ST. AUGUSTINE, FLORIDA.

ST. AUGUSTINE, FLORIDA, Jan. 8, 1889.

MR. EDITOR, — An examination of the appended record of death from the official register is sufficient evidence that rumors of unusual sickness in this city, during the past summer, or at the present time, are unfounded.

Very truly yours,
FRANK F. SMITH, M.D.

[The table received from our correspondent, which we regret not being able to publish, supports the assertion he makes. — ED.]

YELLOW FEVER ON U. S. WAR VESSELS.

BOSTON, Jan. 10, 1889.

MR. EDITOR, — Reflection upon the possible, or even probable, circumstances of the people on board the United States steamer Yantic, lately sailed from Port-au-Prince infected with yellow fever, gives rise to the idea that the following suggestive notes may be of interest.

1. It is believed that yellow fever has been proven to be non-transmissible by personal contagion (or contact of individuals), but is spread by means of *fomites* (clothes, etc.), and the air of its *habitat*, congenial, local conditions assisting.

2. Yellow fever, apparently, is brought to the

United States, and to its vessels of war or commerce, chiefly from Cuba (Havana) and Hayti (Port-au-Prince, and other places).

3. The bad sanitary conditions of the above-named localities, and the probable permanence of these conditions under the actual governmental control, indicate the advisability of obtaining a control that will cause and maintain a good sanitary condition in such places.

4. Yellow fever being once on board a vessel, many lives may be endangered or lost while that vessel is moving to a distant healthy port in a cold climate.

5. A place near, in point of time, to the foci of disease might be procured, where the men could be cared for, out of the ship, in the open air, possibly at an altitude sufficient to be cold, if necessary, and in good sanitary surroundings, the ship also being properly cleansed. This harbor might, at other times, be of strategic importance to the government.

6. Such a place might be a small island, or some secluded port in the West Indies, under sanitary control of disinterested, educated citizens of the United States.

7. Similar considerations may be applied to other dangerous infectious diseases.

Satya.

REPORTED MORTALITY FOR THE WEEK ENDING JANUARY 5, 1889.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infections Diseases.	Acute Lung Diseases.	Typhoid Fever.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	785	372	23.92	16.77	1.17	8.19	6.11
Philadelphia	1,016,758	366	118	10.80	14.58	2.70	3.51	3 78
Brooklyn	751,432	345	154	18.85	24.65	.87	9.28	2.61
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	164	55	10.37	9.76	3.05	4.27	—
Boston	407,024	177	55	10.08	15.68	—	6.28	1.12
Cincinnati	325,000	124	—	14.58	22.68	—	7.72	1.62
New Orleans	248,000	117	31	17.00	12.75	2.55	6.80	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	104	38	7.68	19.20	3.84	1 92	—
Pittsburg	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	24	8	16.64	—	4.16	4.16	4.16
Charleston	60,145	25	8	4.00	—	—	—	—
Portland	40,000	15	1	6.66	—	—	—	—
Worcester	76,328	22	6	13.65	18.20	—	—	13 65
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	—	—	—	—	—	—	—
Fall River	61,203	35	11	25.00	18.78	6.26	6.26	6.26
Lynn	51,467	23	—	13.05	17.40	—	—	8.70
Lawrence	40,175	12	4	8.33	8.33	—	—	—
Springfield	39,952	18	4	22.22	33.33	—	—	22.22
New Bedford	36.298	11	3	9 09	18.18	—	—	—
Somerville	33,307	11	—	36.36	18.18	—	18.18	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	10	—	—	—	—	—	—
Chelsea	27,552	—	—	—	—	—	—	—
Haverhill	24,979	11	1	9.09	9.09	—	—	—
Taunton	24,796	8	0	—	12.50	—	—	—
Brockton	24,784	—	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	6	—	16.66	--	—	—	16 66
Malden	18,932	7	5	14.28	14.28	—	—	—
Fitchburg	17,534	—	—	—	—	—	—	—
Waltham	16,651	6	2	33.33	—	16 66	16.66	—
Newburyport	13,839	8	1	37.50	—	12.50	25.00	—
Northampton	13,419	—	—	—	—	—	—	—
Quincy	13.336	3	—	—	—	—	—	—

Deaths reported 2434: deaths under five years of age 822; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping cough, erysipelas and fevers) 412, acute lung diseases 404, consumption 332, diphtheria and croup 166, scarlet fever 73, typhoid fever 42, measles 38, diarrhœal diseases 40, whooping cough 30, cerebro-spinal meningitis nine, erysipelas six, malarial fevers six, puerperal fever two. From diarrhœal diseases, New York 14, Brooklyn, Boston, and Cincinnati three each, Philadelphia, Portland, Nashville, Charleston, Lynn, New Bedford, Somerville, and Malden one each. From measles, New York 25, Brooklyn five, Boston, Fall River, and Lynn two each, New Orleans and Haverhill one each. From whooping cough, New York 14, Brooklyn nine, Baltimore three, Philadelphia and Washington two each. From cerebro-spinal meningitis, New York six, Cincinnati, Lawrence, and Somerville one each. From erysipelas, New York four, Brooklyn two. From malarial fever, New York, Baltimore, and New Orleans one each.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273 for the week ending December 22nd, the death-rate was 22.2. Deaths reported 3996: under one year of age, 915; acute diseases of the respiratory organs (London) 440, measles 316, whooping cough 108, diphtheria 62, scarlet fever 57, fever 42, diarrhœa 36.

The death-rates ranged from 13.6 in Derby to 33.8 in Wolverhampton; Birmingham 22.0; Bradford 19.5; Hull 18.1: Leeds 21.2; Leicester 23.5; Liverpool 26.0; London 22.0; Manchester 25 0; Newcastle-on-Tyne 19.0; Nottingham 21.9; Sheffield 19.9; Sunderland 26.5.

In Edinburgh 16.3; Glasgow 22.7; Dublin 30.9.

The meteorological record for the week ending January 5, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Jan. 5, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
Dec. 30	30.50	37.0	45.0	31.0	53	52		52.0	W.	S. W.		11	12		C.	C.			
" 31	30.03	44.5	51.0	38.0	59	67		62.0	S. W.	W.		12	9		O.	F			
Jan. 1	29.89	36.5	51.0	34.8	57	64		60.0	W.	W.		13	12		F.	C.			
" 2	29.92	38.0	44.0	33.3	60	52		56.0	W.	N. W.		9	6		O.	O.			
" 3	30.16	38.0	42.6	35.4	53	66		60.0	N. W.	S. W.		3	16		O.	C.			
" 4	30.18	40.0	52.0	36.3	75	73		74.0	W.	O.		9	0		O.	O.			
" 5	30.26	39.5	53.0	35.1	88	83		86.0	N. E.	N. E.		12	24		O.	O.			
Means for the Week	30.13		48.0	33.0				64.0											

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM JANUARY 5, 1889, to JANUARY 11, 1889.

By direction of the President, Captain ROBERT W. SCHUFELDT, assistant surgeon, will report in person to Brigade-General Wesley Merritt, president of the Army Retiring Board, at Fort Leavenworth, Kansas, for examination by the board. Paragraph 1, S. O. 4, A. G. O., Washington, January 5, 1889.

By direction of the Secretary of War, Captain R. W. JOHNSON, assistant surgeon, is relieved from duty at U. S. Military Academy, West Point, N. Y., and will report to commanding officer at San Carlos, Ariz., for duty at that post. Paragraph 10, S. O. 7, A. G. O., Washington, January 9, 1889.

LEAVE OF ABSENCE.

Leave of absence granted Major WILLIAM E. WATERS, surgeon in S. O. No 129, November 9, 1889, Department of the Columbia, is extended one month. Paragraph 9, S. O. No. 2, A.G.O., January 3, 1889.

DEATH.

Died in Upper Gloucester, Maine, January 10, 1889, Herbert Stanton Jordan, M.D., M.M.S.S., of Waltham, Mass., aged thirty years.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Surgeon-General of the Army to the Secretary of War, for the fiscal year ending June 30, 1888. Washington. 1888.

Atti del Dodicesimo Congresso della Associazione Medica Italiana Tenuto in Pavia nel Septembre, 1887. Volume primo. Pavia. 1888.

Fifteenth Annual Report of the State Commisioner in Lunacy for the year 1887. Transmitted to the Legislature April 11, 1888.

The Influence which the Discovery of Cocaine has exerted upon Ophthalmic Surgery By Samuel Theobald, M.D. Reprint. 1888.

Favorite Prescriptions of Distinguished Practitioners, with notes on treatment. By B. W. Palmer, M.D. New York E. B. Treat. 1888.

Is Astigmatism a Factor in the Causation of Glaucoma? By Samuel Theobald, M.D., surgeon to the Baltimore Eye, Ear and Throat Charity Hospital. Reprint.

A Topical Synopsis of Lectures on Animal Physiology. By Henry Sewall, Ph.D., M.D., etc., etc. Third edition, revised and enlarged. Ann Arbor, Michigan: Sheehan & Co. 1888.

Memoires de Chirurgie. Tome Cinquième. Commotion, Contusion, Tetanos, Syphilis et Traumatisme. Par le Dr. H. Verneuil. Paris: G. Masson. 1888.

Seventh Annual Report of the State Board of Health of the State of New Hampshire for the Fiscal Year ending April 30th, 1888. Manchester John B. Clarke. 1888.

Diagnosis of the Posture of the Child in Utero, by Palpation and Auscultation. By James O. Whitney, M.D., Pawtucket, R. I. Read before the Rhode Island Medical Society in December, 1888.

A Treatise on Headache and Neuralgia, including Spinal Irritation, and a Disquisition on Normal and Morbid Sleep By J Leonard Corning, M.D., etc., etc. Illustrated. New York E. B Treat. 1888.

Travaux d'obstétrique du Docteur A. Auvard, Accoucheur des Hôpitaux de Paris. Tomes premier, deuxième, et troisième Travaux Inedits. Paris. Lecrosnier et Babé, Editeurs. 1889.

The Waters of Plombières (Vosges). By Dr. Bottenhuit. London: J. and A. Churchill. 1888.

Alpine Winter in its Medical Aspects: with Notes on Davos Platz, Wiesen, St. Moritz, and the Maloja. By A. Tucker Wise, L.R.C.P. Fourth Edition. London: J. and A. Churchill. 1888.

The Modern Treatment of Diseases of the Kidney. By Professor Dujardin-Beaumetz. Translated from the 3rd French edition by E. P. Hurd, M.D., Newburyport, Mass., 1888. George S. Davis, Detroit, Mich.

Progressive Muscular Dystrophies: the Relation of the Primary Forms to one another and to Typical Progressive Muscular Atrophy. By B. Sachs, M.D. Reprinted from The New York Medical Journal for December 15, 1888.

The Vest-Pocket Anatomist (founded upon Gray). By C. Henri Leonard, M. D., etc., etc. 14th revised edition. Containing Dissection Hints and Visceral Anatomy. 193 Illustrations. Detroit: The Illustrated Medical Journal Co.

The Means of Effecting the Unity of the Medical Profession. Being the Anniversary Discourse delivered before the New York Academy of Medicine, Thursday Evening, November 15, 1888. By D. B. St. John Roosa, M.D., LL.D.

Questions and Answers on the Essentials of Medical Chemistry. Prepared Especially for Students of Medicine. By Lawrence Wolff, M D., Demonstrator of Chemistry, Jefferson Medical College, etc Philadelphia: W. B. Saunders. 1888.

Questions and Answers on the Essentials of Anatomy. Prepared especially for Students of Medicine. By Charles B. Nancredi, M.D., Senior Surgeon to Episcopal Hospital. With 117 illustrations. Philadelphia: W. B. Saunders. 1888.

Inflation of the Stomach with Hydrogen Gas in the Diagnosis of Wounds and Perforations of this Organ, with the report of a case. By N. Senn, M.D., Ph.D., of Milwaukee, Wis., attending surgeon to the Milwaukee Hospital, professor of the principles of surgery and surgical pathology in Rush Medical College, Chicago, Ill. From the Medical News, August 25, 1888.

Two cases of Gunshot Wound of the Abdomen, illustrating the use of Rectal Insufflation with Hydrogen Gas as a Diagnostic Measure. By N. Senn, M. D., Ph. D., of Milwaukee, Wis., attending surgeon to the Milwaukee Hospital, professor of principles of surgery and surgical pathology in the Rush Medical College, Chicago. From the Medical News, November 10, 1888.

Dose and Price Labels of all the Drugs and Preparations of the United States Pharmacopœia of 1880. Together with many unofficinal articles that are frequently called for as medicines or used in the arts. With an appendix containing a description of many of the new remedies lately introduced. For the use of pharmacists, students, and physicians. By C. L. Lochman. Third edition, revised and enlarged. Philadelphia. Dunlap & Clarke. 1889.

Placental Development. By Henry O. Marcy, A.M., M.D., LL.D., of Boston, U. S. A., President of the Section of Gynæcology, Ninth International Medical Congress; late President of the American Academy of Medicine; Member of the British Medical Association, Member of the Massachusetts Medical Society; Member Boston Gynæcological Society; Corresponding Member of the Medico-Chirurgical Society of Bologna, Italy; late Surgeon U. S. Army, etc. Reprint.

Forty-sixth Report to the Legislature of Massachusetts, relating to the Registry and Return of Births, Marriages, and Deaths in the Commonwealth, for the Year ending December 31, 1887. Together with the Reports relating to the Returns of Libels for Divorce and to the Returns of Deaths investigated by the Medical Examiners, for the Year 1887. Prepared by the Secretary of the Commonwealth. With Editorial Remarks, by Samuel W. Abbott, M.D. Boston. 1888.

Original Articles.

A CASE OF SEMI-SOLID TUMOR OF THE RIGHT OVARY,[1]

SIMULATING AN UTERINE FIBROID: OVARIOTOMY; CURE. HYSTERECTOMY FOR THE REMOVAL OF AN UTERINE FIBROID: CURE.

BY JOHN HOMANS, M.D.

In November, 1887, Dr. F. W. Webber, of Newton, asked me to receive a patient suffering, as was supposed, from the presence of a fibroid tumor of the uterus which was threatening her life. Dr. Webber had received a letter from the medical attendant of the lady, a surgeon in one of our most southern States. The substance of the letter was as follows. The tumor had been first seen by him about three years previously, and had presented the usual characteristics of a fibroid tumor. Ergot hypodermically had produced a decided shrinkage of its area; several months later the tumor had begun to grow again, and nearly filled the abdominal cavity; the point of greatest pressure was just below the ribs of the right side, where there was well-defined peritonitis. Ergot was resumed, but failed to produce any effect on the tumor, and finally laparotomy was suggested. From this it appears that the subcutaneous injection of ergot was practised more or less for three years. I found the patient to be a widow, thirty-six years old. She had had one child twenty-two years before. Her general appearance was healthy, her complexion pale, and she was somewhat emaciated. The abdomen was enlarged and its cavity occupied to a point above the umbilicus by a hard, lobulated tumor. No aortic sound or impulse was heard or felt. The enlargement was not symmetrical: there was bulging in both iliac regions, more especially in the right; two distinct bosses, or protuberances, were felt in the left umbilico-hypogastric region. The tumor moved with the respiratory movements and showed that it was not adherent anteriorly. Both flanks were resonant, the left more so than the right. On palpation the tumor appeared to be many lobed, some lobes moving with greater freedom than others. It was a solid, heavy-feeling tumor. There was complete prolapse of the uterus, which lay between the patient's thighs, and there was, of course, very large cystocele and rectocele. The os was a flattened dimple lying in the protruding mucous membrane of the vaginal wall. The meatus was concealed by the rolling forward and upward of the cystocele. The os and uterine neck could be replaced by force in the vagina, and when manipulated did not apparently have any connection with the tumor. On rectal examination a mass was found simulating the fundus in feeling, and a sound entered the uterine cavity of a depth of three and a half inches. When the vaginal walls were replaced in their normal positions, the pelvis was filled and the os immovable. There was a large, hard, somewhat movable mass to be felt in the hollow of the sacrum. Pressure on the tumor above the pubes was distinctly transmitted to this mass. She had some pain in the left loin, but had never had fever, and, she thought, no peritonitis. My diagnosis was that the tumor was a many-lobed fibroid with elongation of the uterine body, and that the tumor was probably uterine, springing from the fundus and not involving the uterine cavity, and that the procidentia had gradually produced a tapering of the body of the uterus. An exact representation of the state of things I fancied is figured by Cruvelhier in a plate shown me by Prof. Fitz.

The patient was desirous of being relieved of her burden, and was very calm, and said that I need not discuss with her the danger of an operation, as she had thoroughly considered the whole matter. I told her that the tumor was probably uterine, but might possibly turn out to be ovarian.

The operation was done on the 16th of December. An incision was made from above the umbilicus to the pubes: a small amount of bloody ascitic fluid ran out. On putting in a corkscrew to draw the tumor out I found it would not hold, and in the rent made by the corkscrew I saw that the tissue looked ovarian. A broad adhesion to the omentum was found and divided; a lobe of the tumor was found in the pelvis, and a broad pedicle adherent to the uterus was partially torn off and tied; the pedicle was very short, and a little of the right cornu of the uterus was included in the ligature. The solid, hard growth in the pelvis was adherent and had gradually pushed the uterus and vagina out as it had slowly increased in size. Although there had been extensive separation of pelvic adhesions no ligatures had been required. At the close of the operation the external genitals appeared normal, and there was no protrusion. On examination of the tumor, only one cyst as large as a lemon was found, all the others varied from the size of a pin's head to that of a filbert. The structure was in some places very dense. The tumor weighed eleven pounds. Its size could not have been reduced by tapping. No drainage-tube was used, and the patient's convalesence was very satisfactory until I tried to induce a movement of the bowels. This occasioned a great deal of pain without result, and about ten days later vomiting set in; all this time the temperature and pulse were normal. This vomiting continued more or less for ten days, and abdominal pain was more or less constant, but without distention or tenderness. For five days nutritive enemata were given and gradually a little liquid food. On January 5, 1888, twenty days after ovariotomy, the first satisfactory movement of the bowels followed the taking of ten grains of calomel in five two-grain doses. From this day she was comfortable and soon left St. Margaret's Home well. This case has seemed to me worth reporting on account of the difficulty of the diagnosis. The tumor, although composed of cysts, was practically solid. I was strongly tempted to reopen the abdomen during the days of obstinate constipation and vomiting, but I determined to wait until stercoraceous vomiting and some distention took place, and the result showed that I was prudent in so doing. I had had two cases of fibroid tumor of the ovary, but in both of them there was a tendency towards the formation of cysts, and in one of them all who had examined the patient in other cities thought the growth an uterine fibroid, but laparotomy showed the tumor to be ovarian; and so I hoped this one would prove, though I did not expect it would, and I was agreeably surprised.

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[1] Read before the Obstetrical Section of the Suffolk District Medical Society, Jan. 26, 1888.

REMOVAL OF A LARGE FIBROID UTERINE TUMOR BY LAPAROTOMY: CURE.

In March, 1887, Dr. Hammond, of Charlestown, sent to me a lady, thirty-three years old, unmarried, tall and stout, and seeking advice and relief on account of an abdominal tumor. She had always been well until four years ago, when she noticed an umbilical rupture caused by pitching hay. On examination of the abdomen, a large, hard tumor was found; the uterus apparently could be moved independently of the tumor. The abdominal girth was forty-three inches. The aortic impulse could be felt strongly through the tumor. Her menstruation was frequent, but not excessive. The tumor was movable. She had lost flesh in her face and arms, though she was stronger and stouter than most women. Her weight was 203 lbs. and was formerly 230 lbs. On May 10 I saw her again and found the tumor much as before; her weight was six pounds less. On December 2nd her weight had decreased seven pounds more, and as the presence of the tumor was annoying and prevented her from working, I suggested etherization to make out more fully the relations of the growth. During my different interviews with the patient I had said that I was ready to attempt the removal of the tumor whenever she made up her mind that her life was a burden to her, and she was anxious to undergo an operation of considerable danger. A few days afterwards she was etherized, and the tumor was found to be connected with the uterus, but the uterine cavity was not elongated, and it seemed as if the tumor might be removed without opening it. Her family and herself considered the question, and she came to me soon afterwards and said that she had carried the thing as long as she was going to, and desired its removal. On January 2, 1888, I operated. The incision extended from two and a half inches above the umbilicus to the pubes, and I took the opportunity afforded to cure the umbilical hernia. I tied and removed the adherent omentum, cut out much of the sac, and when the abdominal wound was sewed up I united the edges of the hernial sac also. The tumor was easily lifted by a corkscrew (a method I learnt from Mr. Tait), and a pedicle about four inches in diameter was secured by the serre-nœud. Although it seemed a beautiful case for intraperitoneal treatment, I did not dare to try it. The tumor sprang from the back and lower part of the fundus of the uterus, and when the pedicle was brought up to the abdominal surface, the left Fallopian tube and ovary protruded through the wound. It was impossible to unite the peritoneum and abdominal wall around the stump accurately, as not only did the ovary protrude but the uterine wall also, so close was the wire to the uterus; there was a stump but no pedicle; it was more like the position of a tightly sewn button on a coat. I removed the ovary and more or less of the tube, as they were in the way, and I feared would be strangulated or would be left outside the incision to be covered by granulations. I do not think that two drachms of blood were lost. The tumor proved to be a solid ovoid fibrous tumor weighing eleven pounds. The after progress of the case has been all that could be desired. On the 18th of January the wire was cut away, as it did not come off, and had in fact been broken. You may ask why I did not try Apostoli's method in this case. Because the tumor seemed to be pediculated, because Apostoli's method is slow, tiresome, and laborious, and in a case like the present one, where the connection between the uterus and the tumor was pediculated, it seemed as if electrolytic action could not lessen the size of this hard, dense tumor by passing through an electrode in the uterus, and thence through the abdominal wall. I mean to try Apostoli's method patiently; but when I have a tumor like the one I show you in a strong, healthy woman, I shall remove it by laparotomy if the patient earnestly desires me to do so. Neither of these cases were operated upon under the spray of carbolic acid. I abandoned the use of the spray October 24, 1887, after using it continuously for ten years. Since giving it up my results have been as good if as not better than before. During the past three months I have done thirteen ovariotomies without using the spray, and all of these patients have recovered. I think this is rather interesting, for my faith in the usefulness of the spray was unbounded, and now I have as good results without its use. This does not militate in the least against the antiseptic theory, nor take away at all from the great and deserved fame of Lister. All of us *believed* in cleanliness before Lister, but it was his mission to so impress the necessity of it upon the world that we should all *practise* it. It was the coincidence of the discovery of Listerism at the same time that abdominal surgery began to be generally practised that has made the latter so successful and its progress so rapid. Abdominal surgery owes its birth to McDowell and its development and progress to Wells and Lister. Other names should be mentioned, such as those of Keith, Kimball, Thornton, Tait, Clay, and many others that will readily suggest themselves; but McDowell showed the possibility of ovariotomy; Wells resuscitated and established it by reporting all his cases with an honesty and faithfulness that should be imitated; and antiseptic surgery made laparotomy successful.

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THE PATHOLOGY AND DIAGNOSIS OF SO-CALLED PELVIC CELLULITIS, WITH SPECIMENS OF SALPINGITIS.[1]

BY E. W. CUSHING, M.D.

Few diseases present a more constant and well-defined group of symptoms, both objective and subjective, than the inflammatory affection of the pelvic contents which is so well known under various names. In few diseases has the proper comprehension of the pathology, as derived from autopsies, been so long obscured by notions supposed to be founded on physical examination; in none has a just realization of the essential nature of the disease been followed by so brilliant and successful surgical measures.

Curiously enough, from early times there have not been wanting accurate descriptions of the diseases of the fallopian tubes, as found at autopsies, but these were supposed to be affected as a consequence of pelvic inflammation, rather than as being the essential and causative factor of the latter. It required the surgical genius and success of Tait and Hégar to bring the profession to realize that the diseased and swollen tubes, involved in a mass with ovaries, lymph, and perhaps pus, as described so accurately by Bernutz and Goupil in 1857, are verily the same lumps and "effusions" which we are all continually encountering in pelvic inflammations, and which under the teachings of eminent authority have been supposed to be outside of the cavity of the peritoneum, between the folds of the broad ligament, a supposed inflammation of cellular tissue, forming a so-called "pelvic cellulitis." Verily a case of *lucus a non lucendo.*

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[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Massachusetts Medical Society, Dec. 12th 1888

Perhaps it will be worth while to pause here a moment and enjoy the pleasure which delighted the pedantic Wagner, that of transporting ourselves into spirit of other times and observing how wise men have thought, in order to mark our own progress: —

> "Es ist ein gross Ergetzen
> Sich in den Geist der Zeiten zu versetzen
> Zu schauen wie vor uns ein weiser Mann gedacht
> Und wie wir's dann zuletzt so herrlich weit gebracht."

In the first place, it is often supposed that the ancients knew little or nothing of uterine diseases, had no works on the subject, and left all treatment of such affections to ignorant midwives.

Nothing can be further from the truth. The most important uterine diseases have always been and always will be clinically the same, although the treatment has improved with the knowledge of pathology, and the advance of surgery due to the introduction of anæsthesia and the enforcement of cleanliness.

How graphic and true is the clinical description of pelvic inflammation by the father of medicine:[2] "If the uterus is inflamed the menses are suppressed, and the vagina is mottled with many fine veins, like a spider's web, the fever is acute and causes delirium, and the menses when they reappear are scanty and unhealthy; if the patient eats anything she vomits, and pain invades the lower part of the abdomen, and the loins, and the patient faints, and shivers through her whole body, but the belly is sometimes hard and sometimes soft, and it is inflamed and swollen."

Then comes the description of the symptoms of subacute general peritonitis, which sometimes ensues, and the severe course of which is described; to this let me add the description of the results of local examination from Mercatus, the court physician of Philip II. of Spain:[3] "If the posterior and superior part of the uterus is inflamed, there is pain in the parts around the navel, and sometimes we see them raised in a swelling, but there is worse pain in the loins and the excrements are passed from the bowel with difficulty, etc." "If the fundus is inflamed there is acute pain in the lowest part of the abdomen, so that the latter seems unable to bear any touch even externally, and the uterus is usually drawn toward the inflamed place, and this accounts for its os and collum being turned the other way. It differs from an hysterical attack in the ardent fever and intense heat of the part. If the anterior part of the uterus is affected a difficulty of urination or a stillicidium ensues, and there is severe pain in the umbilicus and the parts near and below the latter, and if the finger is placed against the os uteri it feels to the touch hard, closed, hot, and retracted, especially if the inflammation is in the uterus itself or in its neck, and by the pain, hardness, and heat you will distinguish this condition from pregnancy.

But if the sides of the womb are inflamed the groins are tense, and the thighs are moved with difficulty and pain, and in some cases the leg on that side limps in walking, etc."

Then follow the symptoms of suppuration, with a graphic description of the severe cases and a description of the various ways in which the abscess breaks, the relief afforded thereby; the treatment with poultices,[4] sitz-baths, narcotics, vaginal injections, and vaginal suppositories, cotton tampons medicated with emollient and discutient decoctions, cupping and venesections, the latter only when the inflammation does not arise from abortion, nor from severe labor, or if the patient has not lost much blood.

"Universa etenim curandi phlegmones ratio in prohibitione ejus quod fit et ablatione ejus quod factum est constitit" ("For the universal method of treating phlegmons consists in preventing whatever is forming, and removing whatever has been formed").

If resolution does not come on, suppuration is encouraged by appropriate treatment until it comes within reach, when it is to be opened after the surgical method of Ætius, which consists in cutting the integument with a knife and opening the abscess with a hot iron, placing the woman in a position favorable for drainage and washing the cut three times daily.

I have brought here several of my books, in which the curious will find how various wise men have considered this subject before us. To understand them it is only necessary to remember that the uterus in general included the os externum or vulva, the vagina or sinus or cervix uteri, the os internum, now called externum, the collum or vaginal portion, as well as the tubes or cornua uteri, so called from the fancied resemblance to the horns of animals, situated on the uterus as the head; of course the tubes were well known before the description of Fallopius from whom they now take their name. The question naturally arises as to how much better off is a woman with pelvic inflammation now than was one similarly affected in the time of Philip the Second. Probably in acute cases not much better off, as far as medical treatment is concerned. The disease is the same, the therapeutics are the same, except that the surgical treatment is now bolder, surer, and better, under favorable circumstances and in the hands of experts.

But it may be said that these old fellows knew nothing of pelvic cellulitis; they laid all the trouble to inflammation of the uterus and its appendages; they did not know about the "areolar tissue."

That is where they were right, and where in modern times the greatest error has arisen. It is only within the last few years that really accurate views have again prevailed as to the nature of pelvic inflammation. That the fallopian tubes could be diseased and adhere to the ovaries and to other parts has long been known.

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[2] De morb. mulierum, lib. 2.

[3] De virg. et id. affect. et de uteri morbis, lib. ii. p. 606.

[4] "Make and apply to the lower abdomen a poultice of fœnugreum, linseed, wheat flour, boiled figs, and terpentine."

In his classical work, which I have here, Fallopius says distinctly that the tubes are never adherent to the ovaries unless as the result of severe disease of the uterus: —

"Nunquam observare potui meatus istos seminarios conjunctos cum testibus, nisi uterus male affectus fuerit . . Nam si in uno latere adfuit tumor aut cancer ejusdem etiam lateris testis ita contractus et colligatus cum dicto meato apparuit ut connati simul viderentur, at oppositi lateris sani scilicet testis non ita se habere semper visus est. Sin autem utrumque latus erat affectum uterque meatus pariter conjunctus cum teste arme reperiebatur, hocque bis aut ter ad summum vidi" ("I have never been able to find those seminal passages (tubes) joined with the testes (ovaries) unless the uterus was diseased; for if on one side there was a swelling or cancer the ovary of the same side appeared so contracted and adherent to the said passage (tube) that they seemed congenitally united. But the ovary of the opposite healthy side never seemed to be in such a condition. But if both sides were affected each passage was found by me equally joined to the ovary; and this I have seen twice or at the most three times").

De Graaf,[5] in his celebrated work, which I show here, figures fallopian tubes deformed and occluded at their extremities.

After de Graaf, and quoting his work and that of Fallopius, comes Ruysch, of Amsterdam, who in 1725 published at immense expense his treasury or catalogue of his wonderful museum. Fortunately I am in possession of a copy, which I have here.

He correctly explains[6] and figures the occlusion and dilatation of the fallopian tubes and their adhesion to the ovaries, due to inflammatory processes usually following difficult labors, and insists on the consequent sterility. He relates cases of puerperal fever with autopsies where the pelvis was full of foul matter apparently regurgitated or forced through the tubes from the uterus.

He insists on the frequency of inflammatory affections, and consequent great distention of the tubes, which he says he never would have believed if he had not made autopsies on so many women.

I will not take up any more time by quoting these old authors at length; but as they are overlooked in the modern references to the subject I have thought it well to present their books to-night. It must be remembered that these works were in their time great authority, and were continually studied and quoted; the successors of these authors in Europe have therefore always preserved a just comprehension of the nature of pelvic disease; and descriptions of the various forms of salpingitis are scattered through the works of the pathologists and gynaecologists of more recent times.

A very full bibliography of the subject is given by Prof. Wylie at the end of his admirable article on salpingitis in the recent "American System of Gynæcology," edited by Prof. Mann.

It is needless for me to repeat it here. It is sufficient to say that about 1884, by the writings of Marchal de Calvi, followed later by Nongt (1849), and yet later by West, Simpson, and others, the seat of pelvic inflammation was located in the areolar connective tissue which surrounds the cervix and fills out the broad ligament.

On the other hand, Aran insisted that the masses felt during life and found after death were connected with the uterus and tubes. In 1857, and later, and more fully in 1862, Bernutz and Goupil described and explained the real nature of pelvic inflammation with precision and accuracy; by the courtesy of Dr. Sinclair I present their work to-night.

It now seems difficult to understand why their observations did not have more effect on the profession, especially as the discriminating mind of Thomas[7] very early supported their views with the weight of his authority, while Emmett has always upheld the doctrine of "pelvic cellulitis," and I believe is still unshaken in his opinions.

The popularity of the works of the later author, the authority of his personal teaching, and the influence of the men who have studied under him, combined with the fact that the doctrine as taught seemed founded on the plain evidence of the sense of touch — all these causes conspired in this country to smother the truth as taught by Bernutz, until the results of the autopsies described by the latter were supported and emphasized by the results of hundreds, ay, thousands of operations for salpingitis, where the evident "cellulitis" could be felt to disappear from the "broad ligament" as the operator shelled out a pus-tube and ovary from behind the uterus.

It is not always easy to understand what is meant by pelvic cellulitis, but as far as I comprehend the various authors, and as I previously understood the subject myself, it is as follows: —

The course of cellular tissue in the pelvis is pretty well known. Something like a year ago I read before the society, in connection with the subject of tubal pregnancy, a translation from Prandl[8] of the instructive work of Schlesinger, who by injections of air and of liquid glue between the folds of the broad ligaments, near the tubes, showed that areolar tissue, loosely connected, ran between the folds of the ala vespertilionis up along the psoas muscle, inwards around the cervix and between it and the bladder, outward to the inguinal ring and downward between the rectum and vagina. Now this is precisely the course taken by the pelvic collections of pus in seeking for an outlet; and when on examination of a patient a mass is found laterally and posteriorly to the uterus, nothing is more natural than to suppose that the hard mass is in the thickness of the broad ligament, and thus entirely outside of the abdominal cavity, below the peritoneum. If the mass enlarges it would be held that the peritoneum lining the cul-de-sac of Douglas is lifted up, still leaving the "effusion of lymph" extraperitoneal; if after death the ovaries and tubes are found diseased, in many cases it was urged that these were bad cases and therefore fatal; that here the tubes or ovaries were affected because they also were between the folds of the broad ligament, and more or less connected, on one side at least, with this areolar tissue. That, however, most cases which are not fatal, and which recover without suppuration, get well because the lymph in the areolar tissue is absorbed.

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[5] A plate in the same work (De Graaf, "Opera Omnia," 1678), showing a tubal pregnancy copied from Vassalius, and properly interpreted, is interesting at this time. Ann of Gyn., Dec., 1888.

[6] Anatomical Observations, 43, 84, and 85, "Adv Dec." I. p. 6, Tb Ix. 15.

[7] Diseases of Women, 2nd ed., 1869, pp 380-381 *et seq.*

[8] Ann. of Gyn., Feb., 1888, p. 221 *et seq.*

If the pelvic peritoneum is inflamed, it is held to be by extension of the disease from its point of origin between the folds of the broad ligament, around the blood-vessels and lymphatics.

This, as I understand it, is the doctrine of pelvic cellulitis or parametritis. It is plausible, fascinating, but, as I believe, entirely false, except perhaps in certain puerperal cases, where a rent, extending at the side of the cervix right into this areolar tissue, may become septic like any other wound.

How then shall we explain the symptoms? If the mass or masses which we feel are not in the broad ligament, where are they? If not effusions in the areolar or cellular tissue, what are they? In answering this I will premise that I am well aware that in one sense the tubes and ovaries are between the folds of the broad ligament; but when speaking here of the broad ligament I mean that part of it which comes up to the limit of the side of the tube, or to the hilum of the ovary — regarding these organs as practically in the general cavity of the abdomen, like the fundus of the uterus itself.

I answer, then, that the mass as felt is in the pouch of Douglas, behind the broad ligament, or laterally at the side of the fundus uteri, or even sometimes on one side posterior and on one side anterior to the latter.

What is the mass? It is a distended tube, or tube and ovary, which may or may not be imbedded in a mass of lymph more or less recent. In bad cases there may be pockets of serum or of pus outside the tubes, but yet within the cavity of the peritoneum, above the latter, and roofed in by coils of intestine matted together and lined with lymph, which may form a strong and smooth membrane, a sort of sack for the abscess. If the areolar tissue is entered, it is secondarily while the abscess is finding its way out along the lines above described.

The diagnosis is to be made between this condition, with its various subdivisions, and the tumors proper and cysts which are found in the same locality.

These comprise — distended tube and its complications: hydrosalpinx; hæmatosalpinx; pyosalpinx; tubercular salpingitis; tubal pregnancy; abscess between tube and ovary surrounded by sac; serous collection in pouch of Douglas adjacent to tube and roofed in by adherent intestines; pus-pockets in the same locality as the last, but usually more thoroughly enclosed by a wall of lymph. Tumors or other possible conditions: parovarian simple cyst; parovarian papillomata; small cystic tumor of ovary; small dermoid cyst; fibroid tumors of uterus; fæcal collections; hæmatocele (intraperitoneal). Cellulitis proper: Periproctitis and perityphlitis; psoas abscess, descending; abscess around vermiform appendix, descending; infected wound of cervix and vagina. Inflammation of hæmatocele (extraperitoneal), or of tubal pregnancy (after rupture between the folds of the broad ligament).

The differential diagnosis of the above affections is often difficult and sometimes impossible without an exploratory incision. Very frequently two or more of them are combined; *e.g.*, the chief cause of suffering in a case of fibroid (myoma) of the uterus may be, and often is, a complication with pyosalpinx.

So also a tube in a state of moderate catarrhal salpingitis may, when nearly healed, become the abode of a tubal pregnancy, and this in turn may by rupture lead to a pelvic hæmatocele, and to severe attacks of pelvic peritonitis.

It would unduly prolong this paper to discuss elaborately the subject of differential diagnosis, but there is one point in the symptoms or history of the case which always leads us to suspect tubal disease, and that is the occurrence of *fever*. The patient usually can give a very definite answer to the questions, Did you ever have inflammation of the bowels? How long were you confined to bed by it? Did any matter form and break? Then there will be a history of repeated attacks of pelvic pain with fever, of severe and repeated suffering during the menstrual periods, of lameness, backache, etc. Usually or always in old cases there is a history of repeated and fruitless attempts at mechanical assistance: the patient cannot wear any pessary; Drs. A. B. C. and X. Y. Z. have tried to fit pessaries, but they all hurt her, and often she has been very ill after the womb was "raised up with an instrument."

The patient is said to have an adherent retroversion: "her womb is grown on to the back passage," or there is an anteversion or lateral version.

In severe cases there is a recent history of suppuration. The patient is found in bed, with the symptoms described by the ancient authors above mentioned, who, be it said, also describe at great length the hard masses which remain unless the "peccant" matters are properly "concocted" and eliminated. Or there is a fistula, continually or occasionally discharging pus; in the latter case there is usually an account of attacks of pain and fever whenever the fistula closes.

It is very difficult to describe exactly the feeling on bimanual examination; by repeated practice a certain familiarity with the pelvic organs and their relations is acquired which cannot easily be adequately conveyed in language.

The first thing observed is that the examination is painful to the patient. The uterus appears displaced: at first it seems retroverted, but by careful examination it is usually found that the fundus is anteverted and often drawn to one side, showing that the tender mass behind, and lateral to the uterus, must be something which does not belong there.

Now small ovarian tumors, dermoid cysts, and cysts of the broad ligament do not give rise to fever and are not usually painful to the touch; the same may be said of fibroid tumors when small and subperitoneal; tubal pregnancy can usually be excluded, especially in chronic cases; the tumors of simple hydrosalpinx are not fixed but movable, "pelvic cellulitis," *i.e.*, inflammatory effusion between the folds of the broad ligament, is practically a myth; pelvic hæmatocele has a characteristic history and course. Therefore, by exclusion we arrive at a pretty clear diagnosis of salpingitis and consequent localized peritonitis.

Especially is this opinion confirmed when another mass is found on the other side of the uterus, also tender, fixed, and chronic. The only double tumors likely to be found on both sides, except distended tubes, are double papillomata of the broad ligaments and double dermoids, both of which, by their lack of fever and tenderness, and by their steady growth, soon differentiate themselves from tubes, and require an operation which settles the diagnosis.

It is often desirable, especially before deciding on an operation for removal of diseased tubes, to examine the patient under anæsthesia; the relaxation of the abdominal walls, and of the muscular floor of the pelvis, and the consequent relief of the pelvic organs from pressure, wonderfully facilitate the examination, which is completed by a rectal examination, with two fingers in the rectum, the thumb in the vagina, and the other hand on the abdomen. I may here observe that great care must be taken not to rupture the pus-tubes nor to squeeze out pus from imperfectly occluded fimbriated extremities. Such an occurrence might easily be, and in fact has frequently been, followed by a severe or even fatal peritonitis.

In such an examination the first landmark to be sought for is the fundus of the uterus; just as in the corresponding operation for removal of the tubes, we start out from the fundus to determine their position, size, and attachment. In normal cases, especially under anæsthesia, the tubes can usually be felt at either cornu, forming, with the round ligaments, bodies which feel about as large as lead pencils, which can be rolled under the fingers, and moved freely about. After an attack of gonorrhœa their increase in size and hardness can often be observed long before acute perimetritic symptoms develop.

In catarrhal salpingitis, where the fimbriated extremities are occluded and the tubes are distended, they can be traced as soft, sausage-shaped bodies at the sides of and behind the uterus, sometimes quite large, but usually freely movable and not very tender to the touch.

In pyosalpinx, however, they are more apt to be fixed by repeated attacks of pelvic peritonitis; the tubes fall down behind the ovaries, as described so well by Wylie, and are glued to them; the left tube generally gets first into Douglas's pouch and keeps the other out; tube, ovary, and effused lymph form a mass of a size widely varying, from that of an egg to that of the two fists or larger; on one side this blocks up the pouch of Douglas and presses on the rectum and bulges down behind the uterus; on the other it may lie further forward, even at the brim of the pelvis, where it is readily felt as a lump in the iliac region. If the tubes and the neighboring adhesions contain much pus, fluctuation may be distinctly felt, with the well-known symptoms of pelvic abscess; more frequently the mass is hard or doughy; often it varies from week to week as pus and serum distend the tube and the surrounding pockets, and then are gradually absorbed again.

That is the real nature of pelvic cellulitis, and nothing is more surprising and convincing than to feel from the vagina the disappearance of a mass, supposed to be in the areolar tissue of the broad ligament, as the operator unrolls and shells out a brace of pus-tubes.

It may be said that there is nothing new in all this. Such affections of the tubes are described by Bernutz and Aran, by Kiwisch and Ed. Martin and Klob, and by many others. That is true; but what is comparatively new is the realizing sense on the part of the profession that the tubal affections are the origin and not the consequence of the pelvic peritonitis, that the former come directly from the passage of infection from the uterus into the tubes. From this last fact results a growing appreciation of the danger of infection from gonorrhœa and from sounds and instruments. The pithy remark of Credé, "that he who does not examine a woman does not infect her," is well worthy of remembrance, both in regard to obstetrical and gynæcological work. I purposely say little as to the causes and symptoms of the disease; are they not written in all the books? It is all an infection from one cause or another.

The immense importance of gonorrhœal infection in causing tubal disease is becoming more and more appreciated both by the profession and the public, and the erring husband who hereafter infects his wife will receive the execration he deserves. An important duty rests on the members of the profession, in duly impressing on men the danger of infecting their wives even after they themselves seem to be cured.

But it will be said that this explanation may suffice for old, chronic cases, which are operated on either for severe inflammatory attacks or for unendurable pain and loss of health. But how about the cases which are "resolved" and get well? How about a woman who "catches cold" after "local treatment" and runs through a course of cellulitis, where there is a mass in the pelvis as big as a child's head at term, the uterus fixed, the roof of the vagina hard? This cannot be a tube, neither is it an abscess, for it does not suppurate, but under expectant and soothing treatment it all goes away.

Now these cases are frequent, and in the first place very many or most of them do not get well entirely, but have a mass of adhesions and a disease of the tubes left, which cause sterility and future trouble. Some do get well, however, and bear children. What is such a mass? Is it not in the areolar tissue? No, the mass is inside the cavity of the peritoneum. It is chiefly one or more serous cysts, bounded by the peritoneum below, and above by adhesions and by coils of intestines. The hardness is caused by involuntary contraction of the muscles, and by tenseness of the cyst; possibly to some extent by an infiltration of the adjacent "areolar" tissue with œdematous fluid; the origin is in the tube and the cause is the "treatment."

Another group of cases too important to be more than mentioned to-night are the cases classed as cellulitis which followed labor or abortion. Here again every one, in discussing the subject, admits a puerperal "cellulitis" of the "areolar tissue," but how many such are seen post-mortem. Beside the cases of acute septicæmia, thrombosis, etc., when there is peritonitis what is found at autopsy? Just what Ruysch found (Obs. 43, 84, 85) — a collection of foul matter *in the pelvis*, the tubes diseased, and similar matter in the tubes and uterus. Most of these patients die; although in some the matters are shut out from the general abdominal cavity, a pelvic abscess results which is not between the folds of the broad ligament; if this matter is evacuated the diseased tubes remain, and may give rise to continual trouble afterward. In some cases a condition of comparative comfort results, but the diseased tubes can be detected long afterwards in very, very many cases in women who never recover their health perfectly.

Very lately, Tait has operated on a series of these puerperal cases. He reported eight in June last,[8] with two deaths. J. Price (and perhaps others) has followed him in this country, having operated, as he writes me, on seven puerperal cases up to the present time, with two deaths. In all the cases there was no sign of disease between the folds of the broad ligament; salpingitis and pelvic peritonitis were what was found.

I saw myself one of M. Price's operations on a woman with pelvic inflammation after abortion, and I shall never forget the hugely distended pustubes, large as Bologna sausages, which were shelled out, while the pelvis was full of stinking pus in pockets running up between the intestines in all directions; it was, as Ruysch said, "colluries humorum non sine magno fœtore." Here is a great field in the future for the snatching of women from almost certain death by an operation which, *if not deferred until too late*, offers a good prospect of relief.

[Specimens of gonococcus and sections of healthy and diseased tubes were exhibited under the microscope, and Dr. Cushing related his own experience in operating for inflammatory disease of the tubes eighteen times with one death.]

THE TREATMENT OF PELVIC INFLAMMATIONS.[1]

BY M. ROSENWASSER, M.D., OF CLEVELAND, OHIO.

In the management of cases of chronic pelvic inflammation, the accurate diagnosis is a highly essential element, without which the practitioner is entirely at a loss to know what to do and what to leave undone. The differentiation between the various conditions apparently identical to the touch requires a careful review of the history and symptoms, an experienced tactile sense and frequently repeated examinations at various intervals. If a careful examination were made under anæsthesia, in the exaggerated lithotomy position, whenever the diagnosis was not sufficiently clear, many false conclusions could be eliminated. There would then be fewer cases of pelvic exudations treated as uterine displacements by the use of the sound and pessary; the number of uterine fibroids, so gracefully and rapidly dispersed by electrolysis would in a degree diminish, and pelvic cellulitis would be relegated to its proper place in pathology as a phlegmonous inflammation.

If there is any disease in which a difference in treatment based on the social condition of the patient is allowable, it is in these pelvic troubles. The washwoman, the cook, the shop-girl, the seamstress, in short, women dependent for support on their own earnings, will consent to any operative proceeding which promises them speedy relief and the early resumption of the work which alone protects them against a pauper's lot. In these instances the early operation is a boon, and the long-drawn-out treatment under adverse circumstances an unwarranted makeshift. On the other hand, patients whose resources enable them to carry out strictly the demands of a palliative treatment ought to be made acquainted with this alternative before counselling radical measures, except where such measures are vitally indicated. While many of this class of patients are rendered comfortable from time to time by palliative treatment, and an exceptionally few may be permanently cured, it is to be regretted that some authors, through reports of incomplete cases, mislead the practitioner into the belief that the majority of such cases are curable without resort to surgical interference; that the hot douche, the supporting tampon, the application of iodine, and especially the use of galvanism, are the means by which the congestions are relieved, the adhesions softened and finally absorbed, the displacement rendered accessible to correction, in fact, the patient completely restored to health.

My own experience does not fully agree with this roseate view. The following cases, whose histories will be alluded to in outline only, are without doubt representative of numerous similar cases under the care of other physicians. They have one characteristic in common, and that is, their long duration, which renders them so much the more typical of the class now under discussion.

Case 1. Age 30. Married seven years. Mother of one child six years old Consulted me a few months after confinement. Complained of nervous disturbances, severe backache and great weakness, partly due to semi-monthly recurrent menorrhagia. Examination revealed a subinvoluted, retroverted uterus with chronic endometritis. The application of iodized phenol and the retention of the uterus in its proper position by a hard rubber pessary relieved the patient. In an unguarded moment, a brood of bacteria found access into the pelvis, causing a subacute pelvic peritonitis. When the patient recovered after an illness lasting four months, we (Dr. G. C. E. Weber being my consultant) found retroverted uterus bound by adhesion, and the ovaries large and exceedingly tender. After the uterus had been freed and replaced, the shortened uterosacral ligaments could be felt as sharp, rigid bands raising the vaginal vault in corresponding folds. The continuous traction and its reflex results not yielding as rapidly as the patient had hoped, she consulted Dr. T. G. Thomas, of New York, and remained at his private hospital for six weeks, where she underwent some local but mainly general constitutional treatment. She returned improved, but still ailing; she finally became pregnant and was confined last July. She is now in better health, but is still wearing a pessary, without which she is miserable, and is not yet cured. This being a case of chronic ovaritis with pelvic adhesions, of right belongs to what might be called the borderline between limited and general pelvic peritonitis, and represents the most satisfactory result obtainable by patient, non-surgical therapeutics.

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[8] Ann. of Gyn., June, 1888.

[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Mass. Medical Society, Dec. 12th, 1888.

CASE 2. Age 33. Married. Mother of three children, last being four years old. Was in good health until three years ago. Gonorrhœal infection progressively traceable from urethra and vagina to uterus and tubes, having caused a moderate pelvic peritonitis. Six weeks after recovery from acute symptoms, examination revealed, besides enlarged and tender ovaries, the presence of a round, smooth, fluctuating movable tumor of the size of a small orange, not specially tender, occupying the right side of the pelvis; examining a few days later only the thickened relaxed walls of the sac formerly filled with fluid could be felt, with increased sensitiveness of the posterior surface and fundus of the uterus. There was at no time after subsidence of the peritonitis any vaginal or uterine discharge, except her normal and moderate menstrual flow; nor was there any elevation of temperature. After the lapse of a few weeks, the tumor would refill and disappear as before, leaving some sensitiveness posterior to the uterus as high as the fundus. Occasionally a similar tumor would form and vanish on the left side. These recurrences were not connected with the menstrual function. Dr. Weber, consultant in this case also, on one occasion accidentally burst the sac by too strong pressure, but no harm followed. There is no room for doubt that we have here an unique condition of irregular, alternating hydrosalpinx, which discharges its contents into the retrouterine pouch. The fluid, not acrid enough to inflame, but only to irritate, gradually distends the occluded or highly constricted tube, and by the continually increasing pressure forces its way out either through a narrow angular canal or by rupture at some weak spot, which then is repaired, to be again broken when the sac is filled. The patient is still under observation and occasionally takes to her bed when she feels a new rupture has occurred. She has not been pregnant since her sickness, nor is she likely to be. Whether she will ultimately get well, or at some period require surgical assistance in case of suddenly developing peritonitis, time will tell.

CASE 3. Age 30. Married seven years. Sterile. Menstruation generally profuse. Copious leucorrhœa. Suspected infection. Three years ago, while under another physician's care, she took a severe chill; pelvic peritonitis developed, with formation of abscess in the left side of the pelvis in the course of a few weeks. The abscess burst into the bladder; before the abscess wall had collapsed Dr. Dudley P. Allen, consultant, made a counter opening from the vagina, and thus drained the abscess, which finally healed after a tedious and very painful illness. The patient has been about for a year, but is still a sufferer. There is quite a bunch of induration to the right of the uterus, besides the retracted cicatrix on the left.

CASE 4. Age 45. Married twenty three years. Sterile. Menstruation irregular, at long intervals. For past five years afflicted with vague pains in the pelvis and back, with considerable leucorrhœa. The uterus is enlarged, the vaginal vault tender on pressure, but no distinct tumor can be felt. Being otherwise a sufferer from chronic congestion of the liver, she has not laid much stress by her pelvic symptoms. Two years ago she was suddenly seized with violent pains, beginning in the pelvis and spreading rapidly over the entire abdomen. After recovering from the severe general peritonitis of three weeks' duration, a large, hard, sensitive mass filled the retrouterine space. Several weeks later, the patient found she was passing large quantities of offensive purulent material with each defecation. From this time forward she continued improving, but was still far from well. She made a trip to Germany with a letter to Prof. Aug. Martin, of Berlin, submitting the case to him for operation. In his reply he confirmed the presence of pyosalpinx with communication into the bowel, but had decided first to try the effect of curetting the uterus before undertaking abdominal section. The patient had improved so decidedly upon that treatment that he discharged her as cured. On her return I found her much improved, but the mass posterior to the uterus had not disappeared. During the past summer she was on several occasions compelled to remain in bed for days, once for a fortnight, when the pelvic mass had become tender and had rendered her unfit to be about. There has been no discharge of pus from the bowel during the past few months.

The last two cases have had a mixed treatment. The former required surgical interference to save her life, for I am convinced she would have died without drainage. I cannot understand the principle underlying Martin's treatment of the latter case. It was only palliative; for he could not expect the diseased tube to become absorbed or permanently drained, nor would the expected menopause have any influence on a pyosalpinx.

I now quote from E. H. Grandin's citation of Mundé, who completes his history of a case of pelvic peritonitis in this wise: "As soon as she was able to come to my office, I recommended the galvanism, and after about a month's treatment she was as well as ever, and was discharged last March, wearing a small, soft-rubber, Albert Smith pessary, which she thought gave her some support in walking. I gave her directions about the continuance of the galvanism, and have not heard from her since. Hence I infer that she is doing well, as she was of the kind of patients who would be sure to let me know if my treatment had not proved effectual." This to justify my assertion that incomplete cases are wrongfully reported as cured.

The results already attained by men prominent in the surgery of the pelvis warrant the belief that early operations in pyosalpinx will become the established rule; that hæmato- and hydro-salpinx must be treated according to the individual indications, expectantly or by removal; if peritonitis repeatedly threatens life or seriously impairs health. When we shall have become as familiar with the after histories of abdominal sections for ovaritis and pelvic adhesions as we are with the natural history of this variety of pelvic peritonitis, it may become possible to differentiate cases fit for operation from those unsuitable. Such cases are too often discharged from hospitals and completely lost sight of, when it is of the utmost importance to know what benefit finally was resultant from an operation not yet fully conceded to be justifiable.

ON A GOOD BREAD FOR DIABETICS.[1]

BY JOHN A. JEFFRIES.

All are now doubtless aware, thanks to Dr. Harrington (*Boston Medical and Surgical Journal*, March 22, 1888), that the so-called glutin flours are not what they should be, and will agree with me that the first thing in the treatment of diabetic patients is the avoidance of starches and sugars. It is therefore very desirable to get a bread, or more accurately a substitute for bread, which will satisfy the cravings of the patient for bread and yet fill the therapeutic indications. Experience seems to show that the craving is not for starch but for the form and taste of the bread; that is, for the sensations produced by such food in the mouth and nose by the senses of touch, taste, and smell, not for starch in the stomach and intestines. Were this not the case it would be impossible to satisfy the patient's wants.

It is my object to-night to show samples of bread which much more nearly fulfil the requisites of the case than any now in use in this vicinity. I have succeeded in preparing two kinds, one simply an improvement on those now in use but easily procured and inexpensive; the other a great improvement, but at present difficult to procure and expensive.

The first is made by using equal parts of bran and graham flour, or, put in accurate form —

One cup of graham flour; one cup of best bran previously scalded with one cup of boiling water; two eggs; German yeast or baking powder; salt to taste; one cup of milk or water. To be mixed with a *spoon.*

Such a bread contained 17.72% of starch, the equivalent of 19.68% sugar.

The second is made from the glutin from the starch factories ground to a fine flour. In the ordinary method of manufacture the glutin is fermented out and lost, but lately efforts have been made to separate it out by machinery for sizing. The glutin used by myself came from Messrs. Theodore Metcalf and Co., who hope shortly to have it in stock. The bread is made as follows: —

One cup glutin flour; one cup best bran previously scalded; one teaspoonful of baking powder; salt to taste; two eggs; one cup of milk or water.

To be mixed with a *spoon.* If the hands are used the result will be even more disastrous than in the making of ordinary bread. This bread is healthy, palatable, nutritious, and contains but 4.57% of starch, equal to 5.08% of sugar. The analyses were made by Dr. Charles Harrington.

I presume that this bread is practically the same as that described by Waltering (*Allgem. med. Central Zeitung*, August 4, 1888), whose article by accident did not come to hand till recently.

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[1] Read before the Section of Clinical Medicine, Pathology, and Hygiene of the Massachusetts Medical Society, Dec. 12, 1888.

REPORT OF PROGRESS IN GYNECOLOGY.

BY F. H. DAVENPORT, M.D.,

Assistant in Gynecology, Harvard Medical School.

PYOSALPINX AND ITS REMOVAL.

Among the recent advances in the field of gynecology belongs the success in the operative treatment of diseases of the tubes. With the lessening of the dangers of laparotomy, and the perfecting of the technique, such successes have become more frequent. Still the extirpation of tubes filled with pus cannot yet be classed among everyday operations. Therefore reports of a relatively large number of cases by the same operator are always welcome.

Gusserow[1] gives the history of thirty-one cases of laparotomy for pyosalpinx, which were operated on in the course of three years. Of these only one died (of septic peritonitis). This extremely good result is, in consideration of the value and difficulty of such operations, worthy of notice.

At the close of the detailed accounts of the cases, Gusserow gives the views as to etiology, symptomatology, and diagnosis which he has derived from them. As a rule it begins as an affection of the mucous membrane of the tube (usually starting in the uterus), followed by an escape of the contents of the tube into the abdominal cavity, which sets up localized peritonitis and leads to closure of the tube and retention of the secretions.

The trouble is often confined to one side; of the thirty-one cases both tubes were diseased only nine times. The ovaries are also almost always affected. The severe pain, the inability to work, and the constant danger of general peritonitis from bursting of the tube are sufficient indications for the removal.

The danger from the escape of pus into the peritoneal cavity during the operation should not be over-estimated. This occurred eighteen times in the thirty-one cases, and in only one instance was it followed by septic peritonitis.

In spite of the fact that the operation must be carried on deep in the pelvis, Gusserow, from fear of hernia, contents himself with a very small abdominal incision. He facilitates the removal of the tumor by having an assistant crowd it up from the vagina towards the abdominal wound.

EIGHT CASES OF TUBAL PREGNANCY WITH FATAL ISSUE.

Dr. E. Hofmann[2] gives the results of the autopsies of eight cases of tubal pregnancy as follows: (1) Six out of the whole number were over thirty years of age, one indeed over forty. (2) In only one case could it be definitely shown that she had never borne a child; there was doubt in one other case; all the others were multiparæ. (3) In two cases the right tube was the seat of the pregnancy, in six the left; and (4) in three in the middle portion of the tube, in the rest in the inner. (5) Only twice did a transmigration of the ovule take place, once from left to right, and once the reverse. (6) In half of the cases peritoneal adhesions of the tube were found, in half it was free. (7) In seven cases the rupture occurred in the second, and in only one case in the third, month of the pregnancy. (8) In half the cases there was an interval of from four to twelve hours between the appearance of the first symptoms and the death; and in the other cases the history does not show clearly that the death was sudden. There is therefore, in the majority of cases where a diagnosis has been made, sufficient time for operative interference. (9) In two cases the fœtus was already found macerated, which, taken in connection with the fact that in one the umbilical cord was twisted, warranted the conclusion that fatal hæmorrhage did not always occur simultaneously with the rupture of the sac or the tube, but followed later.

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[1] Archiv für Gyn., xxxii. 2.

[2] All. Wiener Med. Zeitung, 1888, No. 25.

REPRESSION OF MENSTRUATION AS A CURATIVE AGENT IN GYNECOLOGY.

Gehrung[3] in this article advocates the same idea which Loewenthal advanced a few years ago, and which was noticed in a former report, that in certain cases where the occurrence of menstruation was an obvious source of trouble it should be forcibly repressed. Gehrung came to the idea independently, and his method differs from Loewenthal's in that he uses the vaginal tampon, while Loewenthal relies on hot-water vaginal douches and rest in bed. At the first sign of menstruation he applies a tampon, which is allowed to remain forty-eight hours, and then if necessary renewed. He has never seen any bad effects from this treatment, but on the contrary the most marked benefit.

REMOVAL OF SUBMUCOUS FIBROID BY LAPAROTOMY.

Dr. Freund[4] gives an interesting account of an operation of this character. The patient was forty-five years old. For six years she had suffered from menorrhagia, the flow for several months previous having been alarmingly profuse. For four years there had been a foul discharge, and rapid growth in the size of the abdomen. Examination showed the presence of a tumor reaching to the umbilicus, the size and shape of a pregnant uterus of six months. The cervix was the length of the finger, very firm and thick, and the canal enlarged sufficiently to admit the finger, which could reach a large irregular mass in the interior of the uterus. No pedicle could be made out.

The method of extraction *per vaginam* was decided against on account of the size of the tumor, its broad attachment, and the length, thickness, and unyielding character of the cervix. Laparotomy was preferred, the incision of the uterus to determine the character of the tumor. If this proved malignant, total extirpation was to be carried out, if not the tumor only was to be removed.

A detailed description of the operation is given, the chief points of interest of which are the following. On incision of the uterus two tumors were found, which were peeled out, and proved to be simple fibromyomata, with no evidence of any malignant tendency. The uterine mucous membrane, which was much torn, was sewed to the uterine wall, drainage was provided for through the cervix into the vagina by iodoform gauze, and the uterine wound was sutured with silk. The patient recovered without any dangerous symptoms.

Freund says this method is adapted for cases of large multiple fibroids, which have no pedicle, and sink deep into the substance of the uterine wall.

THE VALUE OF HYSTERORRHAPHY.

Dr. C. C. Lee[5] discusses this latest operative procedure in an interesting article. He first gives a history of its performance by various operators, and then describes six cases in which he has performed the operation. Four of these were cured, one was a failure, and one was too recent to tell about the ultimate result.

As regards the justifiability and proper indications of hysterorrhaphy, points which have the most interest in the present stage of the operation, Dr. Lee says that ten or fifteen years ago the operation would have been indefensible; now it is clearly indicated in cases "where retroflexion of the womb with fixation causes untold suffering and finally ruins the patient's health; where pessaries cannot be borne, and would do no good if they could; and where it is absurd to remove the appendages, for they are quite healthy." Alexander's operation cannot come into question where there are adhesions.

As regards the technique, only a few points are referred to. The sutures should not be passed through the fundus, but the proximal end of the broad ligament, so as to encircle the round ligament and above through the supraperitoneal fat. Fine Chinese twisted silk is the best material for sutures. Adhesions should be separated with the fingers, those at the distal ends first.

REMOVAL OF OVARIES IN CASES OF RUDIMENTARY DEVELOPMENT OF THE DUCTS OF MULLER.

Dr. M. Strauch[6] gives the histories of two cases of the rare anomaly of complete absence of the tubes and uterus, with a normal or nearly normal vagina, where ovulation was accompanied by such severe pain and general disturbance as to warrant the removal of the ovaries. In the first case the result was a complete success, the patient being immediately relieved of all her symptoms. Careful palpation of the pelvic contents through the abdominal wound showed only a band the size of a thin lead-pencil running from one ovary to the other, without any indication of a prolongation downwards, or thickening in the middle.

In the second case the molimina ceased, but subsequently a hyperæsthesia of the abdomen developed, which rendered her a complete invalid.

Besides these two, there have been six similar operations performed by Peaslee, Tauffer, Langenbeck, Savage, Kleinwächter, and Martin.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY, AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

December 12, 1888.

Dr. John A. Jeffries presented a short article entitled

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[3] Am. Jour. of Obs., Nov., 1888.

[4] Centl. für Gyn., No. 19, 1888.

[5] Am. Jour. of Obs., Dec., 1888.

[6] Archiv für Geb. und Gyn., xv Band, 1 Heft, 1888.

A GOOD BREAD FOR DIABETICS, CONTAINING LESS THAN FIVE PER CENT. OF STARCH.[1]

Dr. A. N. Blodgett asked why Dr. Jeffries thinks it is so essential that this bread should be made with a spoon.

Dr. Jeffries replied: All bread, even ordinary bread such as everybody has, is much better not to be touched with the hand, and that is especially true of this gluten bread. This gluten, some of it is separated out for manufacture and used as shoemakers' wax in Germany. If you work it with the hand it is apt to be soggy and not rise at all; if you work it with the spoon it will rise nicely.

Dr. A. N. Blodgett: I noticed that the sample of bread passed around was extremely moist; is it always so?

Dr. Jeffries: It is not necessary to have it very moist. The cook who made that never made any of this kind before. I gave her my recipe, and this is the result.

Dr. A. N. Blodgett asked if Dr. Jeffries had made any use of this bread in the treatment of diabetes.

Dr. Jeffries: I have, in one or two cases. The patients liked it very much, and there was a reduction in the amount of sugar in proportion with it.

Dr. E. W. Cushing read a paper on

THE PATHOLOGY AND DIAGNOSIS OF SO-CALLED PELVIC CELLULITIS, WITH SPECIMENS OF PYOSALPINX.

Dr. J. P. Reynolds: What I have to say would be regarding pathological statements in the early part of the paper, and as that part of the paper was subordinate in importance and would not be of so much interest to the society as the more practical questions involved, I would ask not to speak at present, perhaps not at all.

Dr. M. Rosenwasser said: The valuable paper, accompanied as it is by the exhibition of so many specimens, requires no comment on my part. The contribution, the specimens, and the favorable results, speak for themselves. They are evidences of good judgment, scientific management, and without doubt of the keenest solicitude. While it is intended to limit the scope of my remarks to reflections on chronic pelvic inflammatory troubles, intimately connected with the subject under discussion, I beg leave to digress for a moment to question the advisability of saving the right appendages in the case of suspected gonorrhœal salpingitis. The right tube and ovary were bound down by adhesions, requiring considerable force to separate and unfold them; they appeared otherwise healthy. The object in dropping them into the pelvis was to afford the young wife the only remaining chance for a future pregnancy. One would *a priori* expect the bruised and wilted tube, with its raw, thickened walls, to be again enveloped in exuded lymph, its abdominal end occluded and the whole organ glued down to its old or some other neighbor in the pelvis. In due time, this tube, so disqualified for performing the function sentimentally reserved for it, will give rise to a series of symptoms of renewed disease which will render its removal as necessary as was that of its fellow. My ominous prediction is based on a paper by Lawson Tait in the May number of the *American Journal of Obstetrics* for 1887, entitled "On the Results of Unilateral Removal of the Uterine Appendages." In twenty-six unilateral appendages so saved, there was a return of the disease in more than half of the cases; only three subsequently became pregnant. These unpromising results followed although the appendages remaining had seemed perfectly normal.

Dr. Sinclair: I do not belong to the surgical section of those who treat disease of this kind. I have never operated, and consequently can say nothing at all in that direction. I have more or less acquaintance with the *medical* aspect of so-called pelvic cellulitis or peritonitis from the time when I was a student of Dr. Simpson, of Edinburgh, who first opened my eyes to this disorder, and I became deeply interested in it from the first. I think I was the first to describe a case of pelvic cellulitis, as such, in this city or State. The discussion on that occasion was very interesting. The late Dr. Jackson rather doubted the possibility of there being a sufficient amount of cellular tissue about the junction of the neck and the body of the womb with the broad ligament, to have allowed such an amount of infiltration as was described in that case. Suffice it to say that we regarded it as abscess of the broad ligament. It was within ten days after confinement and followed within about three weeks by a discharge of pus through the rectum. I think it was twenty-eight years ago. Since that time I have studied it as far as I could both from touch and observation, but I have never had an opportunity of seeing the post-mortem examination of such a case except in one instance. Probably twenty cases or more came under my observation as physician to the City Hospital, but this one showed most clearly what had already been written and published by Bernutz in his famous work on pelvic peritonitis and uterine diseases. That case was one of tubercular disease of the fallopian tube, and there were also, I think, some tubercles deposited in the interior of the uterus. At that time I became a convert to the Bernutz and Goupil theory, which was entirely contrary to the one received from Prof. Simpson. It seemed a revelation — like being born again — to accept the theory that this condition of things was intraperitoneal.

In the Boston City Hospital Reports, vol. i., there is a record of some twenty-one cases of pelvic cellulitis, or "periuterine inflammation," inasmuch as I think that term would cover the ground in these obscure cases better than "pelvic cellulitis." The history and the termination would conform much to those cases read by Prof. Rosenwasser. I have no doubt that the conclusion now reached by gentlemen at home and abroad — surgeons and laparotomists, that the best treatment of a large number of the cases has been discovered in the removal of the diseased organs, which are generally the ovary or the fallopian tubes — is the correct one. There are certain cases, however, of true *pelvic cellulitis*, but those generally follow confinement and are septic in their nature.

We have a mild form of pelvic peritonitis frequently met with in girls, — recurrences of sharp pain; they are "laid up" for a day or two, and these recur and keep recurring, but very little attention is paid to them; still they may mean a great deal.

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[1] See page 87 of the Journal.

The subject is immensely broad. I do not know of another in the whole domain of gynæcology that is wider and more interesting; and, as I said in an introductory note in my paper in the Hospital Reports. I believe that 50 per cent. of the disorders of women which we come in contact with are due to some kind of peritonitis, some localized pelvic peritonitic trouble. I know that at the time I was laughed at for such an assertion, but I think, instead of 50 per cent., I should set it higher to-day.

Dr. S. C. Whittier, President of the New Hampshire State Medical Society, said: I have been very greatly pleased with Dr. Cushing's paper and the explanation of the cases that he has given us. But one thing which I think should impress our minds more than perhaps almost any other is the getting away from, or losing sight of, the idea of pelvic cellulitis. I have come pretty thoroughly to the belief that we really get salpingitis instead; and I now should never examine a typical case of what we called "pelvic cellulitis" without expecting to find salpingitis, and I don't think I should probably be mistaken.

I have had quite an extensive opportunity, under the guidance of Dr. Cushing, of examining almost all of the patients from whom these specimens were removed, and have seen a great many of his operations, and I certainly have been very highly edified and instructed.

Dr. John Homans: I came here to listen to Dr. Price's and Dr. Cushing's papers, and did not intend to make any remarks. I can only say that I am much interested in this very large display of specimens of diseased tubes; and it brings the fact to the front again that we owe this to Mr. Tait, that he first called our attention to this condition of things.

A few weeks ago I had a case much like some of these. The woman had been for seven years an invalid. She was the wife of a railroad engineer unable to employ a servant. She was not able to do much, and had been a good many months in the hospitals. Life was not a burden to her, but still hardly worth living without being able to do anything. On examination, I found in the left iliac region a bunch about as large as a pear, and at the operation I had to go through the mesentery to make an opening into the sac, which I finally, after considerable difficulty, removed. It was the left ovary and tube. She had a drainage-tube inserted and did very well. The other day, several months after the operation, she called to see me: she was able to work and enjoy herself.

It seems to me that the treatment by laparotomy is the right one. The disease has been going on for some time in many cases, and it is pretty hard to keep a person waiting who is unable to do anything.

Another case I operated on with considerable hesitation, because it was my first operation. It was one of those abscesses connected with the rectum, and I feared I should have a fæcal fistula. The uterus was displaced to the right and fixed, and when the abdomen was opened I found a tumor bulging out on the left side beneath the broad ligament, beneath the peritoneum, and with the intestines above it. I aspirated, enlarged the opening, put in a glass drainage-tube. The woman was better for the time being, but whether it was a permanent cure I do not know. No fæcal fistula followed.

Of course all these improvements come from the enlarged practice in ovariotomy. As the operation was introduced by Sir Spencer Wells, and the familiarity of the abdomen obtained by ovariotomists, surgeons gradually became more confident, until a person of Mr. Tait's temperament and courage and decision came along and discovered this condition of the tubes and ovaries.

I think Dr. Cushing is to be congratulated on the results of his efforts; it is a remarkable series of cases and a remarkable showing.

Dr. R. H. Fitz: I have very little to say in this matter. The question perhaps that first occurs to me is this: what happens to these cases if not operated upon? Until the removal of acutely diseased tubes the patient was let alone and went under medical treatment; that has already been referred to. When the first of these tubes was brought to me it was a surprise to me that in making post-mortem examinations it was a rare thing for any such condition to be seen; the inference being that if no operation was performed the fluid was gradually absorbed, the pus became absorbed, the tubes thickened, and one had in the person who got beyond the climacteric simply adhesions and thickened tubes. The amount of suffering which these women may have undergone while this process was being brought about was something that I had no idea of at the time; and it seems to me that this is the natural history of this class of cases; if the attacks are not so violent as to indicate a spreading peritonitis and demand immediate operation for the relief of that condition, they will generally, the majority of them, dry up, and adherent masses will remain, which evidently will give rise to very little disturbance. But it is very evident from the experience of Dr. Cushing, and familiar to other operators, that a great deal of suffering does arise until that result in the history of the process is brought about; and that the effects of these operations are very striking in relieving, as far as the present evidence goes, these serious disturbances.

With regard to the more immediate subject before us — the relation between these pelvic abscesses and tubal inflammation and cellulitis, so called — there is no question that a pelvic cellulitis does occur and that it results in the formation of pus, but that it gives rise to any considerable tumors limited to the subperitoneal connective tissue seems to me not very likely. The course of pelvic inflammation is either forwards or backwards, and one has a long suppurating track insisted of sharply defined circumscribed tumors that are represented by the tubal inflammations, and also by the cases of circumscribed peritonitis, which are so generally of tubal origin.

I quite agree with Dr. Cushing that the great majority of these cases are not cases of abscess in the pelvic connective tissue, but are cases either of dilated inflamed tubes or of circumscribed peritonitis.

Dr. J. P. Reynolds: That is a point which I wish to bring up a little. I don't differ perhaps at all from the statement of the general fact that a vast number of cases which have been considered to be the result of inflammatory processes in the peritoneum are really cases of these inflamed organs, or of the tube, containing confined serum or pus. To that statement no criticism can be made; but I should not want to believe that anybody has seriously asserted that such collections of pus in occluded tubes were the result of inflamed areolar tissue. Septic inflammation in the lying-in period, for instance, ordinarily follows the track of the subareolar tissue, that is, where the investing membrane lies loosely attached to the uterus, but in the two lateral borders is a frequent seat of such inflammatory processes, less frequently on the anterior and posterior surfaces, because there the investing peritoneal membrane is extremely closely attached to the uterus. It is an old matter of anatomical statement that the areolar tissue extends over the peritoneum, over all the viscera, and inflammatory processes occurring in it are only very exceptionally limited and converted into circumscribed disease; but that ordinarily all the various degrees of inflammation, sometimes extending over a very large portion of the abdominal surface occur, seems to me to be a fact not at all conflicting with the statement that a great many cases have been mistaken for inflammation of that tissue, and perhaps involving the peritoneum over it, when really they were inflammations, as I understand the writer of the paper to urge, of the subjacent organs and of their interior lining, resulting in the formation of masses of liquid. I don't say that it is necessary to imagine that old pathologists were so much in error when they stated that inflammation inside the fallopian tube was the result of inflammation of the areolar tissue over it; but that there is such tissue capable of doing vast mischief, and does constantly in the lying-in period, seems to me to be a fact we must still admit. I don't think that it conflicts at all with the statement which underlies the history of these cases, that in the great majority of cases it is an internal inflammation occluding the tubes and resulting in hydrosalpinx or pyosalpinx.

Dr. F. L. Burt: In many cases belonging to this class, the diagnosis is of considerable importance, although in some cases it may not be really so necessary, because if we are certain that an operation must be performed, we are equally certain of being able to clear up the whole matter at that time. As a point by way of an aid to diagnosis, I would say a few words, which might be of interest in regard to the use of electricity in these cases. The benefit to be derived from this agent will depend upon whether there is or is not pus present as a result of the pelvic inflammation; that is, whether an abscess or not.

To illustrate this I will briefly relate the facts concerning two typical cases. A woman of forty-five years desired to enter the hospital, but I could not admit her, as there seemed to be no operation indicated, yet she was sadly in need of treatment, as she was a complete wreck. Examination showed the results of an old pelvic inflammation, and the outline of the uterus could not be made out at all. The condition was one which would most usually be diagnosed as fibroid, but there was no such tumor. I offered to treat the case at my office as a free patient. One application caused such an amount of absorption that I could easily outline the uterus after it, and with six applications there was such relief that she was able to resume work. The second case was diagnosed as fibroid which had considerable pain and flowing associated. The removal of ovaries and tubes was considered. As a preliminary treatment I applied galvanism, positive intrauterine. The result was to increase the pain and not to stop the hæmorrhage in the least.

Previous experience led me to doubt the diagnosis, and the operation revealed a double pyosalpinx. A private case of which I show the specimens, well illustrates this latter type. A lady, of fifty years had suffered during the past six years all the tortures resulting from a pelvic inflammation. There was treatment at the beginning for pelvic inflammation, and what was called a cure resulted. Quite recently she was told that she suffered simply from nervousness. She was referred to me by Dr. Manuel for treatment. I found it to be a typical case of pelvic inflammation, and the pelvic organs were joined in one solid mass, but the existence of pus was uncertain.

I began with galvanism, but it did not help in any way, and the pains grew worse. The reason you will see, for a little later I did a laparotomy, and the result was the removal of the double pus tubes which I show you. The case has recovered perfectly. Another specimen which I will present is that of tubes and ovaries from a lady aged thirty-eight, who had a fibroid about the size of a twelve weeks' pregnancy. She had flowed constantly for three weeks, and was much reduced. Some might consider this a suitable case for electrical treatment, but I did not so judge it from the fact that there was evident disease of the tubes, and the ovaries were displaced, adherent, and very tender. She had had supporters used for a considerable time, only to aggravate the trouble. I admitted her to my private hospital, and on the following day removed the tubes and ovaries. There was double hydrosalpinx, both ovaries were enlarged, cystic, displaced downwards and backwards, and adherent.

Their removal was a necessity both to relieve the pain and to cause the uterus to diminish in size. The recovery from the operation was extremely rapid, and she was up in fourteen days.

In regard to the cases whose specimens have been exhibited this evening, I would say that I have had personal knowledge of them all. It is a class of cases hard to diagnose and difficult to treat, and they usually have been through all kinds of treatment, without cure, sometimes without relief, it may be for years, before they come to the surgeon. The operation is not a necessity for life, but it is for a comfortable life, as all patients suffering in this way are invalided considerable of the time, and life is a constant burden to them. Because of this I would consider the operation as clearly indicated, and the results of this series show that everything expected has been realized.

Dr. Cushing: I have very little to say to close the discussion. I should like to bring out again the fact that in presenting all these cases and all coming in at once, I do not desire to imply that all such cases are to be rushed into this operation. These are old and neglected cases, most of them from out-of-the-way places where they couldn't get treatment. I had a case from Dr. Adams, of Framingham, — pelvis full and hard. I said: "The woman has a home, can hire a girl; better use emollient applications, and wait."

In regard to getting fæcal fistula: of course there is some danger of that. In one of these cases pus was discharged from the rectum. On examining with the finger during the operation I found what I presumed to be adhesions and hardened tissue around the fæcal fistula. I did not disturb it, and she had no trouble from it.

In regard to the matter of puerperal inflammatory affections, I think the profession is going through the same process of education at the hands of Mr. Tait as they did in the case of areolar tissue at the hands of Ruysch.

I think in those cases in which Mr. Tait had the opportunity of operating within a few days, he found the tube enlarged, diseased, and evidence that the septic infection had not got into the lymphatics and run up in that way, as is generally supposed, inflaming the areolar tissue, but that there was septic endometritis; the tubes were enlarged, not occluded; pus runs out and sets the peritoneum on fire,—that is the way the case spreads. I saw M. Price operate in a case after abortion. The woman had puerperal fever. The tube was found as big as my wrist, big as a Bologna sausage. Out of that came this nasty foul pus, of which there were pockets in the pelvis. The case was perfectly clear, nothing about the areolar tissue. Pockets extended up to the kidneys. It was a neglected case.

From the results of such operations, I think the profession will go through the same course in regard to puerperal cases as in regard to non-puerperal cases. Where there is an acute case of puerperal fever somebody will take out the diseased tube, or if necessary the whole diseased uterus, and in that way save the woman, because the whole uterus may be a sloughing, diphtheritic bag of foul pus. That could be rinsed out from below, but nobody can rinse the tubes out. I think *the* operation for puerperal fever is going to be to remove the tubes, and sometimes the uterus with it, drain and wash out the pelvis, and a good many women will be saved.

Adjourned at 10.15 o'clock.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. OBSTETRIC SECTION.

Stated meeting, Thursday, January 26, 1888, J. W. Farlow, M.D., President, in the chair.

Dr. John Homans read

A CASE OF SEMI-SOLID OVARIAN TUMOR MISTAKEN FOR A UTERINE FIBROID; OVARIOTOMY; RECOVERY. A CASE OF THE SUCCESSFUL REMOVAL OF A LARGE UTERINE FIBROID BY LAPAROTOMY.[1]

Dr. E. W. Cushing: I was very glad to have Dr. Homans lay down so distinctly the principle by which he was guided, and the principle by which others of us would be guided, in regard to attempting the removal of these fibroids. The fact that the patient's life has become a burden, that she desires the operation, that she is willing to risk death, is, for Dr. Homans, if I understand him, sufficient indication for the operation, — when her life has become such that, without immediate danger of death, she is losing strength and is in misery for herself and her friends. Do I understand that that is correct?

Dr. Homans: It depends somewhat upon the social position of the patient. Some women, if without means, would come to the poorhouse, for they cannot work. I should say that if you thought that the chances of recovery were reasonably good, and if life were a burden from the weight of the tumor, or from pain, or from failure of the digestive powers, — that under these conditions you might properly operate.

Dr. Cushing: Secondly, the ground that Dr. Homans takes in regard to waiting and trying electrolysis upon these cases, — I think this method was pretty thoroughly tried and found wanting years ago, and I have yet to find many of those who have seen Apostoli's cases and who have tried the thing themselves, who have faith in the electrical treatment of real fibroids. The tumor which I have in this jar, and which I wish to show later, was considered to be a fibroid by a devout apostle of Apostoli, who really considered that it ought to be treated by electricity. It was not a fibroid at all. And here arises the question of diagnosis, which seems to me very important. Dr. Chadwick, who is not here, very honestly and frankly gave the profession the benefit of his attempts in this direction at the meeting of the American Gynæcological Society, in seventeen cases. In two the fibroids were diminished a little, while two others died, and two others were very ill, manifestly from the result of his interference. He had the advantage of the assistance of Dr. Amory. I think, as far as the electrical part went, and in the hands of such competent men as that, the results were as likely to be satisfactory as in the hands of most of us, and better than in the hands of many who will be attempting to remove fibroids by electrolysis.

I am not speaking of relief of symptoms, soothing pain, stopping hæmorrhage, etc., but of electrolysis proper, the making fibroids, or whatever are supposed to be such, disappear by galvanism — usually (as I understand Apostoli's method) by electro-puncture. Until good results are obtainable by a large number of competent observers, it seems to me that very great caution is necessary on the part of those who undertake to treat fibroids by electro-puncture. I have no experience in the method myself. I think Dr. Chadwick deserves great credit for his standing up and giving us his cases.

Dr. Marcy: Is this question under discussion? If so, I would like to speak of it. I suppose, of course, if the subject of the electrical treatment of myoma is to be discussed, we would differentiate the character of the growth; and I don't think Apostoli himself would consider a tumor of this sort a proper one.

I did not so understand it when I saw him here, or when I heard him in Washington. But certain classes of cases are benefited, as he claims, symptomatically, if not cured. Most of you probably have seen the report of Dr. Keith in one of the late numbers of the *British Medical Journal*, where he states: "I went to Paris and followed the clinic of Apostoli for so many weeks. I obtained from him the preparation that was necessary, and I made several hundred applications." And Dr. Keith reports extraordinary value from the use of this treatment in a very considerable class of myomatous growths, especially the bleeding ones.

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[1] See page 79 of the Journal.

I certainly was one of the last to become converted, because I had had a long experience with Dr. Cutter in the early years, had placed some of my patients in his care, had seen one or two go on to death, and had discarded it. I had heard of Apostoli in 1881 in London, and was only slowly persuaded to make the trial. As the result of meeting him in Washington, I prepared myself with the modern apparatus, and I suppose my experience is hardly worth quoting, but I have tried the treatment in four or five individuals with fifty or sixty applications, and there has been no difficulty so far as danger to the patient goes.

Within a week I have received a letter from a patient in Brookline upon whom Apostoli made his first operation in Boston. She came here on purpose to be seen by him. She had failed so that it was deemed that her life was in danger; it was not a case where I thought Dr. Homans or Dr. Keith would operate. The mass filled the pelvic basin. I did not advise operation. She had probably twenty-five applications by this method. The letter states that at the last three periods she has scarcely flowed more than normal; consequently she is gaining strength. It is too early to say what the result may be, but I must take exception to Dr. Cushing's sweeping criticism that the treatment is an exploded theory and must be relegated to the past. I am hoping that there is something in store for a class of sufferers for whom we do not feel willing to advise operative measures.

I have considered carefully the treatment and growth of myomatous tumors, and it seems to me that it comes within the rational that the high tension current (and I used 350 milliamperes) is of a certain definite value in the class of bleeding myomata. But our experience in this country has not been enough, it seems to me, to warrant us in placing implicit confidence in the conclusions. Dr. Smith, of Montreal, a pupil of Apostoli, is treating many cases with a constantly growing satisfaction. Dr. Martin, of Chicago, is an enthusiastic devotee of the electrolytic treatment, has made some modifications of the instruments, especially the abdominal pad, and he writes me that every day adds to his conviction of the value of the treatment in a certain class of very troublesome myomatous tumors; not that they altogether disappear, but that they are made so comfortable that the patient declines to have anything more done. I hope at some subsequent meeting to have more to say about my own experience.

Dr. Homans: In regard to this electrolytic treatment, Dr. Apostoli, of Paris, brought forward this method of treatment, and has reported something like five thousand applications in some four hundred patients, more or less, in which he says that 95 per cent., who pursued the treatment wih patience, have been benefited. This makes it imperative for a man to think twice before subjecting a woman to the risks of hysterectomy, if this electrical treatment is a benefit. I had not taken much interest in Dr. Apostoli's writings or his treatment, but Dr. Keith wrote me last October, I think, or earlier, that he had been using it for six months, and that he could endorse every word that Apostoli had written. I thought if that were so, if Dr. Keith had been so successful, that I ought to think about using it. So I wrote to Dr. Engelmann, of St. Louis, who is a reliable observer. He said that small fibroids often disappeared wonderfully; but as to large ones ? he put a question-mark after them. Dr. Apostoli has kindly sent me all his writings, and has given me valuable hints; but I have not yet tried his method enough to give a verdict. In one case of hæmorrhage from the uterus, the hæmorrhage was stopped at once under the treatment. In another case it was worse than ever. It seems to me very likely that the last one that was not improved was one where the tumor was being pushed into the cavity of the uterus, and I don't suppose that electrolysis or anything else will stop the hæmorrhage until the tumor is free. Pain and discomfort are certainly relieved more or less by the passage of the electricity. I don't feel as if it were going to be the treatment for fibroids. I think Dr. Keith is a little enthusiastic. I think we ought to give the credit of this treatment to Apostoli, and follow his method, although it is very tedious and tiresome; it is very often a difficult thing to get the sound into the uterus. In one case, where I made two punctures, the woman has had phlebitis and an obstinately swollen leg.

In none of my cases have I tried the treatment long enough to warrant any expression of opinion. Some of the patients did not suffer except for the presence of the tumor.

In regard to fibroid tumors of the ovary, I have removed two of them; but in both of them there was a tendency to cystic formation. In another ovarian fibroid, which was supposed by a surgeon in Philadelphia to be of the uterus, there was a cyst. I suppose it would be the rule for the fibroid tumor of the ovary to have a cyst somewhere.

The tendency would be for the formation of cysts.

There is another thing about the batteries. You get an expensive American dry battery, and it wears out in about three weeks if you use it much. It costs about two or three hundred dollars. If you had a wet battery, it would be pretty cumbersome, I should think. My dry battery wore out in something like twenty-five or thirty applications. If you are not going to do any good, you don't want to invest three hundred dollars in a battery every three or four weeks. Then, you cannot transport easily a wet battery. You slop the fluid about, and it is a very tedious kind of thing. I used to have a German battery, — the name I have forgotten now, — which had, I remember, thirty-two cells. It cost something like two hundred and fifty dollars. The fluid had to be carried in a bottle. I used to use it for aneurism. I never saw it do any good. A man must be quite an electrician, or else he must have an electrician with him. And you cannot always take an electrician with you, for most patients cannot pay enough. Of course, if you are connected with some institution, you could get the managers to furnish you with the battery. Surgeons are in a certain measure philanthropists, but not enough to buy a battery every four or five weeks. So that there is a good deal to be thought of, provided the treatment does not do any good. If it does do good, we don't care what the expense is.

Dr. Marcy: Permit me to inquire the histological structure of the tumors which Dr. Homans removed.

Dr. Homans: They both had large solid masses of fibroid tissue; though on top, but growing separately from the fibroid masses, there were cysts. So that they were fibro-cystic.

Dr. Marcy: Was the solid part a myoma?

Dr. Homans: Yes; it was what I would call a solid fibroid growth.

Dr. Farlow: I remember seeing, at an autopsy, a tumor which proved to be very large cystic kidneys, each being thirteen or fourteen inches long. They were fairly solid, although covered with very small and numerous cysts; and of course, if a patient has a very tense or fat abdomen, these things may give rise to embarrassment in diagnosis. They are not commonly confounded with fibroids, but in this case they came down low.

I saw two or three of the cases on which Dr. Chadwick tried electrolysis. I should agree very forcibly with Dr. Homans in what he said about the benefit of an electrician. The apparatus was under Dr. Amory's supervision. Some little thing that the electrician could do was necessary to get the thing into working order. The patients expressed themselves as relieved of many of their subjective symptoms. The weight, bearing down, and a certain amount of the flowing, were relieved.

(To be concluded.)

Recent Literature.

Clinical Lectures on Certain Diseases of the Nervous System. By Prof. J. M. Charcot. Translated by E. P. Hurd, M.D. Small square 8vo. pp. xxiv., 155. George S. Davis, Detroit. 1888.

This is one of the volumes of that most attractive Physicians' Leisure Library. As we have already noticed the French original in these columns,[1] we need say nothing more of the subject-matter of this work, and Dr. Hurd's excellence as a translator are so well known that any further praise is needless. It is enough to say that he has translated this with the same ability that he has translated other works. He has selected eight out of the twenty-six lectures of the original work,— the lectures on spiritism and hysteria, isolation in the treatment of hysteria, choreiform movements, atrophy in articular diseases and rheumatism, traumatic contractions, and hysteria in the male. It would be a benefit if in the future he should see fit to render the other lectures in this volume accessible to the English reader.

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FAITH-HEALING AND HYPNOTISM.

In an article on hypnotism as a phase of the mind-cure, published in this Journal two years ago, allusion was made to the therapeutic uses to which hypnotism is put by certain Continental experts, and to the view now widely prevalent that cures, alleged to have been wrought through hypnotic suggestion, are of the same nature as phenomena of healing ascribed to "faith-cure," or "mind-cure."

Dr. C. Lloyd Tuckey writes for the December *Nineteenth Century* a singular communication under the head of "Faith-Healing as a Medical Treatment," in which he gives an account of a visit to Dr. Liébault, of Nancy, who is looked upon by many as the father of psycho-therapeutics as far as the utilizing of suggestion along with hypnotism as a therapeutic agent is concerned, "not merely for the relief of so-called nervous and fanciful complaints," but for the cure of many of the grave diseases which afflict humanity.

Dr. Tuckey found Prof. Liébault in his dispensary, an unpretentious one-storied building, separated by a garden from his house. From 7 o'clock A.M. patients come crowding in; there will be, on an average, thirty or forty, belonging mostly to the shop-keeping, artisan, and laboring classes. Most of them are suffering from some chronic complaint. One is sure to see cases of old-standing paralysis, asthma, epilepsy, rheumatism, neuralgia, "and especially of dyspepsia in its Protean forms."

Dr. Tuckey describes the treatment of one particular case. "We will take a very common case, and suppose that we have before us a sufferer from chronic indigestion. For years he has not eaten a meal with healthy appetite, nor without feeling some uneasiness after it. He has constant nausea, tightness across the chest, headache, sleeplessness, and depression of spirits, — in short, all the miserable symptoms of dyspepsia. With these his appearance fully agrees. He is heavy and apathetic, his eyes are dull, his body wasted, his skin dry and discolored.

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[1] See this Journal, 3rd Nov., 1887.

"The doctor begins by rubbing and gently pressing the parts chiefly affected, at the same time telling the patient that the pain he now feels is to pass away; that his digestion is to become easy; that he is to take food with appetite; that the secretions and functions are to become natural; the circulation is to improve; the chilliness and nausea are to be replaced by warmth and well-being. He next touches the head, saying that the dull aching and heaviness are to disappear; that sleep is to come at night quickly and naturally; that the complaint is to be entirely cured.

"These suggestions given, the sleeper is allowed but a few moments more of oblivion. Patients are still coming in, and the chair is wanted. So the doctor arouses him with a word or a few passes of the fan, and his place is taken by another sufferer. He will most likely feel wide awake at once, and all the better for his short sleep. The pain is vanished, and in its stead is a comfortable sensation of warmth; his head feels cool and clear, and he returns home with a more natural appetite than he has known for a long time. Before leaving, he is told to come again next day, when the same process will be gone through, but he will probably be more quickly influenced; and on subsequent visits it may be enough for him to sit down, to have Liébault look at him and say 'Dormez' for him to fall into a profound sleep. . . . If possible, the treatment is repeated every morning for several days, and all the doctor has foretold comes to pass. The dyspeptic recovers his appetite, his cheeks begin to fill out, he loses the cadaverous hue of chronic ill health, the distressing symptoms disappear, and in a short time he is cured."

Dr. Tuckey does not agree with those who suppose that the suggestive treatment is adapted for only comparatively mild ailments. "Experience," he says, "has taught the exact contrary," and he is inclined to think that the treatment "should be reserved for cases which have resisted ordinary methods of dealing."

With regard to the question whether treatment by suggestion has power over every form of disease, he replies that over some it has none, or only to a very limited extent. "It cannot remove developed (?) cancer or tumor. . . . It cannot stay the course of small-pox, diphtheria, or other acute maladies whose name is a terror. . . . It is in diseases of slower development . . . that treatment by suggestion is eminently successful. It is especially so in affections of the brain, of the nerves, of the digestive system. It frequently acts like magic on rheumatism, on paralysis, or on hysteria."

Dr. Tuckey also finds that hypnotism "has a decided power over evil habits and vicious propensities." "Dr. Liébault has counted among his patients many slaves of alcoholism and other forms of self-indulgence, who, through him, have become enfranchised." One man, whom Dr. Tuckey remarked was a French soldier, who for months had been under almost continual punishment for drunkenness, "Dr. Liébault has made a temperate man of him." Another case was that of a railway porter "who was cured of chewing and smoking tobacco." "The doctor suggested complete disuse of tobacco, and made him feel a distaste for every form of it." The doctors of Amsterdam told Dr. Tuckey that they had treated many victims of the morphine habit with equally good results.

But this is not all of the startling revelations which Dr. Tuckey, borrowing facts communicated by Drs. Liébault, Bérillon, Bernheim, Voisin, and others, has to make. Treatment by suggestion has been tried on many devotees of vice, and with the happiest results. "Inmates of the Paris female reformatories, women steeped in depravity, obscene of tongue, and, as it seemed, utterly incorrigible, have, by a course of this treatment, been transformed into decent members of society, and in some instances have for years held positions of trust."

We have recorded without comment some of the most interesting points brought forward by this review writer, who in his enthusiasm sees in hypnotism not only a power for the physical restoration, but also for the moral elevation, of the race. Doubtless there is much exaggeration in the results claimed. Not even Dr. Liébault's high reputation and apparent honesty can altogether divest his practices of all semblance of charlatanry. But hypnotism has its germ of truth and a certain place in medicine, like "mental therapeutics;" the danger, however, will always be that it will be misused for purposes of quackery.

In characterizing such performances as Dr. Tuckey witnessed at Prof. Liébault's dispensary as having about them a semblance of charlatanry, we have expressed the simple truth. No one knowing anything about hypnotism can believe that more than one-fourth of those patients that present themselves at Liébault's séances are amenable to, or can in any way be benefited by, hypnotic influence; yet all are encouraged to make the trial, and all are expected, doubtless, to pay their fee.

Moreover, no knowledge of medicine or surgery is required for the exercise of this new system of therapeutics. Prof. Liébault may be a master of pathology and diagnosis, but what he does — according to Dr. Tuckey — so successfully, the veriest ignoramus, provided he have the brazen assurance, may do just as well.

REPORT OF THE SURGEON-GENERAL OF THE ARMY.

The Surgeon-General's report for the fiscal year ending June 30, 1888, presents an interesting study of the physical geography of the United States in a map which accompanies it, and which shows the country divided into regions, each of which is characterized by distinct physical features and climatic conditions.

It is evidently difficult to adapt a uniform system of army regulations to the varied condition of the country. It will be remembered that the last report had much to say on the inadaptibility of the army uniform to the hottest stations occupied by our troops, particularly those military posts on the borders of Mexico. The present report contains many allusions of the same sort, the most satisfactory of which is a footnote to the effect that since the close of the calendar year the Quartermaster's Department has issued to the troops in the Department of Texas, and in a portion of the Department of the Missouri, clothing especially intended for wear in hot climates. In the present report the grave charge is brought against the army ration that it is ill adapted to troops serving in a semitropical region. An assistant surgeon at Fort Ringgold, Texas, remarks, "The salt meat is not suited for consumption in this climate; it would be palatable in the winters of Dakota, but it is revolting at all seasons of the year in Texas." In forwarding the report from which the last sentence was quoted, the post-commander says, "The remarks regarding the issue of salt meats, condemning it in this almost tropical climate, meet my entire concurrence. Every medical officer of experience and judgment has properly urged the discontinuance of the issue on the ground that it is detrimental to the health of the troops, yet their recommendations have been entirely ignored. Fat salt pork may be deemed a luxury when nothing else is obtainable, but otherwise it is repulsive to taste and digestion."

The system of card catalogues is being rapidly applied to the work of the record and pension division. The medical history of each soldier who served during the war of the Rebellion is transcribed from the hospital registers. The names are then collected and arranged alphabetically by regiments, so that when all the registers shall have been copied, the cards showing the medical records of a soldier who may have been treated in any number of hospitals, and in any part of the country, will, by this arrangement, automatically fall together.

The remarks of Dr. Billings in regard to the educational function of the Army Medical Museum in his address before the Medical Congress of last September will be recalled. Since February 21, 1888, the new hall of the Medical Museum has been opened to the public, and the stream of visitors is now almost constant.

The Surgeon-General has a high idea of the therapeutic value of the Arkansas Hot Springs. Fifty per cent. of the patients admitted to the Army and Navy Hospital of that place have been returned to duty cured. The exclusion of diseases of specific origin will, it is believed, remove much of the odium attached to treatment in a special hospital; and as the benefits to be derived become more widely known, the admissions will undoubtedly be largely increased.

The Surgeon-General renews his recommendation of last year for an increase to the medical staff of twenty assistant surgeons.

MEDICAL NOTES.

— The Boston Medical Library Association will give, on Tuesday evening, January 29, at 8 o'clock, a reception to Dr. Oliver Wendell Holmes, its president from 1875 to 1888, when his medical library will be formally presented to the Association and accepted. Remarks will be made by Dr. Holmes, Drs. D. W. Cheever, President of the Massachusetts Medical Society, J. R. Chadwick, Clarence J. Blake, and others.

— Dr. Moran, instructor in hygiene in the public schools, in his recent annual report, strongly advocates the introduction of physical training into the Boston schools. As a possible aid to this end, we note the establishment, through the liberality of Mrs. Mary Hemenway, of the Boston School of Gymnastics, whose aim is to give scientific instruction and practical training in the Swedish system of gymnastics (the so-called Ling system) to teachers, and fit them to give instruction in the system. A class of twenty-eight women, all teachers in the public schools, has been under instruction at the school since October. These teachers were chosen for the purpose of making a practical test here of the system; and only one teacher was selected from any school, the members of the class representing public schools in all parts of the city. The results are so satisfactory that a class of men will soon be formed from the teachers of the public schools; and instruction will also be given to all others — men and women, boys and girls, of all ages — who desire physical training, it not being the intention to restrict the attendance to teachers, although the pedagogical course will, as before stated, be the chief feature of the institution. Those who take the teachers' course will not only receive instruction in gymnastics, but also in anatomy, physiology, hygiene, and "kinesiology," — the science of movements. Through the liberality of the founder of the school, there will be a number of scholarships for both men and women; and as the number of applicants in future will undoubtedly far exceed the number of scholarships, these will be awarded by competitive examination. The course for public-school teachers, whose time is well occupied, will extend over two years, from September to July; the course for those who make gymnastics their profession, and have more time for study, will be completed in one year. Any one who has had a high-school education will be allowed to join the teachers' classes. The teachers' course will also include such medico-gymnastic movements as are designed to overcome physical weakness in children, and abnormal growth.

— A mooted point of medical pronunciation is thus disposed of by the *Medical Record*: —

"A curious illustration of the propagation of an error through the dictionaries is found in the words "sthenia, asthenia, neurasthenia," etc. According to Dunglison, Webster, Campbell, and, we believe, other authorities, the pronunciation should be on the penult, *e.g.*, neurasthenía, asthenía, myelasthenía, etc. Such pronunciation is quite out of accord with common practice, for the reason that there are scarcely any other words ending in "ia" which are not accented on the antepenult. Diphtheria, neuralgía, dynamía, would sound to every one like new diseases. There is, in fact, no etymological justification for the dictionary accents given by the authorities quoted. *Sthenia* comes from *σθενοσ*, just as *algia* comes from *αλγοσ*. The word *σθενεια*, from which asthenia and neurasthenia are asserted to be taken, means "a boxing-match," and has no relevance to the words asserted to be derived from it. If, therefore, the physician will simply not give the "e" a long sound he can go on in his old way of antepenultemizing the sthénias, with the consciousness that sometimes man is greater than a lexicon."

— Some months ago, Dr. G. W. Galvin, of Boston, while attending a patient and a new-born infant, defended the child from the savage attack of a large bull-dog, and thereby sustained severe injuries. It was presumed at the time that the brute, who was a pet in the household,— that of Mrs. Mary Parker at the South End, — was jealous of the new-comer, and carried his sensitiveness to the point of attack. The doctor successfully defended the infant, getting it out of the chamber in the arms of its nurse, but had another fight with the dog, which turned his ferocious attention to him. The man finally gained the contest, but not until he had been so severely bitten that he was compelled to relinquish his practice for a time. He fully recovered, and sought compensation for his injuries, and finally appealed to the law. In court, last week, Dr. Galvin was given a verdict of $700 against Mrs. Parker, the owner of the dog and the mother of the child.

— What is called by the daily papers "a novel and useful service" has been opened at No. 45 North Seventeenth street, Phila. It is known as the Philadelphia Provident Medical Service. "The object of the service is to afford medical and surgical advice to those who, though unable to pay large fees, are still reluctant to accept gratuitous service. As it is not intended for that class who properly resort to free dispensaries, nor for those who are able to pay the fees usually charged by physicians in private practice, the consultation fee has been fixed at twenty-five cents; or five tickets, good until used, and transferable, can be purchased for one dollar."

— Dr. Buchanan, in his opening address at Glasgow University, stated that at the recent London University examinations ten out of nineteen passes with honors were taken by female candidates. In Anatomy they took exactly half the available number of honors; in Physiology they took four out of six.

NEW YORK.

— Lieut. Miles, who recently arrived on board the United States sloop-of-war Yantic for Port-au-Prince, Hayti, ill with yellow fever, died January 14th. No new cases developed after the Yantic reached the New York quarantine.

— Dr. J. H. Hunt, of Port Jervis, one of the surgeons of the Erie Railroad, has built and fully equipped at his own expense a small hospital at Middletown, N. Y., for the treatment of injured operatives of the road. It is a handsome three-story brick building, furnished with an operating room, a ward with ten beds, and private rooms for special cases, and has an elevator and all the modern appliances. Up to the present time there have been no accommodations for wounded employees along the whole stretch of nearly two hundred miles of road between Paterson and Elmira; and as accidents are of almost daily occurrence on the line, Dr. Hunt's gift will supply a really pressing want. It is to be known as the Hunt Memorial Hospital, in honor of his father, the late Isaac S. Hunt, M.D. Miss Mary Sherman, a graduate of the Bellevue Hospital Training School for Nurses, will be in charge as matron.

Miscellany.

DISEASES OF MENAGERIE ANIMALS.

AT a meeting of the Biological Society in Washington, according to a report in *Science*, Mr. F. A. Lucas read a paper on "The Diseases of Menagerie Animals." He showed that menagerie animals are extremely liable to disease; and this is almost as true of those born in captivity as of those which are captured when full grown.

Young animals suffer greatly from caries, owing to lack of proper diet; and their bones are very generally soft, swollen, and misshapen. The maxillaries are especially liable to be attacked during the period of teething, and the facial region is in consequence very much distorted.

Diseases of the lungs are very prevalent among menagerie animals; tuberculosis being exceedingly common among monkeys, and found among other animals less frequently. Pneumonia is a frequent cause of death, and birds as well as mammals are liable to be attacked by this disease.

The following is a list of animals examined, where the cause of death was fairly established: —

Macaque (*Macacus cynomolgus*). — Tuberculosis.

Gray fox — Pneumonia.

This specimen also exhibited a very bad case of intestinal catarrh and inflammation of the bladder.

Badger (*Taxidea americana*) — Pneumonia.

Elephant (*Elephas africanus*). — Pneumonia.

Lynx (*Lynx rufus*). — Uræmic poisoning (in two cases).

Black bear (*Ursus americanus*). — Killed. Had been sick for some time with catarrh of stomach and intestine.

Mino bird (*Eulabes affinis*). — Congestion of lungs.

Parrot (*Amazona ochroptera*). — Congestion of brain (?). This bird died suddenly, and all organs were healthy. The blood-vessels of the brain were much congested.

Parrot (*Amazona levaillantii*). — Tuberculosis.

Tooth-billed pigeon (*Didunculus etrigorostris*). — Disease of liver, that organ being converted into a hard, waxy mass, adherent to sternum.

Pigeon (*Columba livia domestica*). — Disease of liver, same as above.

Eagle (*Haliaëtus leucocephalus*). — Fatty degeneration of liver.

Night heron (*Nyctherodius violaceus*). — Congestion of lungs.

Correspondence.

THE RUSSIAN MEDICAL SCHOOLS, AND THE PRACTICE OF MEDICINE IN RUSSIA.

PARIS, FRANCE, Dec. 31, 1887.

MR. EDITOR, — In Russia there are two grades of physicians, the *lekars* or physicians, and the doctors of medicine. The *lekars* are graduates of the various Faculties, or of the St. Petersburg Academy; have the right to practise, and correspond to our doctors of medicine. The grade of doctor is a higher one, and is only obtained, as we shall see farther on, after two years of complementary studies. This title of *doctor* is chiefly aspired after by all those who desire the position of assistant physician, professor, or physician to the hospitals. The number of "doctors" is very small as compared with that of *lekars* or physicians, as you may judge from the following figures: thus in 1877 seven hundred "lekar" diplomas were granted to students who had completed their courses before the several Faculties, while there were only fifty successful candidates for the diploma of doctor of medicine.

As you see, this is directly the opposite of the custom which prevails in Germany, where the title of doctor does not confer the right to practise, and in order to attain the grade of physician, the candidate must pass at Berlin a state examination, which authorizes him to practise medicine in the German Empire. I shall next have to examine successively what steps the Russian student is obliged to take in order to become practising physician, then what he must do in order to obtain the title of doctor.

To be a student of medicine it is necessary to have the *attestation of maturity*, which corresponds to our baccalaureate. But what distinguishes the Faculties of Medicine in Russia from those of other countries, and in particular from our own, is that the number of students is limited for each Faculty, and cannot exceed a certain figure. The most popular medical school is that of St. Petersburg; this school is not, strictly speaking, a Faculty of Medicine; it is a military academy under the special patronage and direction of the Minister of War, and to this school is granted the privilege of giving medical diplomas equally with the Faculties of Medicine. This Imperial Academy admits only one hundred and twenty-five students each year, and these are chiefly the *élite* of the young men of the various schools; and the number of Jewish or Polish students is extremely limited. It is very amply endowed, for the very reason that it is under the patronage of the minister of war rather than of the minister of public instruction; the former being able, from his more generously stocked treasury, to bestow upon this school largesses which are not within the means of the more limited exchequer of the minister of public instruction.

I made a thorough inspection of this military Academy, which may be looked upon as a model institute. Besides the departments of clinical medicine, which are very numerous, and comprise special clinical instruction in gynæcology, obstetrics, opthalmology, laryngology, etc., this school has a service of medical jurisprudence to which are assigned all simulated diseases, and in the amphitheatre of which are performed all autopsies pertaining to legal medicine. In proximity to this academy there is an anatomical and physiological institute where these two branches are taught, as well as the accessory sciences.

This Imperial Academy has for its object not only to qualify students to practise medicine, but also to provide the army with military physicians. All the professors and officers of this Academy, including the students, wear a special robe, and all make their visits in state.

The other Faculties of Medicine are eight in number, and are distributed in divers points of the Russian Empire, at Moscow, at Kharkoff, at Kief, at Odessa, at Kazan, at Dorpat, at Varsovia, and quite recently a medical school has been established in Siberia, at Tomsk. The number of students belonging to these several schools, including the Academy, is about five thousand.

The duration of the course is five years, and attendance on the lectures is obligatory. The students not only pay a stated sum to the Faculty as a body, but they are obliged to pay a tuition fee to each of the professors whose course they take, and the annual expense is from 60 to 80 roubles (150 to 200 francs).

The order of teaching is almost the same as that followed in our Faculties. The first year is devoted to the accessory sciences; in the second year anatomy and histology are taught; then comes the clinical teaching. But here there is a very important difference between the way medical studies are pursued in France and in Russia.

While by the establishment of our undergraduate class (*stagiaires*), and by reason of the special privileges of our externes and internes of the hospitals, we leave to our pupils a great freedom in the choice of hospital services, it is not so in Russia, and these are the requirements imposed upon students. At the end of the fifth semestre, *i.e.*, of the third year, the pupils are required to attend certain clinics called *propedeutiques*. In these clinics they are taught auscultation, percussion, and the manner of examining patients. They are divided into groups of ten; and each group is under the direction of the professor, of the *privat-docent*, or of an assistant.

Hitherto the students are not allowed to enter the wards of the patients except as accompanied by their professor, and as soon as the latter has left the ward they are obliged to go too. It is not till the beginning of the fifth year, *i.e.*, in the last year of their curriculum, that the students participate in the general clinics, and then always under the guidance of the professor; they report cases, prepare the clinical charts, etc. These students receive the name of *curators*.

The clinical charts just mentioned are very complete, and are prepared with the greatest care. Not only the daily pulse, the temperature, and the respiration, are clearly marked down, but you will find in these charts all the modifications supervening in the urine, the sputa, the stools, and the weight of the patient. But even these student "curators" do not have extraordinary privileges, and they do little but carry out the orders of their professor.

During these five years of studies the students pass a great number of examinations: first at the end of each year; then when all their studies are completed they are obliged to pass again all the examinations of the previous years, which become final examinations, the examination in natural sciences being excepted. But what still distinguishes our medical teaching from that of the Russian schools is that each branch of medicine has a special examination; thus it is that there is an examination in hygiene, one in legal medicine, etc., so that the sum total of examinations is thirty-three. There are also examinations for the various specialties, such as the eye, and ear, and mental diseases; these examinations are not paid for apart from the course, as in some countries.

In this manner students attain to the grade of physicians in Russia. If they wish to obtain the title of doctor, — a title chiefly desired by those who would occupy an elevated or official position in medicine, — they must pass again all their examinations before the Academy of Medicine, or before the Imperial Academy of St. Petersburg, and they must write a thesis based on some original work. The discussion of this thesis is characterized by a good deal of formality; and not only do the professors catechize the candidate, and, it may be, challenge the main propositions of the thesis, but the assistants have also the right to offer criticism and make objections.

There is in St. Petersburg an institute called the Clinical Institute, which is designed to complete the medical education, and fit graduates in medicine for the degree of doctor. This Clinical Institute, established under the patronage of the Grand-Duchess Helene Pawlona, is superintended by Prof. Eichwald. It is a free institute, but a model school of the kind, containing not only general and special clinics, but also laboratories exceedingly well furnished, and, in particular, a laboratory of bacteriology under the direction of Prof. Afanassief.

Very many courses are given at this Institute; these pertain not only to all the branches of medicine, but also to particular subjects, such as massage, hydrotherapy, and gymnastics; and on looking over the list of professors you will see that Dr. Oloff gives instruction in massage as applied to surgery, and that Dr. Stangue teaches hydrotherapy, gymnastics, and massage in their application to internal diseases.

It remains for me to allude to the manner of recruitment of the professorships in these Faculties of medicine. I will take for an example the custom of the Imperial Academy of St. Petersburg, which furnishes the greatest number of professors.

At the end of their medical studies, that is to say, at the end of their fifth year, those pupils that graduate with high honor (*cum eximia laude*), and the number of whom varies between thirty and forty, are invited to compete for the privilege of remaining in the Academy and taking their place among the professors of the Institute. This competitive examination presents many interesting features, one of which is the fact that among the written questions propounded to the candidates is one designated by the candidates themselves, and which they are expected to deal with in a thorough manner. This year they have chosen for their topic the following: "On the relative value of rest and of work in the treatment of internal diseases"

Out of thirty or forty candidates, seven are generally successful; and from this moment they become part of the professional staff of the Institute. They receive 1000 roubles (2500 francs) every year for three years; and they follow according to their preference the various clinical services, becoming attached to some one of the numerous hospitals of St. Petersburg.

At the end of three years they are allowed to compete for a purse which enables the successful man to travel in foreign countries, and remain there two years; and then they receive 2000 roubles

(5000 francs) per annum. At the end of these five years — three years of work in Russia, and two in foreign lands — they undergo an examination which pertains not only to the researches and private medical work of the candidate, but also to the lectures and clinical studies which he has pursued, and then they acquire the title of *privat-docent*. Those who cannot obtain this title stick to the hospitals or enter the army.

It is from the ranks of the *privat-docents* that the minister of public instruction selects the professors of the Academy, or of the Faculties; they are first named professors extraordinary, then professors ordinary; the first receive a salary of 2000 roubles, the second 3000 (5000 to 7500 francs). To these appointments must be added, in order to complete the salary of the professors, the sums paid by the students who follow the courses: this augments the emoluments of this office by 800 or 1000 roubles per annum.

In this connection I must remark that the tuition fees in the Faculties are paid by the students. At the Academy of St. Petersburg, on the contrary, the students are paid after the second year; they receive 350 roubles per annum (875 francs), but they engage to serve in the army for four years and a half.

If I add that for the places of physicians of the hospitals, assistant physicians, and internes there are no competitive examinations, and that these officers are appointed directly by the municipality, or by the trustees of the particular eleemosynary institution, I shall have given you the principal facts as to the organization of the medical instruction in Russia. It remains to say a few words about medical practice.

In Russia there are a great number of physicians occupying official positions. There are first the military physicians, who have the right to practise medicine everywhere in the cities. The most of these graduate from the Imperial Academy of St. Petersburg. They receive a stipend of 350 roubles; and when on military service this is increased to 800 roubles (2000 francs); and then it is increased every five years by one-fourth; and when they become general physicians this salary reaches the respectable figure of 3000 roubles (7500 francs). At the end of thirty-five years they retire on a pension proportioned to their grade. The military physicians may also receive largesses for travelling in foreign countries to perfect themselves in their studies; some of them, moreover, pass their examination for the doctorate.

After the military physicians come the physicians of the district (*zemski-vratch*); these communal physicians have salaries which amount to from 1000 to 1800 roubles per annum (2500 to 4500 francs); at the same time these appointments tend to become constantly lower on account of the great number of competitors for the positions, and the communes (*zemstvo*) aim to reduce the government grant (subvention) to 800 roubles (2000 francs) per year.

Of the *zemski-vratch*, some are attached to the hospitals; others practise in the villages where there are no hospitals, accompanied by the *feltschers*, and treat the sick among the peasants, and distribute medicines.

Many women physicians (seven hundred and fifty out of fifteen thousand physicians in Russia) occupy this position of *zemski-vratch*, and the communes have nothing but praises for their female practitioners; they maintain that these medical ladies are distinguished for the zeal and devotion which they bring to their work. In Russia the ladies take to medical studies with much enthusiasm, and with an exalted sense of the duties and responsibilities pertaining to the profession.

This position of *zemski-vratch* is attended with considerable hardship, and does not present the most flattering inducements; the *zemstro* can at their pleasure revoke their license and their stipend, and they have no claim to pension on retiring from practice.

The villages which are deprived of these *zemski-vratch* possess *feltschers*, who practise under the orders of a physician. As for the large cities, they have municipal doctors, who correspond to our "city physicians," or physicians to the boards of charity; these constitute the *gorodowoi-vratch*; they attend the sick paupers of the city. This service is very well organized in certain cities, as in St. Petersburg, where there are a great many boards of charity; the poor patients are well provided for in their sicknesses.

I must add that the hospital organization is characterized by a very liberal and tolerant spirit; no inquiry is ever made as to the nationality or religion of a patient who seeks admission to the hospital; persons of all religions are admitted; and in the lying-in hospitals women may enter without even giving their names.

Registered physicians have the right to practise throughout the entire Russian Empire; they are under the superintendence of a superior medical officer, who bears the title of general medical inspector. To all these physicians must be added those who occupy official positions in other departments, such as the naval physicians, the physicians of the railroads, of the court (*hofmedik*), and those who are attached to the person of the emperor and of the princes (*leibmedik*).

Lastly, along with these physicians occupying official positions there are "free" physicians; and in order that you may judge of the relative proportion of these various physicians, I quote the following figures from the official report of the department of medicine for the year 1886: —

Physicians of the medical administrations	167
" " " districts and wards	134
" " " hospitals	1207
" " " city	596
" " " prisons	19
" " " communes	1140
" " " villages	140
" " " railroads	121
" " " schools	320
" " " workshops	318
"Free" physicians	2091

In Russia, as everywhere else, competition is lively, especially in the large cities. I should add that the population of the villages is poor, and that there are enormous tracts of territory without any physicians, which goes to show that the situation of the physician is as hard as in our own country, and as little remunerative. At the same time the Russian physician is patient with his lot, and bears without too much repining the fatigues and discouragements of the struggle. The student of medicine is generally poor, and most of them live with extreme frugality; one meal a day often suffices them, and some have only 20 to 30 roubles (50 to 75 francs) a month with which to pay their board and other expenses. Therefore, a certain number give private lessons or "coachings" in order to help out their income.

Such are the facts which seemed to me of greatest interest connected with medical teaching in Russia. In a third and last letter I shall state how we may profit by adopting certain features pertaining to these medical schools.

Yours truly,

Dujardin-Beaumetz.

THE LECTURES ON ANATOMY AT THE MEDICAL SCHOOL OF MAINE.

Bowdoin College, Brunswick,
Jan. 15, 1889.

Mr. Editor, — Please mention in the Journal that on account of the ill health of Prof. F. H. Gerrish, Prof. L. B. How of the Dartmouth Medical School will give the next course of lectures on anatomy at the Medical School of Maine.

Prof. Gerrish is now in Southern California. His friends confidently expect his early and full restoration to health.

Yours very truly,
Alfred Mitchell, M.D.,
Secretary Medical School of Maine.

REPORTED MORTALITY FOR THE WEEK ENDING JANUARY 12, 1889.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diph. & Croup.	Scarlet Fever.	Meas es.
New York	1,526.081	739	319	2 06	18 62	9 38	6.86	3.36
Philadelphia	1,016.758	360	—	8 96	14 00	2.52	2.52	—
Brooklyn	751,432	344	142	18 60	19.80	11.10	2.70	1.50
Chicago	760.000	—	—	—	—	—	—	—
St. Louis	449.160	164	64	14.03	14.64	9 15	.61	.61
Baltimore	437,155	149	35	10.05	12.73	3.30	.67	—
Boston	407,024	180	54	9.35	3.40	6.66	—	.55
Cincinnati	325,000	99	—	14.14	22.22	9.09	1.01	—
New Orleans	248,000	105	19	8.55	13.30	3.80	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	95	35	6.30	11.55	2.10	—	—
Pittsburg	210,000	104	37	7.68	—	3.44	—	—
Milwaukee	200.000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80.000	—	—	—	—	—	—	—
Nashville	65.153	20	5	5.00	20.00	5.00	—	—
Charleston	60,145	27	8	14.80	7.40	—	—	—
Portland	40,000	13	2	7.69	7.69	7.69	—	—
Worcester	76,328	29	10	13.80	20.70	3.45	—	—
Lowell	69.530	37	10	10.80	8.10	2.70	—	—
Cambridge	64,079	16	4	—	31.25	—	—	—
Fall River	61,203	30	10	13.33	10.00	6.66	6 66	—
Lynn	51,467	13	—	15.38	15.38	7.69	—	7.69
Lawrence	40,175	13	2	—	23.07	—	—	—
Springfield	39,952	13	7	30.76	23.07	23.07	—	—
New Bedford	36.298	7	1	—	—	—	—	—
Somerville	33.307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28.781	10	3	10.00	—	10.00	—	—
Chelsea	27.552	16	5	—	—	—	—	—
Haverhill	24.979	5	2	20.00	—	—	—	—
Taunton	24.796	5	1	—	—	—	—	—
Brockton	24,784	—	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21.105	2	—	—	—	—	—	—
Malden	18.932	3	3	—	—	—	—	—
Fitchburg	17.534	5	—	—	—	—	—	—
Waltham	16,651	7	3	—	42.63	—	—	—
Newburyport	13,839	2	1	—	—	—	—	—
Northampton	13,419	—	—	—	—	—	—	—
Quincy	13.336	—	—	—	—	—	—	—

Deaths reported 2612; under five years of age 782; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 392, consumption 351, acute lung diseases 395, diphtheria and croup 175, scarlet fever 72, measles 32, typhoid fever 31, whooping-cough 28, diarrhœal diseases 22, malarial fever 16, erysipelas 9, cerebro-spinal meningitis 9. From typhoid fever, Philadelphia 10, New York 4, Washington 3, Baltimore and Cincinnati 2 each, Brooklyn, St. Louis, Boston, New Orleans, Nashville, Charleston, Worcester, Lowell, Springfield, and Haverhill 1 each. From whooping-cough, New York 9, Brooklyn and Washington 4 each, St. Louis 3, Baltimore and Worcester 2 each, Philadelphia, Boston, Pittsburg, and Charleston 1 each. From diarrhœal diseases, New York 12, Baltimore 3, Boston, New Orleans, and Lowell 2 each. From malarial fever, New York 5, Brooklyn 4, St. Louis, Baltimore, and New Orleans 1 each. From erysipelas, New York 4, Brooklyn and Charleston 2 each, Cincinnati 1. From cerebro-spinal meningitis New York 5, Philadelphia and Cincinnati 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273, for the week ending December 29th, the death-rate was 20.8. Deaths reported 3742; under one year of age, 855, measles 288, whooping-cough 101, scarlet fever 69, diphtheria 56, fever 33, diarrhœa 29, small-pox (Bradford) 1.

The death-rates ranged from 12.5 in Derby to 31.6 in Plymouth; Birmingham 15.7, Bradford 18.6, Hull 12.9, Leeds 24.4, Leicester 17.1, Liverpool 24.9, London 20.0, Manchester 25.1, Nottingham 16.7, Sheffield 24.3, Sunderland 22.5.

In Edinburgh 16.3, Glasgow 24.7, Dublin 21.3.

The meteorological record for the week ending January 12, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Jan. 12, 1889.	Barometer.	Thermometer			Relative Humidity.			Direction of Wind		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	Duration. Hours & Min.	Amount In inches.
Jan. 6	29.83	40.0	41.0	37.0	92	100	96.0	N. E.	N. E.	45	24	R.	R.	20.15	1.76
" 7	29.43	41.0	42.0	39.0	92	92	92.0	N.	N. W.	24	21	R.	R.	24.00	.90
" 8	29.77	42.5	49.0	38.0	60	70	65.0	N. W.	N. W.	14	5	C.	F.	3.40	.02
" 9	29.62	50.0	60.0	36.0	76	100	88.0	S.	S.	4	31	O.	R.	8.20	.20
" 10	29.68	38.5	45.0	38.0	63	50	56.0	S. W.	W.	29	24	C.	C.	2.15	.01
" 11	30.08	34.5	42.0	33.0	63	54	58.0	S. W.	W.	19	11	C.	C.		.00
" 12	30.28	31.0	40.0	29.0	58	80	69.0	W.	W.	12	10	C.	C.		.00
Means for the Week	29.81		46.0	36.0			75.0								

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING JANUARY 19, 1889.

DICKSON, A. H., passed assistant surgeon, detached from the "Pensacola" and to the "Atlanta."

OLCOTT, F. W., assistant surgeon, detached from the "Atlanta" and to the "Vermont."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM JANUARY 12, 1889, to JANUARY 18, 1889.

ALDEN, CHARLES H., lieut-colonel, surgeon, and Captain **EDGAR A. MEARNS**, assistant surgeon U. S. army, detailed for duty on Army Retiring Board to meet at St. Paul, Minn., at the call of the president thereof. Paragraph 7, S. O. No. 10, A. G. O., Washington, January 12, 1889.

By direction of the Secretary of War, Captain **JAMES E. PILCHER**, assistant surgeon, will repair from Fort Wood, N. Y. Harbor, to Philadelphia, Penn., at such time as his services can be spared, for the purpose of giving instruction to the Hospital Corps of the 1st Brigade National Guard of Pennsylvania. Paragraph 6, S. O. 8, A. G. O., Washington, January 10, 1889.

By direction of the Secretary of War, Captain **BENJAMIN MUNDAY**, assistant surgeon, is relieved from duty at Fort Sisseton, Dak., and will report in person to the commanding officer Fort Sully, Dak., for duty at that post. Paragraph 2. S. O. No. 11, A. G. O., Washington, January 11, 1889.

HARRIS, HENRY S. T., first lieutenant, assistant surgeon U. S. army, will, upon the arrival of Acting Assistant Surgeon **BOYER**, proceed from Camp Pena, Colorado, to the post of San Antonio, Texas, and report to the commanding officer for temporary duty. Paragraph 4, S. O. 1, Headquarters Department of Texas. San Antonio, Texas, January 2, 1889.

By direction of the President, and in accordance with Section 1246 Revised Statutes, an Army Retiring Board is appointed to meet in this city, at 11 o'clock A.M., Thursday, the 17th day of January, 1889, for the examination of such officers as may be ordered before it.

DETAIL FOR THE BOARD.

Colonel Jedediah H. Baxter, chief medical purveyor, and Major Charles R. Greenleaf, surgeon U. S. Army. Paragraph 2, S. O. 12, A. G. O., Washington, January 15, 1889.

LEAVE OF ABSENCE.

Leave of absence for fourteen days is granted Captain **RICHARD W. JOHNSON**, assistant surgeon U. S. army. Paragraph 1, S. O. 8, A. G. O., Washington, January 10, 1889.

APPOINTMENT.

S. WEIR MITCHELL, M.D., LL.D., has been elected Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic and College for Graduates in Medicine, an additional chair upon that subject being created.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, January 28th, at 7.45 P.M., at the Medical Library, 19 Boylston Place. Reader: F. H. Davenport. Subject: "Some uses of the Vaginal Tampon." Dr. James C. White will read a paper on "The Increase in the Prevalence of Scabies, with Remarks upon Treatment." Dr. J. Homans will show a Sarcomatous Kidney removed by median incision.

F. B. HARRINGTON, M.D., *Secretary.*

NORFOLK DISTRICT MEDICAL SOCIETY. — A meeting for scientific improvement will be held at the hall of the Roxbury City Guard, 67 Warren St., Roxbury, January 29, 1889, 7.45. Communications: 1, "Notes upon Diabetes," Daniel D. Gilbert, M.D.; 2, "A Puerperal Antiseptic Failure," Henry C. Towle, M.D.

S. ALLEN POTTER, M.D., *Secretary.*

HAMPDEN DISTRICT MEDICAL SOCIETY.

RESOLUTIONS PASSED AT A SPECIAL MEETING DEC. 17, 1888, ON THE DEATH OF DR. J. J. O'CONNOR.

Whereas it has pleased an all-wise Providence to remove our friend and associate Dr. J. J. O'Connor, vice-president of this society, in the midst of his labors and the height of his influence; and whereas we are deeply sensible of the loss we have sustained in his death, and are desirous of paying respect to the many estimable qualities of our late associate:

Resolved, that we tender to his bereaved family our heartfelt sympathy, and assure them that his memory will be ever cherished by his associates, by whom his friendship has been so highly valued.

Resolved that a copy of these resolutions be spread upon the records of the society; printed in the *Boston Medical and Surgical Journal*, and a copy presented to his family.

(Signed) A. F. REED, J. C. HUBBARD, D. E. KEEFE, } *Committee.*

BOOKS AND PAMPHLETS RECEIVED.

Sixth Biennial Report of the Trustees, Superintendent, and Treasurer of the Illinois Eastern Hospital for the Insane, at Kankakee. September 1, 1888. Springfield, Ill.: 1888.

School Document No. 17 — 1888. Third Annual Report of the Instructor in Hygiene. Boston: 1888.

Biennial Message of Richard J. Oglesby, Governor of Illinois, to the Thirty-Sixth General Assembly. January 9, 1889. Springfield, Ill.: 1889.

The Technique of Ovariotomy as practised at the University Hospital by Prof. Goodell. By Lewis H. Adler, Jr., M.D., resident Physician at the University Hospital, Philadelphia. 1888.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Year 1888. Washington: 1888.

A Case of Anæsthesia by the Inhalation of Nitrous Oxide, supposed to be the first on record. By Oliver P. Hubbard, M.D., of New York County. Read at annual meeting of the "New York State Medical Association." October 9, 1888.

Tenth Annual Report of the State Board of Lunacy and Charity of Massachusetts, January, 1889.

Massachusetts Institute of Technology, President's Report, Dec. 12, 1888. Boston. 1888.

Recent Researches Relating to the Etiology of Yellow Fever. By George M. Sternberg, M.D. Reprint.

Transactions of the Association of American Physicians. Third session. Vol. III. Philadelphia. 1888.

Text book of Medical Jurisprudence and Toxicology. By John J. Ruse, M.D., Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania, etc. Second Edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1889.

Original Articles.

PHYSIOLOGICAL HEART MURMURS IN HEALTHY INDIVIDUALS.[1]

BY J. H. MCCOLLOM, M. D.

In regard to the origin of functional mitral regurgitant murmurs, my predecessor has certainly given a very rational explanation. When we take into account the distribution of the muscular fibres of the heart, it is very reasonable to suppose that not only the sphincter-like action of the walls plays a very important part in the closure of the mitral orifice, but also that there is in addition a peculiar screw-like motion of these fibres.

It must be borne in mind that these functional mitral murmurs which Dr. Prince has observed, and also those to which I shall allude, were observed in men who were in a state of great mental excitement. This condition is not present when a patient is seeking advice from a physician, and it is found only to a very limited extent when a person applies to a life insurance examiner.

These murmurs were observed in men who were in perfect health. It has been quite interesting to observe that when the pulse fell below seventy the murmur disappeared. The percentage in my cases has not been quite so great as Dr. Prince has reported in his, but I think that this is due to the fact that Dr. Prince's men were much more excitable. I have never observed this murmur in persons of a phlegmatic temperament, neither have I observed it in persons inclined to obesity. Tobacco has some influence in the causation. If the theory of the sphincter-like action of the heart is tenable, then certainly the relaxing effect of nicotine would play a very important rôle. In two instances men have fainted when undergoing examination, and in each instance the murmur was heard before the attack of syncope. The murmurs have generally been soft and blowing, and in nearly all the cases the men have been addicted to the use of tobacco. I consider, however, that the so-called tobacco heart presents an entirely different train of symptoms.

Two hundred men were examined, and in twenty-seven instances this murmur was observed, giving a percentage of thirteen and one-half.

Case 1. J. C. Strong, well-built man of somewhat spare habit; no hereditary tendency to disease; clerk by occupation. When he appeared for examination was under considerable excitement; pulse about one hundred, and a well-marked mitral regurgitant murmur detected. Examined a short time after; the pulse-beat had fallen below seventy, and the murmur could not be heard. This man was rejected, however, on account of myopia.

Case 2. J. P. B. Apparently a perfectly well man. Murmur was detected; he was examined some weeks afterwards, and no murmur could be heard. In this case there was an intermittent action of the heart, and as he used tobacco to excess he was advised to give it up. At the end of five weeks when he appeared for re-examination the heart sounds were normal.

Case 3. W. J. B. Very nearly the same condition of things as in case second, except that there was no intermittent action.

Case 4. G. H. G. Strong, robust man; was under great nervous excitement; pulse very full, rapid and strong. Quite a loud murmur could be heard. While undergoing examination he fainted. At the end of about one hour after he had rallied completely, the action of the heart was regular; the pulse was of normal strength and rapidity. At first no murmur could be detected, but after a short time the heart-beat became rapid, and the murmur could be heard. When the man became calm the frequency of the heart-beat diminished and the murmur disappeared.

Cases 5, 6, and 7 present nothing particularly of interest except the fact that the murmur could be heard when the men were under a state of excitement.

Case 8. This man had an intermitting heart; had used a great deal of tobacco, and had also been under great nervous strain from domestic difficulties. The murmur was very soft, and was made out with some little difficulty; but of its existence I had no doubt. He was advised to give up the use of tobacco, and present himself for examination at the end of six weeks. No murmur could be detected at that time, and the action of the heart was regular.

Cases 9 and 10. In cases nine and ten this murmur was detected, and disappeared when the excitement was over.

Case 11. This man was strong and robust. He was very much excited during the examination, and the murmur was very marked. He was examined again after a week or ten days when perfectly calm, and no murmur could be heard.

Case 12. Was examined twice at an interval of ten days. Murmur very distinct the first time; at the second examination no murmur could be heard.

Case 13. J. E. Excitement marked on examination, murmur distinct; as the excitement subsided the murmur disappeared.

Case 14. J. W. Murmur low but present; disappearing with the subsidence of the excitement; reappearing when told that he had failed to pass the examination on account of myopia.

Case 15. W. G. A remarkably strong, robust man, apparently not of a nervous temperament, but very much excited at time of examination. The murmur was distinct, and disappeared when he became calm.

Case 16. J. S. Nothing particular in the appearance of the man. A very slight murmur heard at commencement of examination. Murmur could not be heard a second time.

Case 17. S. H. This man was very much excited, and the murmur was moderately loud. It disappeared when the heart-beat became reduced in frequency.

Case 18. C. R. This man was of a somewhat slight build, and stated that he had been at work hard for some considerable time, and also that he had been deprived of sleep for two nights; there was also considerable muscular tremor. This man fainted. The murmur was not loud: it was a peculiar soft, blowing sound, and disappeared when the man became calm.

Cases 19, 20, 21, and 22 present nothing particularly different from the preceding cases.

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[1] Read before the Boston Society for Medical Improvement, Jan. 14, 1889.

Case 23. T. G. The man stated that he had had rheumatism, but careful questioning revealed the fact that he never had had an attack of acute rheumatism. This murmur was very soft, and it disappeared.

Cases 24, 25, 26, and 27 have substantially the same history as the others.

A CASE OF TRANSPOSITION OF ALL THE ORGANS.[1]

BY W. W. GANNETT, M.D.,

Pathologist to the Boston City Hospital.

Cases of transposition (situs transversus) of the thoracic and abdominal organs are of such extreme rarity that the report of this case, with the demonstration of the specimens,[2] may be of interest.

The picture that one gets in viewing the organs *in situ*, in case of transposition, may be called the mirror-picture of the normal position. For if one imagines the thoracic and abdominal organs of the normal individual exposed to view, and then a mirror held over the body and the picture in the mirror examined, it will be at once obvious that not only the apparent position of the organs will be reversed, those normally lying upon the right side apparently upon the left; but also the shape of the organs will be exactly the reverse of the normal; there being the same difference as between a right and a left shoe.

The individual in question, an Italian about twenty-five years of age, of good development externally, entered the Boston City Hospital in a critical condition and died there, twelve hours after admission, of cerebro-spinal meningitis. Physical examination before death was restricted by the patient's condition; the heart was noted as found to the right of the sternum, and there was an unusual area of flatness in the usual situation of the spleen; otherwise, previous to the autopsy nothing was known of the condition to be described.

Circulatory system: The heart was in the right half of the chest cavity. Its shape was exactly the reverse of the normal: the right ventricle lying to the left, the left ventricle to the right. The conus arteriosus of the right ventricle was directed upwards and to the right, instead of upwards and to the left. The pulmonary artery was directed upwards and to the right. The aorta was directed upwards and to the left, then arched backwards and to the right; consequently the ascending portion of the arch came to the left, the descending to the right. The innominate artery was given off from the ascending portion of the arch to the left, and the left subclavian and left carotid were given off from the innominate. The right carotid and right subclavian arteries were given off directly from the descending portion of the arch on the right. The aorta lay to the right of the vertebral column, and the cava superior and cava inferior to the left of the vertebral column. The left spermatic vein, instead of emptying into the left renal vein, emptied directly into the inferior cava, whereas the right spermatic vein emptied into the right renal vein instead of into the cava.

The right lung was two-lobed, and the lower anterior tip of the upper lobe ended in a distinct lingula. The left lung had three lobes.

The liver, in shape, was the reverse of the normal, and was situated in the left half of the abdominal cavity, exactly opposite to where it should lie.

The spleen was upon the right side, just under the diaphragm, in the same relative position that it normally occupies in the left side.

The cardiac end of the stomach was upon the right, the pyloric upon the left. The greater curvature was to the right.

The duodenum was upon the left; the head of the pancreas attached to it and consequently to the left, whereas the tail of the pancreas was situated far to the right and in contact with the spleen.

The cæcum lay in the left iliac fossa; the ascending colon was to the left; the descending colon and sigmoid flexure to the right.

At the time of the autopsy the right testicle hung lower than the left.

Whether the individual was left-handed, and whether the centre of speech was in the right half of the brain, are points about which nothing can be known.

Cases of transposition of the organs are of clinical interest, as showing a heart upon the right side, without signs of a sufficient cause for displacement in the left side of the chest. Confirmatory evidence is to be attained by finding by percussion that the liver is upon the left, the spleen upon the right side, — although it is possible to have the thoracic organs transposed without a corresponding transposition of the organs in the abdomen.

Had this individual had an inflammatory process about the vermiform appendix, the signs would have been found in the left inguinal region, and from the situation might have led to error or confusion in the diagnosis.

AN UNUSUAL SEQUEL OF TYPHOID FEVER.

GANGRENE OF LEFT LEG EXTENDING TO UPPER THIRD OF THIGH: AMPUTATION AND RECOVERY.

BY R. P. LORING, M.D., NEWTON CENTRE, MASS.

Miss P., æt. seventeen, a factory operative, entered the Newton Cottage Hospital on the 2nd of last September, with a history of fever, malaise, etc., extending over a week. The hospital record for the following two weeks is that of continued fever, diarrhœa, and abdominal tenderness, rose-spots, enlarged spleen, and marked bronchitis. The temperature chart did not show the typical typhoid range of Wunderlich, but it was modified by antifebrin and certain malarial influences. The highest point, 105°, was reached on the evening of Sept. 4th. After Sept. 13th defervescence commenced. The case continued to improve until Sept. 19th, when a striking change occurred. It was noticed that the left radial pulse had become weaker than the right, and about the same time excruciating pain, numbness, and loss of femoral pulsation, commenced in left leg. On the following morning a purple discoloration of the left foot was manifest. This deepened and extended until, in a week, the foot was mummified and the gangrene had reached the knee. In the meantime the left radial pulse had become quite indistinct.

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[1] Reported at the Boston Society for Medical Improvement, January 14, 1889.

[2] The organs were shown to the society.

As the case now needed surgical care, it was removed from the medical service, and placed in the hands of the surgical staff.

By October 1st the gangrene had reached the middle of the thigh anteriorly and the upper third posteriorly. No pulsation could be discovered either in the left or right femoral. The patient commenced to complain of pain and tenderness in right leg. The right radial pulse could be easily discovered, but it was weak, and ranged from 120 to 140 per minute.

In a few days the line of demarcation commenced to show itself at about the upper third of the left thigh, higher posteriorly than anteriorly. The morning temperature was subnormal, and the pulse was rapid and feeble.

On October 12th amputation was performed by Dr. Loring (assisted by the surgical staff) at the upper part of thigh, just below the greater trochanter. There was no hæmorrhage from the femoral, which, with the profunda artery, was filled with a firm thrombus as far as it could be traced. On the second day after, the temperature ran up to 102°, and from that time until the present the patient has improved steadily. The stump healed rapidly, and in four weeks after amputation it was solidly united, and the patient moved around the ward in a hospital chair. Although the left radial pulse and right femoral pulsation could not be detected for nearly four weeks, the left hand and arm and right leg preserved a good temperature, and never showed any signs of discoloration. Until recently the right leg has continued to be tender, and even now cannot be fully extended.

The case is unusual in several points. Gangrene, as a sequel of typhoid fever, is rare, but does occasionally occur. It may result from embolism following an ulcerative endocarditis, or, more probably, from arterial thrombosis, the result of endarteritis. Mütter,[1] Patry,[2] Hayem,[2] Trousseau,[2] and others, give cases of gangrene of leg, hand, and one striking case in which gangrene of ear, cheek, and forehead resulted from plugging of the carotid artery. Martin[3] gives a case in which a gangrenous cervix was removed. Spillman[3] has called attention to gangrene of vagina and vulva in cases of typhoid fever.

J. H. Hutchinson ("Pepper's System of Medicine," vol. i. Article Typhoid Fever) quotes the researches of Barié[4] as to the frequency of acute arteritis as a sequel of typhoid fever, with the following deductions: the affection is generally unilateral, and as likely to occur in mild as in severe cases; in order of frequency it attacks posterior tibial, femoral and dorsal artery of foot; there are two varieties: 1. Acute obliterating arteritis, which is characterized by embryonal infiltration of all the tissues, loss of smoothness of the intima, followed by roughness of the same, with secondary thrombus and gangrene. 2. Acute parietal arteritis, in which there is a milder grade of inflammation, without clot, which terminates without gangrene.

Since there was no evidence of any cardiac valvular lesion at any time in our case, we can safely exclude heart embolus as a cause.

So we seem to have had a striking example of the two forms of arteritis described by Barié: —

1st, The obliterating arteritis, causing occlusion, by thrombus, of the left femoral, and followed by gangrene of almost the entire limb.

2nd, The acute parietal arteritis, which caused, for four weeks, a *partial* occlusion of the left radial and right femoral arteries, *not* resulting in thrombus and gangrene.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D.

THE VALUE AND ADVISABILITY OF EARLY DISCHARGES FROM ASYLUMS.

Schule's[1] view is that the asylum fulfils a negative duty in protecting the insane, a positive one in treating them. The ideal method is to keep the patient until he is restored, not to his former condition, but to a state even more satisfactory. This is not always practicable for other reasons beside the fact that many patients cannot be restored to mental health, because they never have been sound mentally. There is a class for whom early removal from the asylum is beneficial, (*a*) when removal is likely to hasten cure, (*b*) when their stay in the asylum is actually injurious.

Melancholia is the condition most requiring asylum care. Homesickness, however, comes on in protracted melancholia and in convalescence. It often becomes a fixed idea. In these conditions, when it becomes imperative, early removal often has a good result. Otherwise the patient opposes treatment, falls off in flesh, sleeps poorly, and homesickness becomes almost a delusion. Carefully selected cases are greatly benefited by removal. In convalescence from the early stages, when the delusions are beginning to be corrected, there may be refusal of food. In this type alone, early removal may be in such cases followed by the patient's beginning to eat. Other cases are those who are querulous, have morbidly increased anxiety about their health, and find new ailments each day. These, when tending to chronicity, may be harmed by longer stay in the asylum.

Mania. — Mendel's hypomania (mania mitis) and reasoning types are often irritated by asylum discipline, also those protracted cases of mania who are convalescing, and are independent, regardless as to their conduct, and impulsive. Patients of this class behave badly because they are "in an asylum," and feel that they may do as they like. The pressure of outside life steadies them.

Paranoia, with delusions of persecutions. In the early stages some cases reach a point where the asylum experience is woven into the delusion, and discipline adds to the morbid ideas. If removed for a time such patients instinctively do well until they become used to the new conditions. Some actively oppose discipline, others passively resist it. They may go on to dementia, while change, new surroundings, etc., may serve to resist this tendency. Great irritability contraindicates removal.

Acute Paranoia, convalescing stage. Consciousness once more becomes cognizant of surroundings. The healthy and morbid elements of consciousness, however, are mixed. Here early removal is the best and quickest means of remedy, provided there exist a healthy nucleus of consciousness and intelligence.

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[1] Phila. Med. Times, 1887.

[2] Cited from Article Typhoid Fever, Pepper's System of Medicine.

[3] *Loc. cit.*

[4] Revue de Médecine, Jan. and Feb., 1884.

[1] Annual meeting of German Alienists at Berlin, Sept. 17 and 18, 1888.

Chronic Secondary Conditions. — There are *many* of this class for whom asylum life is not the right medium, and does harm. Such do better outside.

Moral Insanity.— Here careful individual selection for temporary removal may result beneficially.

THE BODY-WEIGHT IN PERIODIC PSYCHOSES.

Stark [2] states that the weight of the body has only a relative value for the general nutrition, that the only accurate method is to measure the tissue metamorphosis: this is impossible in the insane. The cases observed were twelve of periodic insanity and six of circular insanity. The observation extended from three to five years, with the following results: —

1. The more marked the paroxysm, whether of excitement or depression, the more rapid and deep the fall in weight.
2. The longer and clearer the interval the sharper and deeper the weight curve at the onset of the attack.
3. The rise and descent of the body-weight curve is most rapid at the beginning of the interval or attack respectively. The weight persists between the different phases, being most marked in variation at the approach of a transition.
4. If two opposite attacks occur in uninterrupted succession, the patient's weight continues to remain below normal.
5. Accumulated paroxysms depress the whole plane of the weight curve deeper.
6. Short attacks and short intervals do not greatly influence the weight curve.
7. Periods of development: puberty and climacteric are evident in the size of the weight curve.
8. The higher the average weight the more marked the variations of the curve.

THE SIMULATION OF INSANITY, AND ITS COINCIDENCE WITH MENTAL DISEASE.

Fritsch[3] considers feigned insanity a rare occurrence in asylums. Simulators object to living among the insane, and find it very difficult to continually feign insanity when constantly under expert surveillance. Prisoners, however, have a reason for feigning and are more persistent. Simulators overdo their part, give only fragmentary manifestations of real disease, purposely contradict themselves, etc. Actual mental disease may coexist with simulation. Landers and Richter show that there are found in criminals mixed forms of insanity which are peculiar as to their nature, their periodicity, etc. They are marked by irregularity and lack of harmony in symptoms. In this class simulation may be only apparent, not real. The writer instances a case of insanity illustrating this non-harmony of symptoms, having a peculiar course quite different from any of the typical forms. He cites ten cases of simulation of insanity, seven for crimes against property. Krauss says that thieves lie vastly more naturally than other criminals, a fact which may help to psychological explanation of these (Fritsch's) statistics. Generally speaking, the theory is confirmed that the occurrence of simulation indicates the coexistence of a neuropathic tendency or a psychopathic taint, or its relation to symptoms of so-called psychical degeneration which are present in the individual.

Fürstner's views[4] are that simulation, though rare, is not so infrequent as some believe. It is tried by criminals to evade punishment, soldiers to evade duty, and in some few cases merely to cause a sensation. Simulators, he thinks, do not fear the asylum, as some believe, and are able to maintain a fair amount of simulation for some time. The forms simulated are dementia with apathy and even dumbness; confusion or loss of consciousness, usually with sensory hallucinations; variable and irregularly occurring symptoms-complex: excited states with confusion, senseless talk, and tendency to violence. Epilepsy is also simulated fairly well.

Simulation may fail from the popular belief that the insane are incapable of any normal act or speech. Melancholia and mania are very rarely simulated. They are instinctively avoided as being too difficult. When dementia is simulated its acute onset after previous good health, and the simulator's absurdity of talk and conduct, excite suspicion. The etiology may be a clew in all cases. Hallucinatory mania or a rapid flow of ideas in the acute stage of mania are difficult to simulate; but convalescence from mania may be more easily feigned. Old offenders are often mentally unsound in any event, and it is therefore often difficult to detect simulation in them. He cites the case of a girl who ate nothing, had no movement of the bowels, had bloody sweat, was visited by angels, was blind, paralyzed, yet carried by angels out of her room to church, had nails run through her feet, etc. It was, however, pure simulation, as she could see, defecate, etc., and was not hysterical, *i.e.*, had no hysterical amaurosis or paralysis. Snell [5] cites five cases of simulation, all of mental weakness and confusion. They pretended to forget names, counted falsely, read and wrote incorrectly, etc. Another did everything wrong, showing the popular idea of insanity to be that an insane person knows nothing and is unable to carry out correctly any mental operation whatever. This makes it easier to detect simulation.

"INTENTION PSYCHOSES."

L. Meyer [6] describes under this title a class of minor paroxysmal disorders allied to impulsive insanity. If any link in the chain of normal thought is impaired, the remainder, *i.e.*, the healthy links, become sooner or later pathologically altered in the same direction in reaction to the external world. One idea is often pathologically altered so as to give rise to "attacks;" *e.g.*, the sight of a yellow rose brings on strange feelings. He gives the disorder this name from the morbidly increased attention to a present perception, because this relation strikes the observer as analogous to tremor with its dependence upon intended movements — "intention tremor." He reports the case of a young lawyer, of fairly sound health, who had had slight melancholia. When asked to write, he had a sudden sensation resembling vertigo, and could not understand what was being dictated. He felt as though he were writing nonsense, had palpitation and an oppressed feeling. He really wrote well, but had some tremor. The condition recurred on other attempts to write. Later, writing became impossible, and his words were mere scrawls. Another case was an advanced student who had attacks of anxiety with palpitation during study. Later, this recurred with the impulse to throw himself from heights. A minister had a sort of vertigo on beginning to preach; he feared he was going to faint, and had great distress. Agoraphobia is an allied condition. Another patient cut his child's throat because a knife was near, after which the sight of a knife would reproduce the impulse. Sexual perversion is often allied to this state.

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[2] Allgemeine Zeitschr für Pyschiat., xliv. 3, 159, 1888.

[3] Jahrbucher für Psychiatrie, viii 115, 1888.

[4] Archives für Psych., xix. 601, 1888.

[5] Allgemeine Zeitschr. für Psychiatrie, xliv. 4, 1888.

[6] Arch. für Psychiatrie, xx. 1, 1888.

PERIODIC PARANOIA.

Mendel[7] gives, as the strictly periodic psychoses now recognized (exclusive of folie circulaire and hysterical and epileptic insanity), periodic mania, periodic melancholia, periodic hallucinatory delirium. To these he contributes a fourth form, which he calls periodic paranoia. His first case is a man, a small trader, thirty-three years of age, with attacks occurring at regular intervals of four months. The attack begins with sleeplessness and a rush of blood to the head, his face becomes red, he starts in his sleep, etc. He then hears voices, has a sweet taste in his mouth, loses flesh, thinks his relatives will poison him, carries a pistol. He has grand delusions, sends congratulations to the emperor, etc. This state lasts from three to four weeks; on recovering remembers his condition. The second case is a woman of twenty-five, who has had an annual attack for six years. She thinks she is a princess, that the emperor is following her, etc. Attack lasts from three to four months. Recovery sudden. Third case, a woman of fifty-one, who thinks she is the emperor's daughter, that the emperor visits her, that her own mother is not her mother, smells foul odors in her room, people try to poison her, her children are behind the wall, has an annual attack lasting several weeks, from which she recovers suddenly. These cases present a mixture of persecutory and grand delusions, and hallucinations — typical paranoia. A fourth case, a woman, had her first attack at the age of fifty-one. She has had nine attacks of melancholia. The tenth was mania ushered in by melancholia, the eleventh melancholia, the twelfth paranoia with persecutory and grand delusions.

The prognosis is probably worse than in other periodic psychoses, as paranoia is a graver disease, and dementia may come sooner.

TRAUMA, EPILEPSY, AND MENTAL DISTURBANCE.

Under this head Wagner[8] discusses the relation of epilepsy to mental disease, particularly with reference to psychical equivalents (of epilepsy). Is the psychical equivalent an epileptic attack? It comes on suddenly, often with aura-like symptoms; it lasts a short time, and ends with symptoms such as are seen at the termination of convulsions, viz., sleep or stupor. These attacks are often repeated, and often attended with profound disturbance of consciousness. They may come on in the place of true convulsions, or may be followed by them. Epileptics have such attacks; but people who never have epileptic fits also have them. As only a minority of epileptics have these attacks, it may be merely a coincidence, but it is impossible to say in the present state of our knowledge. We cannot distinguish between an "equivalent" in an epileptic and the same in a non-epileptic patient. The writer gives a series of cases of temporary, recurring, psychical attacks resembling epilepsy in the points given above. In all there were injuries to the head. Nine patients out of forty-nine cases of traumatic epilepsy manifested psychical equivalents, but only in five out of eighty-four of epilepsy from non-traumatic causes. In other words, it was three times as frequent in the traumatic cases. Trauma may cause circumscribed disease of the brain directly, or circumscribed or diffuse disease secondarily to primary lesions of meninges or bones.

1. Epilepsy does not come directly after trauma, but only long afterwards. A slight lesion must irritate for a long time before epileptic changes develop in the brain.
2. There are often irritative symptoms which start from the point of injury, this point being often painful on pressure.
3. Aura-like symptoms may arise from pressure on the seat of injury.
4. Spontaneous epileptic and psychical equivalent attacks are often preceded by an aura starting from this point.
5. Trauma, not of the head, may set up epilepsy, and the points mentioned in above paragraphs (1 to 4) are common to this type.
6. Traumatic reflex epilepsy may be cured by removal of the peripheral irritation.
7. Guinea-pig epilepsy of Brown-Séquard is the type of this form.

In psychical epilepsy of traumatic origin there is usually a long time between insanity and epilepsy, and there are often sensory, irritative symptoms from the point of injury. Many cases of traumatic, psychical epilepsy have disturbances quite analogous to those of true, reflex, traumatic epilepsy. In the Franco-Prussian war the great majority of cases of traumatic epilepsy were from injuries to the head rather than other parts of the body. 31% were due to injury to head, 4% of neck and back, 2% of legs, less than 1% of arms. Trauma is of itself not enough to set up a reflex neurosis or psychosis; the individual must have hereditary neuro- or psycho-pathic predisposition.

TREATMENT OF ANXIOUS MELANCHOLIA.

Bell and Lemoine[9] modify and formulate the opium treatment of melancholia as follows: —

1. As prolonged a stay in bed as possible. In this way cerebral anæmia is best resisted, and the patient removed from disturbing influences which often furnish material for delusions.
2. Every morning, on awaking, a glass of Hunyadi water. Constipation always yields to this medication.
3. Tincture of nux vomica, five drops daily in two doses, five minutes before the two principal meals.
4. Laudanum in progressive doses, beginning with five drops, in draughts to be taken morning and evening. The dose is to be increased by five

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[7] Allgemeine Zeitschr. für Psychiatrie, xliv. 617, 1888.
[8] Jahrbuch für Psych., viii. 75.
[9] Annales Médico-Psychologiques, Mars, 1888.

drops each day, until distinct amelioration in the patient's condition is evident. The writers had never had occasion to exceed in this way two hundred drops daily, but would not hesitate to increase the dose very much more if need be.

5. Spray baths of very short duration, and only when the physical condition has markedly improved.

HÆMORRHAGES AND FALSE MEMBRANES.

Wiglesworth's[10] views on such lesions within the cerebral subdural space, occurring in the insane, are in summary the following: —

1. The morbid conditions described under the term pachymeningitis interna hæmorrhagica are not the result of inflammation at all, but are solely due to the effusion of blood beneath the dura mater; the hæmatomata thus formed becoming organized, and eventually converted into fibrinous membranes.
2. Such effusions of blood are especially liable to occur in the insane by reason of the loss of support sustained by the meningeal vessels, on account of the convolutional atrophy which is so marked a concomitant of insanity, assisted as this condition so frequently is by transitory or more permanent congestions.
3. It is because these conditions are most perfectly fulfilled in general paralysis that hæmatomata are more often met with in this disease than in any other form of insanity.
4. Whilst subdural hæmorrhage occurs by far the most frequently in chronic cases of insanity, it is also met with in a small minority of acute cases, chiefly, if not solely, when the symptoms have been of a melancholic character; and in these cases the hæmorrhage may introduce a complication which may actually be the cause of the death of the patient.
5. Whilst in the great majority of cases traumatism may be confidently excluded, there seems reason for believing that, under favorable predisposing conditions, a slight injury may start a hæmorrhage which may prove fatal.

HYDRATE OF AMYLENE.

The employment of this drug, "especially in the treatment of lunatics," is the subject of a report by Scharschmidt of its use in Prof. Jolly's clinic for psychiatry.[11] The eighty cases in which hydrate of amylene was employed embrace the following affections: twelve cases of melancholy, partly with stupor, five cases of melancholia agitata, thirteen of paralytic dementia, four of primary dementia, seven of insanity with hallucinations, one of hypochondria, one of stupor, one of chronic alcoholismus with periodical sleeplessness, ten of mania, two of incoherency ("Verwirrtheit"), six of delirium tremens, four of acute delirium, one of hysteria with sleeplessness, one of hysteria with delirium, one of epilepsy with delirium, and one of epilepsy with attacks of hyperexcitability.

In simple melancholy 1.6–3.2 grammes (26 grains to 2 scruples and 13 grains) sufficed even in cases in which 1.5 gramme (25 grains) of chloral had failed. These doses, in certain cases, had a better effect than 7.5 grammes (2 drachms) of paraldehyde.

One (female) patient made continued complaints of determination of blood to the head, a constant concomitant symptom of the affection which could not be relieved either by hydrate of amylene or by paraldehyde, chloral, or urethan. Melancholia agitata required larger doses. In this form 4.0 grammes (1 drachm and 6 grains) of the hydrate of amylene were necessary to procure a whole night of sleep. Once the attempt was made to relieve by diurnal doses the restlessness and excitement in a female patient during the day, but without the desired success. However, she slept during the night without another sleeping draught. The hydrate of amylene proved most beneficial in paralytic dementia. The apathetic form required only small doses of this hypnotic: 1.6–2.4 grammes (26 grains to 2 scruples and 13 grains), the effect of which corresponded to that of 5.0–7.5 grammes (1½ drachms to 2 drachms) of paraldehyde, or 1.5 gramme (25 grains) of chloral. Urethan in doses of 3.0 grammes (2½ scruples) was without action, and 5.0 grammes (4 scruples) had varying effects. Attacks of excitement demanded increase of the doses. In the other forms of dementia the effects of hydrate of amylene were equally satisfactory.

While in chronic alcoholismus with sleeplessness smaller doses of the hypnotic were sufficient, larger ones were necessary in every case of delirium tremens: 4.0–5.0 grammes (1 drachm to 4 scruples) must always be given in order to produce effect.

In mania, at the commencement, smaller doses of 2.4 grammes (1 scruple and 17 grains) of hydrate of amylene were tried. The action was very tardy, and the patient either slept with many interruptions or remained altogether restless; larger doses of 4.0–5.0 grammes (1 drachm to 4 scruples), on the contrary, produced longer continued sleep almost without exception. In such cases frequently 1.5 gramme (24 grains) of chloral, and 7.5 grammes (2 drachms) of paraldehyde had no effect, 3.0 grammes (2½ scruples) of urethan failed, and 5.0 grammes (4 scruples) of it not always procured sleep. Epilepsy was as little influenced by hydrate of amylene as by paraldehyde. But sleeplessness and nocturnal restlessness were relieved by 3.2–4.0 grammes (2 scruples and 13 grains to 1 drachm) of hydrate of amylene. The same effect took place in hysteria with sleeplessness and delirium.

Clinical Department.

VICARIOUS MENSTRUATION, RESULTING FATALLY.[1]

BY HOWLAND HOLMES, M.D., LEXINGTON, MASS.

I was called late at night December 6th, 1888, to see Miss D. The father told me on the way to his house that she had been vomiting blood, — a fearful quantity, — it seemed to him "a pailful." She had had a similar attack, vomiting blood, last February, while attending school in Hartford, Conn., and was attended there by Dr. Smith, who thought it a case of vicarious menstruation, as did Dr. Hudson, of Milford, N.H., who had previously been her adviser. For the last three years she had had copious epistaxis, but not at regular or *monthly* intervals. She lacked a few days of being seventeen years of age, weighed one hundred and twenty-eight pounds, and had never menstruated but once, — two months previous to this illness.

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[10] Journal of Mental Science, January, 1884.

[11] Therapeutische Monat., No. 9, 1887, and Centralblatt für die gesammte Therapie, Dec., 1887.

[1] Read before the Middlesex East District Medical Society 19th Dec., 1888.

On being shown into her room, I found a finely formed, well-developed young woman of more than the average size of her age, very restless in bed, ejaculating now and then words showing a deluded mind. She showed no distinct consciousness of her condition or wants; said she had no pain, did not know if she felt uncomfortable anywhere; thought those two young men (her neighbors) ought not to be in her sick chamber with her; wanted water, wanted something to eat, wanted to go to bed, etc. This was the state of her mind.

She was pale, with a pulse 110, so small I counted it with great difficulty. Her respiration was easy, and her lungs clear and resonant. Her abdomen was not distended, fairly full and soft, but not tympanitic. She had very frequent sighing, some yawning, with much jactitation.

During the two hours I remained with her she took very small quantities of oyster broth, milk, or water several times, with assistance to sit up in bed. She had not vomited for twelve hours; but in using the vessel some hours before I saw her, she passed a small quantity of blood, and a digital examination indicated that it did not come *per vaginam.*

She had taken scarcely any sleep or nourishment for more than twenty-four hours. Before leaving her I prescribed nourishment, stimulants, and opiates. The family had once resided in a neighboring town to Lexington, and the patient's mother had consulted her family physician in that place the 4th December, for something to bring on her daughter's menses, and again the 5th for something to stop her vomiting blood, which began at 2 o'clock that morning. It was Thursday night, 6th December, when I saw her, and advised the parents to call their old family physician early Friday morning, which they did. He came and remained with the girl nearly four hours; gave her a rectal injection, which was followed by a small alvine discharge, mostly blood. He indorsed my treatment, promised to see the patient again in the afternoon, and left about 10 o'clock A.M.

Her condition soon became more alarming, and before 11 A.M. I was called in hot haste; but she was dead within thirty minutes, and before I reached the house. She had sunk easily and gradually.

She had never been considered a robust girl, nor yet a sickly one; had not a hæmorrhagic diathesis, had always been fond of the country, and had indulged in frequent rambles in the time of berries. Her physician coincided with me that her death was caused by internal intestinal hæmorrhage, and we both pleaded in vain for an autopsy.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

Monday, January 14, Dr. O. F. Wadsworth, President, in the chair.

Dr. Morton Prince read a paper on

THE OCCURRENCE AND MECHANISM OF PHYSIOLOGICAL HEART MURMURS (ENDOCARDIAL) IN HEALTHY INDIVIDUALS,

of which the following is an abstract: —

The reader had studied and analyzed the cardiac phenomena in eighty-six consecutive subjects, applicants for positions in the Boston Fire Department. After eliminating nine cases in which there were coexisting signs indicative of or suggestive of organic heart disease, there remained seventy-seven presumably healthy individuals. Of these seventy-seven, a systolic murmur, with all the characteristics of a mitral regurgitant murmur, could be heard in twenty-six cases.

The reader had taken numerous steps to confirm the accuracy of these observations, and among them had requested Dr. McCollom to note the frequency of similar murmurs amongst applicants for the Police Department. As a result of his entirely independent examinations, Dr. McCollom had found twenty-seven "mitral regurgitant murmurs" in two hundred presumably healthy men. These murmurs must accordingly be physiological — not pathological.

Some of them might be cardio-respiratory, but the greater number could not be explained by this hypothesis. In some cases, for example, two murmurs of different pitch could be detected, one of which was undoubtedly cardio-respiratory; the other consequently could not be. After tabulating the coexisting phenomena, it was found that while no relation seemed to exist between the pulse-rate and the existence of the murmur, it was found that of forty-two cases in which the strength of the heart's action was recorded, it was above the normal in strength in twenty-nine, natural in thirteen, as follows: —

$$29\left\{\begin{array}{l}\text{Souffle in 19.}\\ \text{None in 10.}\end{array}\right.$$

$$13\left\{\begin{array}{l}\text{Souffle in 1.}\\ \text{None in 12.}\end{array}\right.$$

Again, taking the converse of this, of these twenty cases with mitral systolic murmurs, the heart's action was recorded as above the normal in nineteen, and as natural in only one. The increased strength of the heart's action was also shown by the frequent presence of arterial murmurs.

To explain these murmurs, the mechanism of the mitral valve was discussed, and it was shown how the mitral opening was much larger in diastole than in systole, and that to close this opening two actions were necessary: 1st, the sphincter action of the muscular fibres surrounding the opening; and 2nd, the approximation of the valve-segments. It was generally recognized that, if anything weakened the power of the sphincter, regurgitation took place, owing to the valves being too small to fill the opening.

The reader then maintained the converse of this, as an explanation of the murmurs described in the paper, namely, *given a normal healthy sphincter, but with excessive pumping action on the part of the heart under strong nervous excitement, and a temporary leakage might occur from the blood being forced through the sphincter in spite of the action of the latter.*

The reader then showed how this theory explained the murmurs under discussion, and these were shown to have all the characteristics of regurgitant murmurs. Coexisting aortic and pulmonic murmurs were then discussed, and their mechanism explained.

Dr. J. H. McCollom read a paper referring to his observations on the same subject.[1]

Dr. Henry I. Bowditch: I am scarcely prepared to make any criticism upon this paper. I had the pleasure of knowing something about it before the meeting, through the kindness of Dr. Prince. It seems to me one of the most valuable which have been presented here for a long while. It would need to be studied carefully to understand it fully. Nevertheless, every one who has been an auscultator, as some of us have been the most of our lives, has often met these inorganic murmurs; I have very summarily passed them by as of no special importance unless I found some evidence otherwise of really organic trouble. I am glad to find the *explanation* of these sounds which Dr. Prince has given us. He has emphasized one point which I think is important, namely, that physicians should not forthwith decide that a patient has got organic and severe disease of the heart merely from these sounds, however loud they may be, or how long they may last, for they may remain quite persistent in cases where the patient is anæmic or nervous, or very much enfeebled from any cause. I have seen some of the most unfortunate results from physicians making a wrong diagnosis in such cases. Patients have imagined themselves condemned to death in consequence of their physician solemnly stating that there was valvular murmur or "valvular leakage." The results of such statements have been deplorable. My rule is, never to mention to patients that murmurs, functional or organic, are heard. If I mention them, I know that the patient will fear that he has serious permanent cardiac disease, than which nothing can be more disastrous to the whole *morale* of the individual. He gives himself up to *certain* death from heart disease, whereas he may live for many years, and finally die of an affection wholly different.

Dr. F. I. Knight: I have been very much interested in this paper of Dr. Prince, especially as a good many years ago I made some experiments on medical students to determine in what proportion a systolic murmur would be developed by pretty severe exercise. I set them running up the stairs at the old medical college, and I am sorry I have not looked back to the paper I published in the *Medical Journal* at that time to see the proportion of cases; but I remember, in a very large proportion of the students who volunteered for the exercise, that a systolic murmur was produced, which soon subsided after they were quiet again. At that time I attributed it to the "safety valve function" of the tricuspid. In regard to the significance of these systolic murmurs, it is pretty generally recognized that a systolic murmur is not of any special importance without corroborative evidence; but I have seen very deplorable results, as Dr. Bowditch says, from a bad prognosis founded simply on the existence of a murmur without any corroborative signs.

In regard to the temporary mitral murmurs, — murmurs which have been noted for a good many years now in chlorosis, I must say that I have derived a great deal of satisfaction after reading the papers published in the English journals a dozen or fifteen years ago on this subject, in seeing these murmurs disappear and even signs of enlargement disappear in chlorotic subjects, confirming the idea that, when the heart is enfeebled, there is a temporary dilatation, enough to allow of regurgitation without its being necessary to suppose that there is any fatty degeneration of the papillary muscles or any such severe condition as has been supposed by some writers to be its cause.

It strikes me that this explanation of Dr. Prince is a very plausible and probable one for a certain number of cases (the converse of the weak cases), and that anything which can derange the exact apposition of the curtains may allow a temporary regurgitation.

Dr. George M. Garland: I have been very much interested in Dr. Prince's paper, which is of great importance, both for its physiological interpretation of certain cardiac murmurs, and also because it will draw general attention to the practical fact that a large number of murmurs may occur in the cardiac region which do not indicate any disease of the heart.

I saw several cases with Dr. Prince, and was surprised at the number of men who presented murmurs in the cardiac area. A few of them seemed to me organic. Some of them were apparently not organic. At Dr. Prince's request, during my term of service at the Dispensary this fall, I watched to see how many murmurs of that class I could find among the men who presented themselves there for treatment. The patients of the Dispensary are a mixed class of street laborers, clerks, and poor artisans, who come there for various ailments and complaints without any special object in view except to be treated; they are under no great state of excitement, and therefore my examinations were made with favorable conditions so far as elimination of the excitement which Dr. McCollom speaks of. There were nearly six hundred new cases registered during my term of service, and I examined with my class five to ten cases daily. Among all that number I found only two cases where I could satisfy myself that the murmurs were not organic. All the other cases having endocardial murmurs presented other symptoms of organic disease of the heart. The two cases mentioned exhibited systolic murmurs at the apex of the heart with no other evidence of organic change, and the murmurs were unmistakably of the cardio-respiratory class. One of these patients had been told he had serious organic disease of the heart, and was under some trepidation of mind with regard to his condition, and was much relieved when I told him that in my opinion he had no organic disease of the heart. The question of accidental, transitory murmur at the apex of the heart was first called to my attention by the chief of Prof. Bamberger's clinique in Vienna. He referred to papers appearing in the French journals, stating that endocarditis was produced very often by diphtheria and erysipelas; and said that he had found such murmurs appearing during the weak stage of erysipelas and diphtheria, but such mur-

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[1] See page 103 in the Journal

murs had disappeared after the patient became stronger; and therefore he did not believe that these diseases were productive of endocarditis, but simply caused functional murmurs.

Later I noticed that Hayden explained such murmurs on the theory of mural debility, *i.e.*, weakness of the walls of the heart interfering with the function of the valves and producing leakage.

Balfour describes a case of leakage of the mitral valves with all the secondary results of an actual organic lesion, such as a murmur at the apex, secondary dilatation of the right side of the heart, engorgement of the liver, kidneys, etc. And yet the autopsy revealed absolutely no organic disease of the valves. Still later came these experiments of Liebig's laboratory upon the condition of the heart and the changes in its size during systole, and they have thrown, it seems to me, an immense amount of light on the whole subject, as explained by Dr. Prince. Instead of a rigid cardiac orifice filled out by stretched valves in exact apposition, as figured in Quain's "Anatomy," Hesse found the cardiac orifice contracted during systole and stuffed full of wrinkled and puckered valves.

If these observations are correct, any deficiency in the contraction of these orifices must readily lead to a temporary leakage, and such leakage is then due to a mural deficiency or debility, as expressed by Hayden. And this explanation, it seems to me, clears up a great many obscure cases of temporary leakage better than any other theory that has been advanced. One or two cases that have presented themselves to me in the last year have given me additional warning regarding the accusation of the mitral valves in connection with disease of the aortic valves.

Case I. A year ago last September a prominent physician in a neighboring town came to me. He was very weak, nervous, short of breath, all used up, and completely disabled for business, and on examining his heart I found a systolic murmur at the base from aortic obstruction, and associated with it a loud systolic murmur at the apex, apparently due to mitral regurgitation. I took pains at that time to satisfy myself that that murmur at the apex was not transmitted from the base, but a second murmur having a point of maximum intensity at the apex, as the other had in the aortic area. He came into my office the other day and told me he was very much improved in health and strength, and was attending to his business. He came in company with his partner, another physician of the same city, and we examined the heart together. The aortic direct murmur was still very distinct, and nearly as clear as a year and a quarter ago; the mitral regurgitant murmur had practically disappeared. I thought once or twice I could hear it. The partner could not hear it.

Case II. Ten weeks ago a young lawyer in town was stricken with hemiplegia and brought home, and I was summoned. I immediately listened at his heart and heard a loud systolic murmur over the aortic area, and also a murmur over the mitral area, and I diagnosed double cardiac lesion. He has so far recovered that he is now sitting up, and is able to walk across the room with assistance. Examining within a week I found the aortic obstructive murmur still very distinct, but the mitral regurgitant murmur has almost disappeared.

I think careless observation would pass it by and declare the mitral valves intact. Now, how are we to explain these two cases? Both cases preserve their aortic murmurs; both cases have practically lost the mitral murmur. Have we disease of both valves, or mitral murmur due to mural debility, temporary leakage, deficiency of muscular action of the heart? It seems to me that is the plausible explanation, and such cases are certainly a warning to me hereafter. In a fresh case of aortic trouble, or associated with temporary prostration of the rest of the body, I should hesitate to say that a murmur at the apex necessarily meant an inflammation or other disease of the mitral valves.

I remember reporting here a few years ago a case of a murmur in the tricuspid area, a very peculiar one, which could be interpreted by applying to it the results obtained by Hesse. Dr. Knight examined the case, and I exhibited the patient here. The murmur was in the tricuspid area, at the right side of the sternum, and could only be heard during full inspiration. If the man took a full inspiration and sustained his chest in that position, a distinct clear, systolic murmur was audible in the tricuspid area. During the expiration the murmur entirely disappeared. If one listened while the man was breathing rhythmically the murmur would come into the inspiration and disappear with the expiration. The only way I could interpret this to my satisfaction was that during inspiration the suction of the chest dilated the right side of the heart so that it interfered with the proper contraction of the tricuspid orifice, and therefore the tricuspid valves temporarily failed to plug the orifice. It seems to me to come under the head of the theory advanced here to-night.

The cardio-respiratory murmurs are, of course, extremely important and relatively frequent. In thin-chested people, with good vesicular breathing, with a rapid action of the heart, in my experience, the cardio-respiratory murmurs are not very infrequent, and I have often heard them round in the axilla; and in some cases of thin-chested people I have heard a cardio-respiratory murmur under the scapula on the back, where no murmur over the heart itself was audible. These cases are rare, and I have heard them only in thin-chested people.

Dr. A. L. Mason: I should like to ask the reader if I understood him that these subjects were all passed, and whether subsequently they have been in good health or remained there.

Dr. Prince: These particular subjects I passed. I confess that in the past I may have done some injustice, although perhaps I made up for it afterwards. I was in the habit of regarding these murmurs as due to tobacco; and I used to reject the applicant, saying he could have another chance to be examined later. Sometimes they would have two or three examinations, and I used to find that in the end the murmurs disappeared. I always attributed the disappearance to the leaving off of tobacco. I confess I am in considerable doubt as to how much tobacco has to do with it, — whether it plays considerable or no part. I used to put the question to each applicant, "How much tobacco do you use?" They "got on to" that after a while, and many answered that they did not use it at all; so I have not been able to draw reliable conclusions. I suspect that tobacco does have a tendency to weaken the sphincter of the mitral orifice. I find that the average amount of tobacco used is ten cents a week. Tobacco dealers tell me that men rarely exceed ten cents a week; when they go above that they are pretty tough chewers. A ten-cent plug is two ounces in weight. These men I now pass. I am not so particular about that now as I used to be, and if I find no further evidence of disease besides these murmurs, I pass them.

As to the discrepancy in the frequency of the murmurs as heard by Dr. McCollom and myself, it was my object to produce murmurs, his to have them disappear; therefore I took no pains to quiet the fears of the man. I kept the man at as high a state of excitement as I could to increase the murmurs. Perhaps that has something to do with making my percentage larger than Dr. McCollom's. I was pleased to hear that he had found the large number he did, therefore corroborating the accuracy of my observations.

Dr. Abbott asked whether, in those cases of mitral murmur, Dr. Prince tested the murmur by examining the back.

Dr. Prince: I did not examine the back in all cases. In quite a number of cases I found a murmur under the scapula in the back.

Dr. A. L. Mason: The conditions under which Dr. Prince and Dr. McCollom have examined men are peculiar, and I suppose most of us have had no similar experience. Perhaps the nearest would be the examiners for life insurance companies, who observe more or less anxiety. The ordinary hospital patients do not suffer from that cause. The accompanying conditions seem to have been mental excitement and very rapid heart. I am surprised at the frequency of such cases, and should hardly think that all of such a large number could be strictly called physiological. The condition is a morbid one, although temporary, and the murmurs may be analogous to those described by Hayden and others as dynamic, due to the condition Dr. Garland mentioned as "mural insufficiency" or weakness allowing spasmodic action of the ventricles, and probably an irregular closure of the valves.

Prof. Hayden says: "A murmur is essentially a morbid phenomenon, and therefore appertains exclusively to the domain of pathology. I entirely deny that in a heart free from disease of any kind a murmur or sound, however faint, is associated with the transmission of blood from auricle to ventricle."

Skoda says: "Contraction of the heart, more forcible and rapid than ordinary, cannot of itself produce a murmur." These statements may be too strong, but such, I think, is the experience of most hospital physicians and others who examine hearts under ordinary circumstances. This interesting paper of Dr. Prince will perhaps lead us to make further observations. It is a subject which I had not investigated; but in the last few days I have taken pains to examine the hearts of some thirty men, — hospital ward attendants, whose duties are very severe, perhaps quite as much so as those of the firemen or members of the police force. They have to carry many patients up and down the hospital stairs, so that their hearts and lungs are taxed to the utmost. Without going into details, I will only state that many of these men have been hard workers before they went to the hospital: one or two were blacksmiths. I also examined eleven athletes, of whom about one-half were pugilists and the others oarsmen and amateurs. Some of them had been undergoing hard exercise immediately before. Out of these thirty cases (nineteen hospital ward masters; eleven athletes) I found two respiratory "whiffs," the cardio-respiratory sound, I think, to which Dr. Prince refers, heard over or near the præcordia with the inspiration only, and manifestly connected with the respiration. Dr. Flint has explained this sound as being produced by the forcible concussion of the heart against the lung and the chest wall outside driving the air from the vesicles. It is not a very easy murmur to explain thoroughly, but the sound is quite different, on careful listening, from the endocardial systolic murmur. Of these thirty men, two had respiratory "whiffs." One of them was recovering from measles, and in the other there was no apparent cause. One man had an aortic murmur following rheumatism; and another a mitral murmur. This subject had been a patient in the hospital one year ago with diphtheria and quite extensive diphtheritic paralysis. These individuals had not been subjected to the same conditions as those examined by Dr. Prince, except a few who had been undergoing violent exercise. In no one of these men, with the exceptions noted above, was there a sign of cardiac or vascular murmur. In examining a large number of hospital patients for purposes of instruction in auscultation, for four or five years, and as all of the physicians must do in the wards at the City Hospital, I do not remember hearing a cardiac murmur which could be strictly called physiological. Of course there are many anæmic murmurs, perhaps due to blood friction; a large number of dynamic murmurs in cases of palpitation from tobacco and other causes, which are transitory. I do not know that we shall have an opportunity to examine patients under the circumstances Dr. Prince mentions, because those are quite exceptional and it is all the more interesting to hear what he has observed.

Dr. F. C. Shattuck: I think we all feel very much indebted to Dr. Prince for this admirable paper. I cordially agree with what Dr. Garland says as to its practical value. The idea that a murmur in itself and by itself is a serious thing dies hard; and I see not very infrequently to-day cases of the kind which Dr. Bowditch and Dr. Knight have alluded to, in which considerable mental perturbation has been excited in patients by being told that they were suffering from cardiac disease, that opinion being based apparently on the existence of a murmur; perhaps, when it stands alone, the least important accusation against cardiac integrity. And this remark applies just as much to murmurs which are persistent and heard in the absence of nervous excitement as to those which are transitory and heard only under the influence of excitement. I can now recall cases in which I have followed some of these persistent murmurs for years and still find no other evidence of cardiac disease. Whether there is slight valvular leakage in these cases I do not know; if there is it is so slight as to be of no practical moment. Dr. Bowditch thinks it wiser not to mention the presence of such murmurs to patients. I have, after careful consideration, been led to adopt a contrary course in many cases. I simply tell such a patient that he has a more or less unusual sound about the heart which has no importance in his case, and that I mention it because it may be well that he should know the fact and inform any physician under whose care he may come in the future, and who may notice it and attach more importance to its presence than it deserves. I have seen no reason as yet to regret this course.

It is interesting to note that Dr. Prince has so frequently heard mitral murmurs in healthy hearts belonging to vigorous men, when the action of the heart is temporarily excited. The murmurs of marked anæmia and chlorosis, conditions in which the action of the heart is apt to be more persistently excited and irritable, are not infrequently apical, though as a rule they are basic. For some years now it has been pretty generally held that the apex murmurs are indicative of mitral regurgitation, but it would seem that some other mechanism must be operative in the case of the basic murmurs; and there would seem at first sight no serious objection to bring against the explanation which Dr. Prince has offered.

Dr. W. W. Gannett: Dr. Prince has referred to the constricting power of the ventricular wall in aiding in the closure of the auriculo-ventricular valves. Important evidence of this from the clinical point of view is seen in connection with the relative insufficiency of the tricuspid valves occurring in connection with the dilatation of the right ventricle following mitral disease. Although the degree of insufficiency may be marked, yet under the stimulating effect of digitalis the murmur as well as the other signs of tricuspid insufficiency may entirely disappear; showing the improved condition of the ventricular wall has aided in the closure of the valve by diminishing the size of the valve orifice.

In reference to examinations made for life insurance, under circumstances in which applicants are often nervously excited, I do not remember to have heard murmurs like those described by Dr. Prince, — the few heard, not due to cardiac disease, being considered of cardio-respiratory origin.

I think the explanation of the murmurs described by Dr. Prince as due to leakage from high pressure a reasonable one as applied to auriculo-ventricular valves.

Dr. E. G. Cutler: Several months ago I had occasion to look over very carefully a large number of life insurance examinations, — six thousand and over,—and I find there were several so-called cardio-respiratory murmurs. The number was less than ten.

I also found three cases of this murmur as described by Dr. Prince, which at that time I was unable to explain, and simply recorded the fact.

The persons who came under my examination for life insurance were sometimes somewhat nervous and excited, and it was always my aim to examine them after that excitement had disappeared, so that the examination of the pulse and the auscultation of the heart sounds were almost invariably left till amongst the last things, after the patient's confidence had been re-established and he saw that it was not to be such a very severe ordeal after all. Of the cases which had this murmur, as described by Dr. Prince, I have seen two since then. One of them I was able to examine repeatedly; he has shown nothing of the kind since. As he appeared perfectly sound and well I saw no reason why he should not be accepted, and he was, and has remained perfectly well since. Since my attention was called to it by Dr. Prince I paid attention especially in the out-patient room to the auscultation of the heart for this murmur.

Out of something like four hundred cases, I have found it in only two instances, and then it was distinct. My assistants were able to hear it in one case, and in the other it occurred before the assistants had arrived. I think one explanatory statement may be made that patients that we see in the out-patient department, come for the purpose of examination, are not in the same excitement as people examined by Dr. Prince, and they don't fear some accidental thing that may throw them out from making a living.

With regard to the amount of tobacco used by patients, it is the custom of my assistants to ask how much tobacco they use, and the rule is for those who use it to say ten cents worth a week. Neither of the two in whom the murmur was found used tobacco, so that that was not an element in the case; and of the three which I found out of six thousand insurance cases, two of them did use it, the third I don't know about.

It seems to me that the point which is made by Dr. Prince is an excellent one, and I for one don't see any flaw in it.

Dr. Rotch remarked that for some years he had carefully examined large numbers of both adults and children for these murmurs, and had been surprised at the small number of cases where he had detected them.

This, in the adult cases, might be accounted for from the examinations having been made when the patients were not excited as in the cases reported by the reader.

He had met with rather a larger number of these murmurs among quiescent children than quiescent adults, this possibly being accounted for by the growing, and hence functionally weaker, heart of the child.

He also said that he had carefully examined the heart-sounds of children who were terrified and much excited, and out of a large number of cases had found but few murmurs.

Dr. Abbott said that he was called more than twenty years ago to a lady whom he found in a state of great excitement because her physician had seen her that day for other troubles, and had told her she had heart disease of which she might die at any moment, as he had discovered a murmur at the base of the heart. The lady was a delicate, neurotic person. Dr. Abbott told her that he heard the abnormal sound, but that it would probably pass off as she got stronger, and the sequel confirmed his opinion: he had had frequent opportunities of examining her heart since, and the murmur had not reappeared.

Dr. Hamilton Osgood, referring to a paper which he read before the society five years ago, and entitled, "Misleading Cardiac Murmurs and Expiratory Auscultation of the Heart" (*Boston Medical and Surgical Journal*, 1883), said: It seems to me we are never sure of our diagnosis unless we examine the heart during enforced expiration, the breath being held. Under these conditions, the left lung being retracted from the heart, adventitious, non-pericardial murmurs external to the heart, and caused by rubbing of this organ against the left lung, disappear, as do also cardio-respiratory murmurs; whereas the intensity of all endocardial murmurs becomes much increased.

Dr. Prince, in closing, said one point perhaps had not been completely understood. Regurgitation may be produced by mural debility as mentioned by Dr. Garland and in the paper. That has been known and accepted a long time, although I doubt if it had been clearly understood and explained how it takes place until these experiments by Hesse were published. The point I had been making was the direct opposite: given a heart of normal muscular power, and you may get a regurgitation murmur by the very forcing of the sphincter, — the converse of the original proposition. Before I started to tabulate these murmurs in this way, I was in the habit of finding mitral murmurs present in about 10% of the cases. When I came to tabulate them systematically I got more. Whether my business-like way made it an ordeal for the subjects I can't say. At any rate the number of the murmurs increased.

Dr. W. W. Gannett exhibited and described

SPECIMENS OF TRANSPOSED VISCERA.[1]

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. OBSTETRIC SECTION.[2]

Meeting of January 26, 1888,—concluded.

Dr. E. W. Cushing read a paper on

A CASE OF TUBAL PREGNANCY: RUPTURE; RECOVERY.

Dr. Fitz said: I am very much interested to hear the subsequent history of this case. It seems to me that this class of cases is one that is very likely to come up in the practice of almost any of us. This and another case of probable extrauterine pregnancy I have seen in the past year, and in former times I have made several post-mortem examinations where the rupture of the sac has been the cause of death. One of these cases I remember was the wife of a physician. Another, occurring in South Boston, was a case of so-called interstitial pregnancy, where the manner of death suggested the probable diagnosis, rather than the course of the symptoms during the illness of the patient.

It seems to me it is very important in this class of cases to bear in mind the probability of their occurrence under certain conditions. They are more likely to occur during the latter part of the child-bearing period than the first part; more likely to occur in women who have had several children, in whom an interval has elapsed since the birth of the last child; in those who have had attacks of puerperal fever or pelvic peritonitis from different causes. That is, in the fatal cases, these elements in the history were very conspicuous. Sometimes six or seven years have elapsed since the birth of the last child.

The history of a possible pregnancy, where the symptoms arise very early, is not arrived at until the pain or irregular flow is noticed. These seem to be the first features to excite attention. Such pains in the region of the pelvis would, in these days particularly, excite interest as to their nature, and would call for a vaginal examination with reference to the discovery of the cause. The peculiarity of these pains is their recurrence. In the post-mortem examinations I have made, the sac usually presented at the thinner portions evidence of previous peritonitis; adhesions, some fibrous and some fibrinous, showing different stages of formation. The fresh fibrinous adhesions are those which in all probability immediately preceded the rupture of the sac.

These recurring attacks of pain, with the history of possible impregnation in the class of cases referred to, seem to be of chief importance as directing attention to the possibility of extrauterine pregnancy.

Dr. J. C. Irish, of Lowell, said: Mr. President, I very much regret that I came too late to hear Dr. Homans's paper, but I was very much interested in that matter of the fibroid of the ovary. I have had two cases of fibroids of the ovaries: one was a double fibroid affecting each ovary. The patient I operated on in Pepperell in June, 1885. I have briefly reported that case elsewhere. These two fibroid growths of the ovary (if we may use the term: they were not examined microscopically) completely filled the abdominal cavity; and they were so closely applied to each other that they wedged the uterus, and held it immovably in the pelvis: and I supposed, when I operated, that I was operating on a fibroid of the uterus. It proved to be, however, two fibroids of the two ovaries.

The last of November, 1886, I operated upon a patient at Concord, New Hampshire. This patient had a fibroid tumor of the ovary as it proved. At the time of the operation there was a good deal of ascitic fluid, and it was very difficult to determine the exact character of the growth. Where its origin was, was a difficult question to settle. I had a specimen of it examined by an expert microscopist, and I have brought a specimen of the tumor here. That was a pure fibroid in structure, as the examination of Dr. Parker, of Lowell, proved. Twelve days later I removed a uterine myoma, and had that examined, and the two were found to be absolutely identical in structure, the uterine tumor and the ovarian.

In regard to the differential diagnosis of ovarian and uterine fibro-myomata, one would suppose, to read in the ordinary text-books the points of difference, that a man would very rarely be in error in the diagnosis of the two. One of the first points is, that in the case of fibroids of the uterus there is a great tendency to hæmorrhage, that it is almost always a constant accompaniment of the uterine fibroid. In the experience I have had, I have certainly seen some very large uterine fibromata which never were accompanied with any hæmorrhage. So it becomes necessary to attach not so great weight to that one symptom.

And again, certain patients, as they are developing an ovarian tumor, solid or cystic, will have more or less disturbance of the menstrual functions, sometimes metrorrhagia and menorrhagia; so the value of that symptom certainly is not very great. And then in the matter of physical signs in these cases of uterine fibromata that are subperitoneal, starting from the fundus of the uterus as quite a portion of them do, becoming pedunculated as they do, an examination of the uterus when they reach a considerable size, oftentimes, and oftener than otherwise I believe, will show no lengthening of the uterine canal; and if the pedicle has become somewhat attenuated, you get movements of the uterus independently of the tumor: and so these various distinctive signs become almost valueless. There are these difficulties of determining between the two; and many times I believe that it is impossible, — impossible for the most experienced and the most skilful to make the diagnosis.

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[1] See page 101 of the Journal.

[2] Concluded from page 94.

But there is one consolation in the matter, — that it is not so grave an affair whether one makes a correct differential diagnosis or not; that particular class of uterine fibromata is that which oftenest requires removal by laparotomy.

Dr. Homans: The symptoms of extrauterine pregnancy were very marked. The only thing that struck me was the position of the tumor. Perhaps that could have been explained by the patient's having gone about soon. It was between the umbilicus and the left anterior superior spine of the ilium. I remember three autopsies I have made of rupture of tubal pregnancy. In these cases the sac was in the pelvis; and the clots of blood, of which there were two or three pints, were mostly in the pelvis.

The position of the tumor puzzled me. Of course, as Dr. Fitz suggests, the tumor may have been connected with the uterus in some way by the cord. The cord must have been short at that time in the fœtal life, and the fœtus must have kept on growing. The tumor was as large as my fist the first time that I saw it, and it has gradually disappeared; and I should have thought that the fact of the discharge of the decidual membrane was almost conclusive of pregnancy. I never have felt that the diagnosis was certain about the condition of things; but it seems to me that it must have been sooner or later an abdominal pregnancy, if the tumor was the result of impregnation.

Dr. Marcy: In regard to operative interference, I saw the patient several times, and it seemed to me at no time was it to be advised; and I think the result justified us in waiting until some more definite symptoms of danger arose. The weight of evidence seemed to me to be in favor of extra-uterine fœtation; and although at no time did I advise section, I felt pretty certain that the time was coming when we should demand it. Two cases I have seen verified by autopsy. The first case foreshadowed my later thought. It was a young unmarried woman, suffering from symptoms of collapse, in which it was very clear that she had for some reason abdominal hæmorrhage. The woman confessed to having failed in her menstruation, and to having a familiar lover. I went home to secure my instruments for laparotomy, and unfortunately turned to my bookcase to see if I could find a precedent, and went back with a failing heart. She died the next day, and the autopsy showed clearly enough a ruptured tubal pregnancy. That was my first thought of operative measures, occurring, as it did, many years ago.

Later on, eight years ago, I saw a case of one of the most interesting women that have been under my care, and who was possessed of everything making life desirable. She had been five years married, and never pregnant. She had pelvic inflammation of some sort; had failed in her menstruation for a few weeks. She had experienced pain something as described by Dr. Cushing. There was a small tumor on the right side of the uterus. Slowly, after months of suffering, she recovered sufficiently to go to the country. For a considerable period during her vacation she was under the care of Dr. Wyman, of Cambridge. It was never clearly made out as to the diagnosis until later in the autumn, when a tumor appeared, which caused intestinal obstruction. I advised laparotomy. A consultant was summoned from New York city, and after a good deal of discussion it was negatived.

A rupture took place a day or two later, peritonitis developed, and autopsy followed. There was a fœtus four inches in length, lying in a sac outside the tube, after it had been at one time a tubal pregnancy. The obstruction had been caused by the matting together of several intestinal coils. The case seemed to me worthy of record, and has never been reported.

Dr. Gordon, of Portland, wrote me a few days ago that he had performed laparotomy in a case of tubal pregnancy; that recovery had easily followed, and his patient at the time of his writing me was convalescent. This is the first case in America, so far as he was able to ascertain, where recovery followed operation undertaken specifically for cure.

Dr. Fitz: There is one other point that I would like to mention, as these cases are likely to be operated upon, and that is the possibility of being obliged to remove the uterus in case the pregnancy is interstitial. The first case I saw of this sort was of that character, and if laparotomy had been performed it would have been necessary to remove the uterus. Fortunately this is one of the rarest varieties, so that the possibility is extremely remote at best.

Dr. Broughton: I believe Dr. Lusk speaks of a case where he used the faradic current before operating. I believe I recall the case that he speaks of, where, in consultation with Dr. Thomas, he was anxious to perform laparotomy, but was prevailed upon to defer operation until successive applications of the faradic current had been made; and he had the satisfaction of discovering, as ten days or more elapsed, that the growth of the tumor was at a standstill, and further, that the fœtus was evidently destroyed. And at the same time I think he mentions that that matter of the use of the faradic current was first suggested by Dr. Allen, of Philadelphia, but singularly enough the gentleman who had discovered the principle had lost sufficient interest in it to publish it, and it almost dropped out of sight; but at a discussion of the Obstetric Society it happened to come up that this Dr. Allen, if that is the name, had used the currents with good effect. Now, as I understand, in some of our text-books it is recommended as a means to be tried before laparotomy. I would like to ask if that means should be first tried. And I would ask at the same time whether the introduction of the uterine sound is a justifiable procedure in a case of suspected extrauterine pregnancy. Of course if the sound should be introduced in a doubtful case, abortion might be produced if we enter the uterus with normal pregnancy; and yet if it were suspected to be extrauterine, the introduction of the sound would be a most valuable means of concluding the diagnosis.

Dr. Cushing: In regard to the use of electricity, it is a fact that it is strongly recommended in these cases. Dr. Mann, of Buffalo, has had four cases, three of which were treated successfully, and the extrauterine pregnancy brought to naught by the use of electricity.

Dr. Van de Warker recorded a case last summer, and Dr. Mann has written me a paper which I shall publish very shortly, recommending the operation, and giving the indications for it.

Tait has ridiculed the idea that any one could make the diagnosis beforehand, but he has given up that idea now, and says the cases don't come to him until they are ruptured. Apostoli, in New York last summer, advised puncture of the tumor and use of the galvanic current, which every one else dissuades from, feeling that the moment you puncture the sac you don't know what may be the result. But it is a fact that the strong faradic current, or the rapidly broken galvanic current, applied by putting one electrode right under the tumor and the other on the skin as near as you can, used for ten or fifteen minutes every day, has in a number of cases cured the trouble.

In one case (Dr. Janvrin's) the patient died while the treatment was being carried on. It is now doubted whether it is justifiable to wait much for electricity when we know about the case. In regard to Dr. Gordon's case, Dr. Price, of Philadelphia, removed a pregnancy last September. I don't know whether it was ruptured or not. He operated upon one the other day where it was too late, and the patient died.

Dr. Marcy: I think it is generally believed in America that the credit of the use of electricity is due to Dr. Thomas. He reports two cases, and it is only within a week that Dr. H. E. Marion reports a case of his own of the application of the continuous current in something the way that Dr. Cushing states. The current vesicated a part of the vaginal wall, but it destroyed the fœtus, and the patient progressed favorably.

Dr. Farlow: Dr. Chadwick tried this in one case. Afterwards the bones of the fœtus came away, so that the diagnosis was confirmed, and the treatment was certainly very successful. It is, I believe, the first case on record in which the bones of the fœtus came away, establishing the diagnosis surely. In cases where the current is used and the patient gets well the diagnosis is, to a certain extent, an open one.

Dr. Fitz: There is another method of treatment before the necessity of operation arises (that is, where no urgent symptoms are present), which has been employed in Germany; and that is the injection of morphia into the sac. Quite a number of cases have been reported In regard to the introduction of the sound that is referred to, I think it is rather to be discouraged. Of course the possibility of mistaken diagnosis is apparent, and there is the likelihood of an abortion being occasioned; then again the introduction of the sound has set up severe pains and contraction of the sac, and I am not sure but rupture has followed. The enlargement of the uterus in this class of cases up to this time, that is to say, to about the third month, is not so very considerable; the cavity may be three or four inches. Bimanually the measurements of the uterus could be made out with sufficient satisfaction to tell that there is an enlargement of the uterus, and that is all that is necessary.

One of the most important symptoms, however, but one which, as in Dr. Cushing's case, does not come at the time we would like to have it, is the discharge of a membrane, which is of frequent occurrence in cases of extrauterine pregnancy. In tubal cases, where the rupture is likely to occur early, the discharge is likely to occur early. In other varieties the membrane is not discharged until later, and in these the question of immediate operative treatment does not come up. The structure of this membrane, then, it seems to me, is a matter of very great importance. In the case that Dr. Cushing reports, and in one I saw with Dr. Chadwick, the structural characteristics of the membrane were those found in the uterine mucous membrane at about the third month, when the fœtus lies within the cavity. And although those gentlemen who have examined large numbers of these membranes in connection with uterine fœtation attach no absolute importance to the structure as a means of differential diagnosis, yet such membranes associated with the symptoms previously mentioned offer but little doubt as to the nature of the case. In the diagnosis we are to think of these points in connection with the general symptoms, and the possibility of finding a sac in the vicinity of the uterus by the bimanual examination.

A peculiarity in Dr. Cushing's case was the seat of the tumor; and he explains this on the ground that it is supposed to be a tubal pregnancy, with a rupture of the tube taking place between the layers of the broad ligament, so that the hæmorrhagic infiltration extended up into the region of the kidney. That, of course, is a possibility, and at the same time there is an alternative which it seems to me deserves consideration; and that is, that in consequence of the rupture, — supposing this to be either tubal or tubo-ovarian, — the fœtus escaped, but remained connected by means of the cord with the wall of the tube, where it underwent its first development; that its escape resulted, as is well recognized to be frequently the case, in the production of circumscribed peritonitis. The subsequent history of the case, and the growth of the sac, would certainly not oppose that view. The eventual almost complete disappearance of the tumor would also coincide with it; for the fœtus at that time, supposing it at the second month of pregnancy, is still in a condition to be wholly absorbed: at the time it seemed to me very desirable not to take any very radical measures for the sake of removing the tumor, for, although the size had increased somewhat, there was still no evidence, on palpation, that the fœtus was growing.

The enlargement of the tumor seemed to be due rather to fluid than to tissue growth; and since then, as there have been no discharge of fœtal bones, nor any urgent symptoms, such as come from septic processes, it would seem not unlikely that the tumor was largely fluid. It seems to me that the treatment in this class of cases would be rather to wait for symptoms which would demand operation than to undertake an operation when everything was going on well, and there was no adequate cause for anxiety.

The enlargement is not sufficient to account for the presence of the fœtus within it.

Dr. Farlow: I know of the use of electricity in a number of cases in Boston and vicinity, where the condition presumably existed, in which the tumor disappeared. At any rate, it seems to me a safe mode of treatment. I have known of very little trouble that has followed its use, and I should say that it would be better to use it before laparotomy.

Dr. Cushing showed a specimen loaned by Dr. Bernays, of St Louis, of a double uterus, with a tubal pregnancy on one side. So far as he knew, it was unique.

Dr. Fitz remarked that it looked like a tubo-abdominal pregnancy.

Dr. Cushing showed a specimen from what had been supposed to be possibly a fibroid of the uterus. Cysts could be made out in the upper part. In removing, it tore, and a part was left inside. A clamp was put temporarily on the pedicle, and the portion adherent in the pelvis removed, but a great deal of flocculent material escaped into the abdomen. He washed the woman out with a bucket and a half of hot water, until it all came out clear. She made a good recovery except for one thing. The temperature went up in a week, and she developed signs of pelvic abscess. He supposes that happened in this way. She had a great many hypodermics of brandy in the leg. In the right leg some of these suppurated, and formed abscesses; and apparently the infection crept up, and found a lodging-place inside. At any rate, an abscess formed, which was opened three weeks afterward, and she made a perfect recovery.

I take it, it is a multilocular cystoma, with a growth of glandular tissue in the cavities, and the walls increasing so rapidly as to make it solid. I thought at first it might be a sarcoma, but it does not so appear on close inspection.

Dr. Cushing mentioned that the specimen was preserved in solution of corrosive sublimate and glycerine: one part of sublimate, twenty of glycerine, and two hundred of water. One can get along with less glycerine. That was the strength he was accustomed to use. The solution makes up readily in that proportion from the concentrated solution used for making irrigating fluid. A drachm to the quart of the strong solution makes a 1:2000 solution. As a preserving fluid, it makes a perfectly clear, bright solution: it is much cheaper than alcohol, and more brilliant.

— We learn from the *Medical Press* that the "United States Congress" has provided by enactment for the use of electricity in its enforcement of the death penalty.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON OBSTETRICS AND GYNÆCOLOGY.

Stated meeting, December 27, 1888.

Dr. J. P. Tuttle read the report of

A CASE OF EXTRAUTERINE PREGNANCY IN WHICH A FOUR MONTHS' FŒTUS WAS DELIVERED INTACT PER RECTUM.

There was no subject of greater interest now before the profession, he said, than the diagnosis and management of ectopic gestation; and, aside from its unusual termination, the case in question would serve to suggest some of the difficulties, not to say impossibilities, of diagnosis, and to illustrate the complications of certain methods of treatment advocated at the present time.

The patient was a lady of thirty-five who had been married eleven years, but never been pregnant. For several years she had been treated by various methods for "falling of the womb." Dr. Tuttle was called to see her March 26, 1888, when he learned that for some time past she had been troubled with nausea and loss of appetite; though it was stated that she had always had a delicate stomach. She had missed her last menstrual period, due March 13th; and this was attributed to the blizzard weather of that date. Digital examination showed the uterus to be slightly enlarged, well down, and apparently retroverted, or with posterior mural fibroid. The use of the sound was contra-indicated on account of the possible existence of pregnancy. There was great periuterine tenderness and heat about the parts. The right ovary was enlarged and tender, but the left could not be felt. The diagnosis made was pelvic cellulitis and ovaritis of right side; possible pregnancy.

Two days later he saw the patient during a paroxysm of pain, which was referred entirely to the rectum. It was due, apparently, to a spasm of the sphincter of that organ, and was promptly relieved by cold applications and the lifting up digitally of what he supposed to be an enlarged, retroflexed and gravid uterus. An examination under anæsthesia was refused; and the patient, who was not disposed to accept the idea of pregnancy, requested that she should be treated with electricity, which she said had formerly been successfully used in her uterine troubles. Believing that this was not the proper method of treatment under the circumstances, he surrendered the patient to an electro-therapeutist of the eclectic school, who had treated her before.

On April 23rd Dr. Tuttle was again requested to take charge of the case. She was then very weak, and unable to retain anything on her stomach; and as she was still flowing from a menstrual period which had come on after an electrical séance several days before, an examination was deferred until a later date. He afterwards learned that after this séance she had had a severe hæmorrhage lasting for two hours. At the time she told him that she had had a painful menstrual period lasting six days, during which she passed large pieces of black blood, and leaving a slight flow which still continued. Altogether the flow lasted for six weeks; and this led him to believe that an abortion had been produced, and an islet of placenta left adherent.

Two days later the patient was in a much better general condition, and an examination revealed the following state of affairs: continued vaginal heat and tenderness in periuterine pelvic tissues; uterus enlarged to five inches, slightly movable, in fair position, inclined somewhat to right side; a large, round, hard tumor-mass between uterus and rectum, not particularly sensitive, closely attached to the uterus, and movable with the latter; believed to be a fibroid, or possibly hæmatoma. The hot douche, boroglyceride tampons, and general constitutional remedies, were employed for some weeks with fairly successful results, and the patient thought she was getting well.

On June 1st the following note was made: Has had continued slight flow of blood from uterus for past three weeks in spite of astringent applications and the administration of ergot and gallic acid. Tumor does not seem to grow in size, but is sagging down in sacral fossa, causing retroversion and difficulty in defecation. Injected fluid drachm by weight ferri persulph. into cavity of uterus, and used larger tampons inserted during the knee-chest position, with the idea of raising the tumor, if possible, above the pelvic brim.

The hæmorrhage finally ceased altogether; and on June 25th he found that the tumor, which had continued to sink lower, presented slight symptoms of softening or breaking down. He proposed to put an aspirating needle into it within a short time; but the next day he was hastily summoned to the house, where he found a fellow practitioner, who had been called in in the emergency, delivering a fœtus from the rectum of the patient; severe griping and intense pain having followed the use of a cathartic the night before. The rent in the wall of the rectum was perpendicular, and as straight and clean cut as if made with a knife. It was two and one-fourth inches in length, and about two and one-half inches above the anus. The cord was intact, but was atrophied, and became detached from the placenta by the slight traction required in using it as a guide in reaching the latter. The placenta not following the child, the patient was etherized, and an attempt made to remove it; but this had to be abandoned on account of the hæmorrhage which it excited, and the weak condition of the patient. The cavity was therefore tamponed, in the hope that the placenta would detach itself or degenerate and come away gradually; and this procedure was followed by nearly fatal exhaustion, from which she rallied, under energetic treatment, in the course of two or three hours.

The patient continued very weak, but suffered but little pain. On June 28th the placenta was found plugged tightly in the rent, but the slightest attempt to remove it brought on a condition of extreme shock. About 7 A.M. on July 1st she complained of a sinking sensation, and had Dr. Tuttle summoned. He at once recognized that she was sinking from hæmorrhage, although the placenta was still plugged in the rent and no blood was escaping into the rectum; and she died in about an hour. As no autopsy was permitted, the attachment of the placenta remained uncertain; but he thought it probable that it was to the left tube or ovary, from the absence of the latter in its accustomed place, and from the position of the placenta to the left of the median line.

He judged that the cyst containing the child had probably burst into the cavity or folds of the broad ligament, and that but for the severe straining produced by the patient's self-inflicted catharsis, it would have proceeded to the usual result in such cases, viz., decomposition, abscess formation with its concomitant constitutional symptoms, rupture, and discharge through the rectum or vagina. It was noticeable that there were never any of those colicky pains usually met with in ectopic gestation, and that the symptoms of pregnancy had almost totally disappeared when the patient came into his hands a second time. In fact, the symptoms after this were those of a simple uterine fibroid or hæmatoma, indicating that the death of the fœtus had taken place before this time; and it was his opinion that this had been brought about by the electrical treatment employed. The case was of interest, he thought, therefore, as illustrating the dangers of electricity in extrauterine pregnancy and the darkness in which we were afterwards left. So far as he was aware, this case was unique, as being the only one thus far recorded in which the fœtus was delivered intact under similar circumstances.

DR. H. C. COE read a paper entitled

THE IMMEDIATE APPLICATION OF FORCEPS TO THE AFTER-COMING HEAD IN CASES OF VERSION WITH PARTIAL DILATATION OF THE OS.

The reader desired to call attention to a single condition in which the forceps should be at once used in cases of version, and would not be understood as advising their general use after version, or even the immediate delivery of the child. The following illustrative cases were cited: —

CASE I. Primipara, æt. thirty-five. Slight contraction of anterior conjugate. Labor induced near term for albuminuria and threatened eclampsia. Patient very anxious for a living child. Version. Head grasped by cervix, and could not be extracted until forceps were applied, when it was readily delivered, but too late to save the child. Perinæum torn through sphincter. Healed with primary suture.

CASE II. Multipara, æt. thirty-five. Several dead children previously delivered by high forceps, and living child greatly desired. Slight narrowing of anterior conjugate. Version. Head arrested by partly dilated cervix. Forceps applied after vain attempts at manual extraction, and child rapidly delivered, but could not be resuscitated. No laceration of perinæum.

CASE III. Primipara, æt. sixteen. Great rigidity of soft parts. Eclampsia of unusually severe type. Labor induced. Version. Head arrested as before, and time wasted in attempts at manual extraction; it was finally extracted with forceps, but the child was dead. Laceration nearly through sphincter. Healed with primary suture.

CASE IV. Multipara, æt. thirty-eight. Hydramnios and fatty heart. Labor induced near term. Atony of uterus and serious cardiac disturbance. Fœtal heart irregular. Version. Head grasped by cervix. Forceps applied after a loss of several minutes. Fœtal head large and unyielding, the fontanelle being nearly closed. Child resuscitated, but died in convulsions a few hours later. Superficial tear of perinæum. In each case the mother made a perfect recovery.

Judging by these cases, the reader inferred that many children might be saved under these circumstances by immediate application of the forceps. The reduction of infant mortality was especially important in private practice. It was just the class of patients in whom we were obliged to perform version and extraction who were most anxious to have living children. We must not allow our ideas as to the small importance of the child's life, imbibed in our hospital service, to influence us in private cases.

The application of the forceps did not present special difficulties. The perinæum might be badly torn, or the cervix might be lacerated, in consequence of the rapid delivery; but patients would gladly overlook such lesions if the child's life was saved by the physician's prompt action, especially if former children had not survived.

In conclusion the reader called attention to the fact that in the cases reported (two of which were private) the operator had had skilled assistants and nurses, possessed experience in this class of cases, and yet had been unsuccessful. Under similar circumstances he would not lose a moment in attempts at manual extraction, but would apply the forceps as soon as he recognized the fact that the constricting cervix did not yield.

Recent Literature.

Saunders's Question Compends, No. 3. Questions and Answers on the Essentials of Anatomy, prepared especially for Students of Medicine. By Charles B. Naucrede, M.D. With 117 illustrations. Philadelphia: W. B. Saunders. 1888.

We have no kindly feeling for compends, and find nothing in this one to make us more favorably inclined to them. It is perhaps better than most, but after all what is the use of it? Why should not the student own one of the standard anatomies? and if he wants to "quiz" his friends it takes no great genius to extract questions from it. The paper and printing are good: the woodcuts for the most part old and poor.

The Vest Pocket Anatomist. By C. Henry Leonard, A.M., M.D. 193 illustrations. 14th revised edition. Containing dissection hints and visceral anatomy. Detroit: The Illustrated Medical Journal Co.

This compend of anatomy contains, besides the bald facts of anatomy, rules for dissections and a certain amount of topographical anatomy. We are interested to see that the arch of the aorta leaves the heart opposite the middle of the sternum, ascends two inches, and arches over root of lung at the level of the second vertebra. Now, as the second dorsal vertebra is above the top of the sternum, this would show some very curious and novel anatomical relations. The paper is thin, the figures old, and tolerably incorrect.

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CREASOTE IN THE TREATMENT OF PHTHISIS.

In a recent number of the *New York Medical Journal* and in the *American Journal of Medical Sciences* for January, 1889, are articles by Drs. Austin Flint and Beverley Robinson, in which the use of creasote in pulmonary affections is commended.

Dr. Flint's cases (reported) were well-marked cases of phthisis pulmonalis, and were treated by creasote inhalations from a perforated zinc inhaler (Hazard, Hazard & Co.) and by the same medicine given internally in the dose of three or four drops t.i.d. The inhaling fluid (Beverley Robinson's formula) consisted of equal parts of spirits chloroform, alcohol, and creasote; the inhalers were generally worn almost constantly except at night. Dr. Flint concludes that the records of the ten cases reported show that creasote by the stomach and in inhalations, in cases of solidification without cavities, effects prompt and decided improvement in all phthisical symptoms, with increase in appetite, weight, and strength; in cases with small cavities there is much less improvement; and in cases with large cavities the treatment seems to have little more than a palliative influence.

Dr. Beverley Robinson's article gives the results of the use of creasote by mouth and by inhalations in sixty-six cases. These results have convinced him that "we have in beechwood creasote a remedy of great value in the treatment of pulmonary phthisis, particularly during the first stage. Not only does it lessen or cure cough, diminish, favorably change, and occasionally stop, sputa, relieve dyspnœa in very many instances: it also often increases appetite, promotes nutrition, and arrests night sweats. It does not occasion hæmoptysis, and rarely causes disturbance of the stomach or bowels except in cases in which it is given in too large doses."

Dr. Robinson does not venture any opinion as to whether creasote has any anti-bacillary effect; he affirms, however, that it may be used to advantage in all stages of the disease, and in his experience it has proven itself superior to any other medicinal treatment with which he is familiar. He has been in the habit of ordering in phthisis dessert-spoonful doses of the mistura creasoti of the United States Pharmacopœia. He combines the internal use of creasote with the antiseptic inhalations above mentioned. The formula is, however, varied; a combination of chloroform, iodoform, and oil of eucalyptus with the creasote often being used. As a rule, in the beginning, the inhaler is worn during fifteen or twenty minutes every three hours, and from ten to twenty drops of the inhaling fluid are poured on the sponge of the inhaler at least three times in the twenty-four hours. Dr. Robinson speaks well of the internal administration of creasote along with cod-liver oil, one minim to the drachm of the oil. Another favorite way of giving creasote is in combination with whiskey and glycerine according to the following formula: —

R.	Creasoti (beechwood)	min. vi.
	Glycerine (Price's or Bower's)	℥ i.
	Whiskey	℥ ii.

M. Dose. A dessert-spoonful every two or three hours.

Dr. Robinson insists on the necessity of the purity of the creasote, and has especial confidence in the product of T. Morson & Son, an English firm.

From the last *Annuaire de Therapeutique* we learn that for the past nine years Dr. Sommerbrodt, of Berlin, has administered creasote to nearly five thousand phthisical patients.

In almost all the patients, this medicament has caused amelioration of the symptoms, those only failing to be benefited in whom the pathological process was far advanced, and had invaded a great number of organs. "In cases relatively recent (initial hæmoptyses, catarrh of the apices, limited infiltrations) creasote gives surprising results; conservation of the forces, diminution of the cough, of the expectoration, increase of appetite, lessening of the night sweats and fever; lastly, in many cases, disappearance of the physical signs, notably of the percussion dulness, especially in young subjects." Sommerbrodt gives the creasote in gelatine capsules, each containing a grain of creasote and four grains of syrup of tolu. Three of these capsules are taken after each meal. The dose is gradually increased as the stomach will bear. Sommerbrodt finds that "the greater the quantity of creasote which the patient can tolerate, the more efficacious is its action." In some instances he has given as much as forty to forty-five centigrammes daily (seven to nine grains) for months.

We learn from the *Berlin klin. Woch.* that Kartzer has published observations of sixty-one cases of phthisis treated by creasote, giving also the results obtained by the same treatment in a hundred other cases. In ten per cent. he has noted what he considers as complete recovery, the physical signs disappearing, and bacilli being no longer present in the sputa. In forty per cent. he has obtained amelioration, so that the patients have been able to resume their occupations. His favorite formula is as follows: Beechwood creasote, two grammes; pure alcohol, thirty grammes; tincture of gentian, extract of coffee, of each ten grammes distilled water, one hundred grammes. Shake, and take a dessert-spoonful three times a day in half a cup of milk.

This mixture, according to Kartzer, is almost invariably well tolerated.

THE LEGAL VALIDITY OF STATUTES REGULATING THE PRACTICE OF MEDICINE.

An important decision has recently been rendered by the Supreme Court of the United States, through Mr. Justice Field, upon a case appealed from the supreme court of the State of West Virginia. An irregular practitioner named Dent had fallen under the scope of the law forbidding persons to practise medicine who had not a diploma or a certificate from a board of examiners. Reciting the facts, the Supreme Court decision says the case involves the validity of the statute of West Virginia which requires "every practitioner of medicine in it to obtain a certificate from the State Board of Health that he is a graduate of a reputable medical college in the school of medicine to which he belongs; or that he has practised medicine in the State continuously for the period of ten years prior to the 8th day of March, 1881; or that he has been found, upon examination by the board, to be qualified to practise medicine in all its departments," and making "the practice of, or the attempt by any person to practise, medicine, surgery, or obstetrics in the State without such certificate, unless called from another State to treat a particular case, misdemeanor punishable by fine or imprisonment or both, in the discretion of the court."

The decision of the Supreme Court says: "Th power of the State to provide for the general we fare of its people authorizes it to prescribe all suc regulations as may be necessary to secure the peop against the consequences of ignorance and incapacit as well as of deception and fraud. One means secure this end is the method adopted by the Sta of West Virginia. If the means adopted are p priate to the calling or profession, and obtainable by reasonable study or application, no objection to their validity can be raised."

MEDICAL NOTES.

— Press despatches from Washington state that the unexpended balance of the appropriation by Congress to pay for medical and other service during the illness of the late President Garfield is about $10,000, and that Dr. D. W. Bliss, the chief physician in attendance on the President, and who received only $6,500, is a claimant for this unexpended balance.

— Lawson Tait says, in his recently published lectures on ectopic pregnancy and pelvic hæmatocele: "I once saw a surgeon, who is now a baronet and has a court appointment, remove a breast with a tumor in it. After he had the whole thing in his hands, he drew his knife across the tumor, and out spurted a lot of laudable pus. He had made his explorative incision after the treatment was complete. Absolute accuracy of diagnosis in the abdomen is very far from being possible; only the ignorant assert that it is, and only fools wait for it."

— An English contemporary gives some figures collected by Dr. Le Pileur regarding the prevalence of syphilis in Paris.

Of the 64,679 annual births for that city 9,051 infants have syphilitic mothers, and of that number 8,418 succumb either *in utero* or soon after birth. Only 633 survive the first few months of existence. Taking the figures as a whole, thirteen per cent. of the children born at Paris die from the effects of parental syphilis.

— A writer in the *Australasian Medical Gazette* calls attention to a difficulty which is undoubtedly an actual and important one in the travelling of consumptive patients, particularly by sea, when they may occupy very small staterooms in company with other and presumably healthy subjects. The consumptive fears, and even resents, anything like free ventilation. The fellow-passenger either good-naturedly assents to having the transom and port-hole shut, thereby assuming a great risk of tuberculous infection, or else, if forewarned of his danger, persists in treating his room-mate as if a healthy subject, and thereby brings on a quarrel, or at least "strained relations."

— The *Medical Record* enumerates, in the order indicated, the twenty-five most important drugs in medicine, which to its mind represent "the soul of the pharmacopœia:" 1, opium; 2, mercury; 3, iodides; 4, quinine; 5, chloroform; 6, ether; 7, sulphate of magnesia; 8, salicylic acid; 9, aloes; 10, alcohol; 11, bromides; 12, iron; 13, chloral; 14, castor oil; 15, digitalis; 16, arsenic; 17, colchicum; 18, ipecac; 19, aconite; 20, strychnia; 21, cocaine; 22, ergot; 23, bicarbonate of potash; 24, mineral acids; 25, nitrites.

— Dr. R. Stansbury Sutton, of Pittsburg, Penn., has been moved by some eulogistic remarks of Dr. E. S. McKee, of Cincinnati, upon the success of Apostoli's method of treating uterine fibroids by electricity, to make to Dr. McKee the following challenge: —

"I will place at your disposal three women, each with a fibroid tumor, sustain them at my own cost in my private hospital, sustain you also, and furnish you with a perfectly complete apparatus and all else you may require, and for every one of these tumors you remove by your 'efficient substitute for the knife' I will pay you one thousand dollars. But if you fail, you to pay the expenses of sustaining the women and yourself.

"For the removal of the tumor you must name the time required. It must not exceed one year in any case."

— A Rather Small Practice.— Young Doctor: Yes, I expect that it will go pretty slow when I first open an office, until I get started a little.

Old Doctor: Well, you bet it will. Why, when I first hung out my shingle I sat in my office for three months, and only had one case.

Young Doctor: Whew! That was pretty tough wasn't it? Only one case: and what was that a case of?

Old Doctor: A case of instruments.— *Puck*.

— The Massachusetts Board of Health reports, as a result of the examinations of food and drugs by the board in the month of December, that of 352 articles examined, 117 were found to be adulterated, or varying from the legal standard, a percentage of 33.2. This does not represent the actual ratio of adulteration of articles of food, since the work of the board is mainly devoted to the inspection of such articles as it has found, by several years of experience, to be especially liable to adulteration. Of 30 samples of butter, 12 were adulterated; of 229 samples of milk, 84 varied from the legal standard; of 60 samples of spices, 14 were defective.

— A London correspondent of the *Druggists' Bulletin* writes: "On turning down Oxford street my attention was attracted by a huge sign on the opposite side of the street, and also by the number of people flocking into the building. This sign read as follows: 'Whaloid. Infallible cure for consumption. Dispensing hours 8 to 10 A.M., 3 to 5

P.M.' Entering the building I was at a loss what to make of the matter, as all I could see was the crowd and a large tank in the centre of the room. This tank was some seventy feet long, thirty feet wide, and. as I learned afterwards, about thirty feet deep, having been constructed at a great expense. While waiting patiently for developments, I found that the liquid was being lowered or let out by some means. Soon a smooth black surface appeared to view, and as the water continued to recede I became aware that a captive whale was on exhibition. Surprised at not having to pay any admission fee, I was soon made aware of the reason. A framework had been constructed, on which the animal rested, and soon an expert milkman was engaged in extracting for the consumptives, whaloid (or whale's milk), which was greedily absorbed at five shillings per glass. This plan seems to be identical with that of the milkmen of Naples, who lead a cow to the door and deliver the fluid in the presence of the consumer, so that the latter can be satisfied that no illegal dilution is indulged in."

— A man recently applied for registration, says the *Philadelphia* (Pa.) *Inquirer*, as a practising physician to the secretary of the Maryland Board of Health, exhibiting a document purporting to be a diploma issued by "The American College of Health and Vitapathic Institute," of Cincinnati, J. B. Campbell, president (which turns out doctors in five weeks). The caller was refused registration, as they would not recognize his diploma; but he afterwards showed a letter from J. B. Campbell, which said, "Vitapathic minister physicians need not register; health boards have nothing to do with us, as we never let patients die, but if they do, or will die, call in an M.D. in time."

"The secretary informed him that the laws of the State in regard to the practice of medicine are so loose that almost any one can practise; but in the event of a patient dying, the coroner would order an autopsy, and, should any malpractice be revealed, the practitioner would be summoned before the grand jury."

— The annual report of the Salem, Massachusetts Hospital Corporation shows that 279 patients were treated during the year, 103 in the medical and 176 in the surgical departments. The average cost per patient was $1.69. Of the number treated, 110 were entirely free. There were 425 patients in the eye and-ear department. During the year three nurses have completed their course and received their diplomas in the training school. The treasurer reports the receipts from all sources as $33,336. The disbursements were $29,396, which included investments of $15,579.

— Examinations in English schools go toward proving that color blindness is often declared to be present when really no organic defect, but only poor training in the naming and distinction of colors is found to be the trouble.

— Bills for the regulation of medical practice have been introduced in the legislature of Wisconsin.

BOSTON.

— The *Boston Record* has been publishing a series of reporter's studies which seriously impugn the sanitary condition of many of the Boston schoolhouses.

— An interesting, though not unusual, case has just been tried in Boston, in which a physician was sued for $10,000 for failure to treat correctly an injury involving a fracture of the radius near the wrist joint. The jury, after being out for twenty hours, found a nominal verdict for the plaintiff in the sum of ten dollars without costs.

— The Boston Medical Library Association gave a reception to Dr. Oliver Wendell Holmes on Tuesday evening January 29th, when his medical library, consisting of nine hundred and sixty-eight volumes, was formally presented to the Association and accepted. Dr. R. M. Hodges, president of the Association, occupied the chair, and remarks were made by Drs. J. R. Chadwick, librarian of the Association, D. W. Cheever, president of the Massachusetts Medical Society; Prof. Justin Winsor, librarian of Harvard College; Drs. George B. Shattuck and Clarence J. Blake. Dr. Holmes read a short address, which, with a report of the proceedings, will be published in the next issue of the Journal.

NEW YORK.

— Dr. P. F. Mundé recently gave a large reception for Dr. William Goodell, of Philadelphia.

— Dr. R. C. M. Page has been re-elected chairman of the Section on Theory and Practice of Medicine of the New York Academy of Medicine.

— At the annual meeting of the New York County Medical Association, held January 21st. the following officers were elected for the ensuing year: president, Dr. Charles S. Wood; vice-president, Dr. George Tucker Harrison; recording secretary, Dr. P. Brynberg Porter; corresponding and statistical secretary, Dr. Augustus D. Ruggles; treasurer, Dr. John H. Hinton; member of the executive committee, Dr. S. B. Wylie McLeod.

— The New York College of Dentistry, in which Dr. F. D. Weisse is professor of Anatomy, and whose students lately attended the latter's lectures at the

University Medical School, has secured the Carnegie Laboratory for Dr. Weisse to lecture in, now that he is no longer connected with the university, and he gave his first demonstration there on the evening of January 23rd. Besides the dental students a large number of medical students from the university were present.

— Dr. Edward J. Waring, of New York, has conceived the idea of establishing "Spectacle Missions," or societies for the gratuitous distribution of spectacles among the poor. A New York contemporary informs us that forty-five dollars will cover the cost of two hundred and forty pairs of spectacles, and two hundred and forty New Testaments, and adds that this estimate shows the modest margin of profit which ordinarily inures to our esteemed allies, the opticians.

— The Hospital Saturday and Sunday Association held its annual meeting at St. Luke's Hospital, January 21st, when all the principal officers were re-elected. General Agent Frederick F. Cook made a statement in regard to the prospects of the present collection, and said that it would be larger than that of last year, which amounted to about $50,000. He believed that it would make nearly $52,000. The collection in the churches was about the same as last season, and the increase was principally due to the banking-houses and other corporations. He called attention to the fact that the collection was now on a more permanent basis, and that, although the amount from the churches was not larger than last year, the number of churches contributing was larger, and this showed an increase of general interest in the scheme. There was also more general interest manifested by the various trades. The total amount actually received up to the date of the meeting was $40,345.

PHILADELPHIA.

— Dr. W. W. Keen was elected president of the County Medical Society, and Dr. J. H. Musser and John B. Roberts vice-presidents, for the ensuing year.

— The fact of the establishment of a Provident Dispensary in this city has already been noticed in these columns. (By a Provident Dispensary we understand a place where the improvident can obtain medicine in their own vials, the idea of charity being dispensed with by making an all-round charge of twenty-five cents per visit.) Since the first of the year a similar organization has been started here, under the title of the "Medical Aid Society for Self-supporting Women." It has rooms on Chestnut street below 13th, the hours being from 6 to 7.30 P.M. every night except Sunday. A small fee is required, the receipts to be used only to meet necessary expenses. The attending physicians are women.

— Dr. M. Price, at the last meeting of the County Medical Society, read a paper criticising amputations near the ankle joint, and the so-called osteoplastic resection of the foot, and also knee-joint amputations. He claimed that where an artificial limb is intended to be worn the point of election is either six inches below the knee joint or six inches above, as this gives the best-shaped stump for appearance and comfort. The object of amputation is to secure the future usefulness of the limb, and this is best attained by amputation at the point of election, instead of trying to save a few inches more, which will be a source of suffering and inconvenience to the patient all his life. He exhibited a patient who walked upon two artificial legs without crutch or cane.

— Dr. S. Weir Mitchell has accepted a position in the Faculty of the Philadelphia Polyclinic and School for Graduates in Medicine, as professor of Mental and Nervous Diseases. This adds to the hospital connected with the Polyclinic, the Orthopædic and Infirmary for Nervous Diseases. The Polyclinic has just purchased for twenty-five thousand dollars a lot, ninety-six by one hundred and fifty feet, on Lombard street near 18th street; and in the course of a few months the school will be moved to the new building, which will be supplied with all the facilities for teaching in the special departments of medicine.

— The new medical hall to be occupied conjointly by the Medico-Chirurgical College and the Philadelphia Dental College, and erected upon the grounds adjoining the Medico-Chirurgical Hospital on Cherry street below 18th, was dedicated on the 26th ult. It is a substantial brick and brownstone structure, with a front of fifty feet, and depth of one hundred and fifty feet, and a front elevation of seventy-five feet, containing three large lecture-rooms, each with a capacity of three hundred, besides twenty-seven other rooms, among which are dissecting-room and laboratories, all well equipped for teaching purposes. The Pancoast Anatomical Museum occupies a large room on the ground floor. The chemical and histological laboratories are also upon the first floor. The operative and mechanical clinic room of the Dental College is one hundred and sixty feet in length, is lighted by forty windows, and is arranged for sixty operating chairs. It is probably unequalled anywhere.

— Dr. Bodamer exhibited before the Pathological Society a man, thirty-two years of age, suffering with actinomycosis of the right side of the face. The patient was born in England, and from his fourteenth to twenty-first year worked in mines, and was very much with the horses, some of which had greasy hoof. In 1882 he had received an injury of the jaw, and a swelling appeared which gradually increased to the size of an egg. He had six teeth extracted, all sound, without relief; the growth soon filled the sockets of the teeth. In 1884 he was operated upon and had the tumor removed. The swelling subsequently returned, and in 1887 he applied at the German Hospital, and it was discovered that actinomyces was present in the discharge from several sinuses on the face. He was treated with towels wet with bichloride solution 1 : 1000; and subsequently mercury and belladonna ointment were applied, and had very much improved; there are no actinomyces in the discharge at present. In discussing the pathology Dr. Bodamer said that the microscopical appearances strongly resembled osteosarcoma.

Miscellany.

THE NAVAL MEDICAL EXAMINING BOARD.

This Board is now in session at the U. S. Naval Hospital, Philadelphia, for the examination of candidates for admission into the Medical Corps of the Navy as assistant surgeons. The Board will remain in Philadelphia until the 31st of March, 1889. After the 1st of April, 1889, the Board will hold its sessions at the Naval Hospital, Brooklyn, N.Y.

There are fourteen vacancies in the grade of assistant surgeon. Further information may be obtained by addressing the president of the Examining Board.

PURE AIR FOR PNEUMONIA.

An interesting article under the title "Pneumonia: Its Increasing Death Rate," by Gouverneur M. Smith, M.D., recently appeared in the *Medical Record*. The closing paragraphs are as follows: —

"It is clear, from what has been said, that in the treatment of pneumonia a superabundance of pure air is specifically indicated. The patient's breathing apparatus is only partially performing its functions, as the diseased parts of the lungs are substantially useless. The working portion must perform the work of two lungs for a week or ten days in order to maintain the blood in proper condition to sustain life. The patient requires purer air and vastly more air than one in sound health. In estimating the amount of genial, and possibly moistened, air which should gently and freely pass through the sick-chamber, allowance should be made both for the requirements of the patient and for the requirements of the attendants. The latter should be as few as possible, in order to lessen the chances of aerial contamination.

"Our atmosphere at times is harsh, but it always contains a life-giving element. When exposed to its inclemencies, care must protect from its bitterness, while extracting its sweetening oxygen. When admitted to homes, it can be artificially tempered as a boon to the shorn and to the unshorn. While remedies often behave benignly to human economy, nevertheless, pure air, as a remedial agent in the management of pneumonia and of other disorders, both acute and chronic, has ever been a more important ally of therapeutics than any panacea offered by alchemy, or any hobbledehoy presented by modern chemistry.

"Physicians will constantly meet with cases where, owing to the surroundings of the patients, it is impracticable to carry out the best methods of treatment. If a physician, however, through inadvertence on his part, allows a patient to die from want of fresh air, he deserves a stigma as ignominious, if not as heinous, as that which four centuries ago attached itself to Richard duke of Gloucester, for the crime of smothering princes in the Tower of London."

PERIL INCURRED IN ALPINE WINTER CLIMATES OF RENAL COMPLICATIONS IN PHTHISIS.

The *Lancet* for Jan. 5 contains some observations by Sir Andrew Clark which presumably have the same bearing on Colorado treatment for consumptives as upon an Alpine residence.

"Every one," he says, "acquainted with the natural history of pulmonary phthisis knows that, in a certain small proportion of cases, when the disease is advanced, albumen appears in the urine. But, judging from the accessible literature of the subject, no one seems to have pointed out that the frequency of this renal complication varies according to the anatomical form assumed by the malady. This, nevertheless, is the case. For in what one may be still permitted to call the 'tubercular' variety of phthisis, the percentage of albuminuric cases is small; in the 'pneumonic' or 'caseous' variety, it is larger; and in the 'fibroid' variety it is the largest of all. And, indeed, if I might presume to speak from my own experience alone, I should feel constrained to say that in every case of extensive fibroid induration or fibroid disease of the lung, albumen sooner or later in some amount or another makes its appearance in the urine. Whilst the frequency of the albuminuric complication in phthisis varies according to the anatomical form of the malady, so also does its influence and importance. In the tubercular variety, appearing late and in small amount, the renal trouble exercises but little influence upon the progress or upon the peculiarities of the disease. But in the fibroid variety, appearing late and lasting long, the renal trouble enters, as it were, into the constitution of the disease, and plays an active part in developing its characters, shaping its course, and settling its issues. In the beginning, and in favorable circumstances for an indefinite period, the urine exhibits no conclusive evidences of serious renal inadequacy, and the patient does not sensibly suffer in any way. But under the adverse influences of an unsuitable regimen, of cold, or of prolonged mental anxiety or tension, the amount of albumen in the urine increases, the discharge of urea and of its congeners diminishes, excrementitious matters accumulate in the blood, the patient's health fails, and the perils to life, passing to the kidneys from the lungs, draw near.

"In carefully selected cases of phthisis the value of treatment by residence in high altitudes seems now to have been placed beyond the reach of any just question. But the patients must be carefully selected; and if disaster and reproach are to be avoided, if the just value of high altitudes in the treatment of phthisis is to be maintained, then it is certain that many cases now without due knowledge or due consideration sent to winter at Alpine winter resorts must be kept back.

"From a critical study of the accessible histories of patients whom I have sent, on account of phthisis, to winter in Alpine altitudes, I have learned two important facts which deserve to be known. The first is, that patients who go to those regions suffering from albuminuria seldom do well; and the second is, that patients who whilst dwelling there become albuminuric, almost always do ill.

"From these considerations, and also from others unnecessary to be recorded at present, I venture to suggest, for so long as our knowledge now stands as it does, that no phthisical person with albuminous urine should be recommended to winter at any Alpine height; and that every one beginning to have albuminous urine when dwelling there should be immediately sent away."

SOME RECENT USES OF ANTIPYRIN.

Dr. E. T. Bruen, in the January number of the *University Medical Magazine*, writes thus regarding antipyrin as an antispasmodic: —

It is well known that antipyrin possesses the clinical property of modifying pain in neuralgia, and certain forms of headache. Sonnenberger, abroad, and others in this country, have communicated their results with this drug in whooping-cough, and all have united in ascribing to antipyrin the power to reduce very greatly the number and severity of the paroxysms, and this very early in the course of the disease, before the time had come when the decline of the symptoms was about to begin, and when almost any medicine would apparently do good. My own experience in this respect has fully concurred with that of these observers.

The special object of this note is to direct attention to the efficacy of antipyrin to allay spasmodic cough in cases of influenza with bronchial catarrh, and in some cases of subacute bronchitis. In these cases there are nearly always the physical signs, in the interscapular region, of enlargement of the bronchial glands. This enlargement, as Hamilton, of Aberdeen, has pointed out, is due to the fact that in these conditions the major part of the corpuscular and liquid exudation is absorbed through the pulmonary lymphatic system, because the thickness of the basement membrane of the bronchial tubes prevents these products of the inflammatory process from being poured out into the lumen of the bronchial tubes, and afterwards expectorated. It is true that some of the exudation is expectorated together with the mucin and the epithelial cells, but a large proportion is absorbed by the pulmonary lymphatics, and is carried to the bronchial glands, causing enlargement.

In cases of persistent bronchial catarrh, as in epidemic influenza, or in subacute bronchitis, the enlargement is a very prominent feature, as it also is in pertussis and in some forms of pulmonary phthisis. The enlargement of the bronchial glands causes irritation of the pneumogastrics, and through their pulmonary and laryngeal branches tends to produce spasmodic cough similar to that of whooping-cough, though less violent. It is for the relief of this spasmodic cough that antipyrin is so useful.

For an adult two grains every three or four hours may be used, or twelve to fifteen grains daily. This often will modify the paroxysmal cough; and after two or three days the medicine may be suspended, and again resumed, if, after the lapse of a few days, the symptoms for which it was given should return. In a small portion of cases of asthma it is a very valuable drug to reduce the severity of the paroxysms, and modify their number. In many cases it acts as efficiently as morphia and atropia, and without an injurious result. In asthma five-grain doses until twenty-five grains are taken may be given, especially to strong, robust men.

These facts have been secured sufficiently often in both hospital and private practice, to warrant me in submitting them for general trial. In the painful period preceding the establishment of the menstrual flow, antipyrin is again a useful drug. A five-grain dose should be given, and repeated in half an hour, to secure the relief of pain. This effect of antipyrin is satisfactory until the system becomes habituated to the drug. In these cases moderate doses of antifebrin prove a serviceable substitute. Antifebrin should be given in one-half to one-third less doses than antipyrin.

Windelschmid prescribes enemata of thirty grains of antipyrin before or during menstruation in cases of dysmenorrhœa (*Allg. Med. Ctrl. Ztg. Union Med.*). I have not used such large doses, but have prescribed the drug, using fifteen grains by enema, when the administration by the mouth has failed.

If antipyrin is given as an antipyretic the effect seems to weaken the action of the heart, and to reduce arterial tension, sometimes associated with profuse sweating. These are serious objections, but none of these unfavorable effects of the physiological action of antipyrin were observed in the cases which form the subject of this note.

Correspondence.

A "DICTIONARY SUPERSTITION."

Boston, Jan. 28, 1889.
33 Marlboro St.

Mr. Editor, — I am not quite sure what "antepenultimizing the sthenias"[1] means, for Murray's New English Dictionary says nothing about "antepenultimizing." Still I will admit that "man is greater than a lexicon," and I suppose it means accenting such words as *asthenia* and *neurasthenia* on the antepenult. If that be the case, I must own that I have clung to the "dictionary superstition," and accented these words on the penult with the *i* long. The extract from the New York Medical Record, which you gave in your last issue, led me to wonder whether I were right. I found that Murray gave *asthenía*, and Liddell and Scott the corresponding Greek word used by Plato and Thucydides, ἀσθένεια, meaning "want of strength." My Greek, however, is rather rusty; yet if, at the end of my first week's instruction in Greek, I had ventured to write αλγοσ or σθένοσ, my instructor would have given me a very black mark, — and therefore I sent the editorial in question to Prof. W. W. Goodwin of Harvard, who has very kindly permitted me to publish the following letter: —

CAMBRIDGE, Jan. 25, 1889.

DEAR DR. KNAPP, — It is hard to reason on etymology with any one who thinks that "*sthenia* comes from σθένος, just as *algia* comes from ἄλγος," and that *therefore neurasthenia* should be accented like *neuralgia!*

In both words the first part is νευρ- for νευρο-, the stem of νεῦρον. But in *neur-algia*, the second part of which comes from ἄλγος, *pain*, the termination of the compound is the common ῐα, which appears in many similar terms. But in *neur-asthenia* the last part is itself compounded of α privative and the stem of σθένος, *strength*, and this gives (through an adjective ἀσθενής, *weak*) a noun ἀσθένεια, *weakness*, of which the penult (whether we spell it with ει or ι) must always be long. If we say that *neur-asthenia* is derived from a compound adjective νευρ-ασθενής, this would still give only (νευρασθενε-ια) νευρασθένεια, still ει.

I cannot see, therefore, how it can be correct to accent *neurasthenia* in any other way than as you have given it, on the penult. . . .

Very truly yours,
W. W. GOODWIN.

P. S. The late word σθένεια, mentioned by your writer, is derived from σθένος, but it has nothing whatever to do with such compounds as *neur-asthenia*; moreover, its penult is long.

This seems to me to settle the question; and if, hereafter, the medical profession in New York or elsewhere wish to "go on antepenultimizing the sthenias," they must find some other excuse for so doing than an "etymological justification."

Very truly yours,
PHILIP COOMBS KNAPP.

LETTER FROM ALBERT R. LEEDS, PH.D.

STEVENS INSTITUTE OF TECHNOLOGY,
Jan. 24th, 1889.

MR. EDITOR, — In the Ninth Annual Report of the Board of Health of the State of New Jersey for 1885, as chairman of its committee of analysts, I gave, in my report on "Infant Foods," the analysis among others of "Soluble Food" and some comments thereon.

In the Report of the Dairy Commissioner for 1887 I also gave my official report, containing some eighteen analyses of foods, among these an analysis of "Liquid Peptonoids," with comments thereon. Further in this report, in relation to the analysis of a certain milk food, I classified and described its caseinous composition as similar to the dry milk foods in general, — Carnrick's cited among others of this class.

For exact context, see Dr. Davenport's report, *Medical and Surgical Journal*, August 2nd, 1888.

The quotations of my analyses by Dr. Davenport in the *Journal* have been ostensibly made occasion for the publication of a "circular," which purports to be a revision of my analytical work. This "circular," to which you *simply gave publication*, has been without warrant reprinted and circulated by Reed & Carnrick as a "Correction from the *Boston Medical and Surgical Journal*," etc., and embodied with other matter which misrepresents the case and wrongfully connects my name with both the *Journal* and another Boston publication which has also made quotations from my work.

Permit me therefore, to ask that you will, in pursuance of the spirit in which you have given space to this subject, allow me to state the following facts: —

I. The only matter of the above "circular" at all dealing with the composition of these foods is Prof. Waller's report and Prof. Breneman's letter. These by no means constitute a revision, or correction, of my analyses. On the contrary, my analysis of one of these foods is, in the two principal details, of alcohol and albuminoids, more than corroborated, and with the additional explanation and assurance that no other composition has been possible. Other specific details of my analyses are not even mentioned, while substances which I have neither analyzed nor spoken of are referred to at length.

II. I have had nothing whatever to do, directly or indirectly, with the copying or republication of these analyses by any journal whatever. I have never been accessory, in any sense, to the publication of any analysis or criticism of these two foods by the *Medical and Surgical Journal*, or by the *Boston Journal of Health*. The whole matter circulated by Reed & Carnrick, insinuating or implying connection on my part with these publications of my analyses, is false from beginning to end. It is only recently that I have learned that these quotations have been made from my work.

In years past, both in my official and private capacity, I have made and published many analyses of foods; and in the investigation of this subject I have not seldom had to show that the composition of a food differed from that published and set forth in the analyses and statements with which it was offered for sale. In the treatment of these two foods in question (Soluble Food and Liquid Peptonoids), I have in no wise departed from my uniform course of a criticism based upon facts revealed by careful analyses. As for the severity of my criticism complained of in these two instances, it is perhaps a matter of personal opinion.

Yours very respectfully,
ALBERT R. LEEDS, Ph.D.

[We publish the above letter from Prof. Leeds in simple justice to the writer and to this JOURNAL, and we propose therewith to dismiss a subject of which we have no doubt our readers have had more than enough. — ED.]

DURATION OF INCUBATION AND CONTAGIOUSNESS.

Clinical Society of London,
January, 1888.

Mr. Editor,— Ten years ago the Clinical Society of London appointed a committee to investigate the periods of incubation and of contagiousness of the commoner communicable diseases.

A certain amount of valuable material was received, but it was thought desirable to defer the presentation of a report until further experience was available. The society has now determined to gather additional information with a view to the preparation of an early report on the subject, and for this purpose has reconstituted the committee.

The committee is desirous of obtaining particulars of cases which throw light upon the periods of incubation and contagiousness of the below-mentioned diseases, and will be grateful for notes of any cases where the facts can be ascertained with sufficient precision to afford grounds for conclusions.

It is thought that gentlemen practising at a distance from large centres of population, and especially those engaged in the Public Health Service, or associated with schools, would be able to supply information of the kind required. A single case in which the dates of exposure to infection and the appearance of the first symptom can be accurately fixed, especially where the exposure has been limited in duration, would be highly valued.

The following diseases are included within the scope of the inquiry: —

Variola.
Varicella.
Measles.
German Measles.
Scarlet Fever.
Typhus.
Relapsing Fever.
Whooping-cough.
Diphtheria.
Enteric Fever.
Cholera.
Erysipelas.
Mumps.
Infectious Sore Throat.

The committee consists of Dr. W. H. Broadbent, Dr. George Buchanan, Dr. Cayley, Dr. Thomas Barlow, Dr. Alfred Hill, Dr. Isambard Owen, Dr. Thorne Thorne, Dr. Alder Smith, and Mr. R. W. Parker, with Mr. Shirley Murphy, 41 Queen Anne Street, and Dr. Dawson Williams, 25 Old Burlington Street, W., as Honorary Secretaries, to one of whom communications should be addressed.

I am, etc.,
W. H. Broadbent,
Chairman of Committee.

Early reply would greatly facilitate the work of the committee.

REPORTED MORTALITY FOR THE WEEK ENDING JANUARY 19, 1889.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Typhoid Fever.	Diph & Croup.	Scarlet Fever.
New York	1,526,081	779	357	21.72	16.56	.48	7.08	6.48
Philadelphia	1,016,758	382	104	12.74	9 88	2.08	5.20	3 64
Brooklyn	751,432	358	136	16.80	19.88	.56	8.40	2.80
Chicago	760.000	280	136	15.75	22.75	1.75	8.05	.70
St. Louis	449,160	162	45	16.25	10.40	2.60	6.52	1.30
Baltimore	437,155	142	51	9.80	9.80	2.10	2.80	.70
Boston	407,024	185	55	15.12	19.98	1.62	10.80	1.08
Cincinnati	325,000	102	—	11 76	—	—	8.82	1.96
New Orleans	248,000	119	22	7.74	14.62	—	2.58	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	91	40	10.98	37.62	2.18	3.27	—
Pittsburg	210,000	68	31	11.76	29.40	4.41	4.41	1.47
Milwaukee	200.000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60.145	29	9	—	—	—	—	—
Portland	40,000	12	2	8.33	8.33	—	8.33	—
Worcester	76,328	31	15	3 23	29.07	—	3.23	—
Lowell	69,530	32	11	9.39	15.65	3.13	3.13	—
Cambridge	64,079	22	8	18.20	13.65	—	—	—
Fall River	61,203	25	12	4.00	16.00	—	—	—
Lynn	51,467	16	—	12 50	—	—	6.25	—
Lawrence	40,175	18	7	22.22	11.11	5.55	—	5.55
Springfield	39,952	20	8	35.00	5.00	—	30.00	—
New Bedford	36.298	10	4	—	10.00	—	—	—
Somerville	33.307	2	0	—	—	—	—	—
Holyoke	32.887	—	—	—	—	—	—	—
Salem	28,781	10	3	10.00	—	—	10.00	—
Chelsea	27.552	9	—	—	11.11	—	—	—
Haverhill	24.979	—	—	—	—	—	—	—
Taunton	24.796	7	2	—	14.28	—	—	—
Brockton	24,784	—	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	4	1	50 00	—	—	50.00	—
Malden	18,932	5	2	40.00	20.00	20.00	20.00	—
Fitchburg	17,534	4	1	—	—	—	—	—
Waltham	16,651	5	2	—	20.00	—	—	—
Newburyport	13,839	4	—	—	—	—	—	—
Northampton	13,419	—	—	—	—	—	—	—
Quincy	13,336	—	—	—	—	—	—	—

Deaths reported 2936: under five years of age 1065; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 479, acute lung diseases 482, consumption 372, diphtheria and croup 200, scarlet fever 89, measles 46, whooping-cough 40, typhoid fever 37, diarrhœal diseases 39, cerebro-spinal meningitis 10, erysipelas 9, malarial fever 9. From measles, New York 31, Brooklyn and Chicago 5 each, St. Louis 3, Lynn and Lawrence 1 each. From whooping-cough, Brooklyn 10, New York 9, Baltimore 5, Washington and St. Louis 4 each, Philadelphia, Boston, and Cambridge 2 each, Cincinnati and Pittsburg 1 each. From diarrhœal diseases, New York 19, Chicago and New Orleans 5 each, Philadelphia, Brooklyn, and St. Louis 2 each, Boston, Lowell, Fall River, and Lawrence 1 each. From erysipelas, New York 6, Chicago 3. From malarial fever, New York 5, Philadelphia 2, Brooklyn and New Orleans 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending January 5th the death-rate was 22.7. Deaths reported 4161; infants under one year 892, acute diseases of the respiratory organs (London) 484, measles 314, whooping-cough 108, scarlet fever 64, diphtheria 50, fever 41, diarrhœa 41.

The death-rates ranged from 12.9 in Brighton to 39.2 in Blackburn; Birmingham 22.1; Bradford 22.0; Hull 19.1; Leeds 25.7; Leicester 23.2; Liverpool 29.6; London 21 4; Manchester 28.0; Newcastle-on-Tyne 20.1; Nottingham 20.6; Sheffield 20.3; Sunderland 23.3.

In Edinburgh 16.8; Glasgow 28.5; Dublin 31.3.

The meteorological record for the week ending January 19, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Jan. 19, 1889.	Barometer.	Thermometer			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
Jan. 13	30 37	30.0	40.0	25.0	71	85		78.0	N. W.	S.		2	6		C.	C.			.00
" 14	30.35	28 5	36.0	27.0	89	84		86.0	N	N. W.		13	12		F.	C.			.00
" 15	30.39	27.5	38.0	20 0	54	76		65.0	N. W.	W.		10	10		C.	C.			.00
" 16	30 26	36.5	43.0	28 0	62	88		75.0	S. W.	S.		4	8		O.	O.			.00
" 17	29.69	54.5	58.0	40 0	88	79		84.0	S. W.	S. W.		30	19		R.	O.		21.00	.35
" 18	29.89	37.0	45.0	36.0	74	74		74.0	W.	W.		12	12		C.	C.			.00
" 19	30.35	21 2	28.0	15.0	50	67		58.0	N. W.	N. W.		24	14		C.	C.			.00
Means for the Week																			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

SOCIETY NOTICES.

THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.—The Eighty-Third Annual Meeting will take place in the City Hall, at Albany, on Tuesday, Wednesday, and Thursday, February 5th, 6th, and 7th, 1889.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — There will be a meeting of this Society at 19 Boylston Place, on Monday evening, February 4th, 1889, at eight o'clock. Readers: Dr. E. O. Otis, "Creolin, with Specimens of Creolin Material;" Dr. M. H. Richardson, "Three Successful Cases of Tracheotomy for Foreign Body in the Larynx."

T. F. SHERMAN, M.D., *Secretary.*

THE MIDDLETON GOLDSMITH LECTURE FOR 1889.

The Middleton Goldsmith Lecture for 1889 will be delivered by Reginald H. Fitz, M D., Shattuck Professor of Pathology in the Harvard Medical School, in the Hall of the New York Academy of Medicine, on February 16th, at 8½ o'clock P.M. The subject will be "Acute Pancreatitis, with an especial consideration of Pancreatic Hæmorrhage, Hæmorrhagic Pancreatitis, and Subperitoneal Fat Necrosis."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S MARINE HOSPITAL SERVICE, FOR THE FIVE WEEKS ENDING JANUARY 26, 1889.

CARTER, H. R., passed assistant surgeon. Leave of absence extended six days Dec. 29, 1888.

WHEELER, W. A., passed assistant surgeon. When relieved at Buffalo, N. Y., to proceed to Cleveland, Ohio, and assume charge of the service. January 3, 1889.

URQUHART, F. M., passed assistant surgeon. To proceed to Buffalo, N. Y. and assume charge of the service. Jan. 3, 1889. Placed on waiting orders Jan. 12, 1889.

CARRINGTON, P. M., passed assistant surgeon. Granted leave of absence for thirty days. Jan. 25, 1889.

WILLIAMS, L. L., passed assistant surgeon. Granted leave of absence for fifteen days. Dec. 21, 1888.

PETTUS, W. J., assistant surgeon. Ordered to examination for promotion. Jan. 1[illegible], 1889.

MAGRUDER, G. M., assistant surgeon. To proceed to Louisville, Ky., for temporary duty. Jan 22, 1889.

KINYOUN, J. J., assistant surgeon. To proceed to Baltimore, Md., for temporary duty. Dec 29, 1888.

CONDICT, A. W., assistant surgeon. Granted leave of absence for thirty days. Jan. 25, 1889.

OBITUARY.

DR. WILLIAM G. BRECK.

Dr. William Gilman Breck, of Springfield, died suddenly at Chicopee Tuesday afternoon, January 22nd, of pulmonary apoplexy. Although just passed seventy he was still active in his profession, and died, as most of his professional brethren hope to die, in the midst of his daily work, without previous illness. He had visited patients during the day when he was called to attend Vicar-General Healy, of Chicopee, in consultation, and was taken ill just after leaving the bedside of the patient, dying in twenty minutes, — the patient to whom he was called dying of cerebral apoplexy a few hours later. He was senior surgeon of the Springfield Hospital, an ex-president of the Hampden County Medical Society, and a member and ex-vice president of the Massachusetts Medical Society. He was also for many years surgeon of the Boston & Albany, and New York, New Haven & Hartford Railroads. He was born in Franklin county, Vermont, November 14, 1818, his parents being Joseph and Elizabeth Breck. When he was quite young the family removed to Ohio, and his early education was received in its early days at Oberlin University. As a medical practitioner he first settled in New Orleans, but took up practice permanently in Springfield in 1846. Not feeling fully satisfied with his surgical attainments he left Springfield temporarily, for study in Boston, and received the degree of M.D. from Harvard in 1854. He was specially interested in surgery and had a large consultation practice in the neighborhood of Springfield. During the War of the Rebellion he did efficient service as a volunteer surgeon on many battlefields in attending the wounded. In 1843 he married Miss Mary Vandeventer of Penn Yan, N. Y., who is still living; and he leaves a son, Dr. Theodore F. Breck, of Springfield, who has been for several years associated with him in practice.

CORRECTION. — "STEADINESS OF THE HAND."

The authors wish to make a correction in the article on page 594 of the Journal for December 20, 1888. In the second line the word "average" should read "minimum," — the *average* of both planes being: —

	R.	L.
Eyes open	6.16	5.75
" closed	7.22	7.68

BOOKS AND PAMPHLETS RECEIVED.

Pulmonary Consumption considered as a Neurosis. By Thos. J. Mays, M D. Reprint.

"Don't Tell White Folks," or Light out of Darkness. By James T. Still, M.D. Boston: 1889.

Cases in Orthopædic Surgery. By Ap Morgan Vance, M.D., Louisville, Ky. Reprint. 1885.

The Comparative Danger to Life of the Alternating and Continuous Electrical Currents. By Harold P. Brown.

Address.

ADDRESS BEFORE THE BOSTON MEDICAL LIBRARY ASSOCIATION.[1]

BY OLIVER WENDELL HOLMES, M.D., LL.D., ETC.

Gentlemen of the Boston Medical Library Association, —

The books which I have offered to the association, and which you have kindly accepted, constituted my whole medical library, with the exception of a very few volumes, which, for special reasons, I retain for the present, and of a considerable collection of medical pamphlets which I shall send if the librarian can find room for them.

This collection has grown by a slow process of accretion during nearly threescore years. The first of these books which I remember owning is Bell's "Anatomy;" the last accession is the beautiful little volume which I bring with me this evening, "Elements of Pharmacy, Materia Medica, and Therapeutics, by William Whitla, M.D., physician to the Belfast Royal Hospital, fourth edition." I have not counted the number of volumes, but the librarian informs me that there are something over nine hundred. The list of titles reaches twelve hundred and thirty-one, but the same book is in many instances given under different headings. The oldest book in the collection is a black-letter copy of Avicenna, dated in 1490; the most recent 1887, — so that they cover very nearly the space of four centuries. Most of these volumes I have bought, but a considerable number have been presented to me by their authors or by friends. I trust that those of my friends who may chance to see one or more of the books they have presented me on these shelves will not think I have forgotten their kindness in allowing their gifts to follow the fortunes of the little mob of volumes in whose company they found themselves.

The most interesting parts of a miscellaneous medical library are its oldest and its newest portions. Between these is a long, dreary interval, filled up by books not old enough to be curious or even rare, and not new enough to represent the existing state of knowledge. I am thinking especially of works on practical medicine. We care nothing, or next to nothing, for the speculative notions of such writers as Forestus and Fernelius. The theories of Stahl and Van Helmont, of Hoffman and Boerhaave, the conflicts of the Brunonians and the adherents of Cullen, mean as little to the physician of the present as the farrago of remedies with which they puzzled the astonished and indignant viscera of their patients. Still, something may be gained from these obsolete and utterly neglected writers. They were not all fools because they had not the wisdom which comes with the knowledge of a later day. There were, and are always, men of common sense — good, strong, coarse common sense — in the medical profession. Sydenham was one of these. I believe I have hardly ever delivered a medical address in which I have not referred to the "roast chicken and pint of Canary" which he prescribed for a patient affected with what a Dublin physician might probably call "male hysteria." I have always thought it a stroke of genius in Dupuytren — if the idea was original with him, but I have an impression that it was borrowed from an earlier authority — when he ordered a patient to drink the milk of a goat which had been rubbed with mercurial ointment, the patient having a dread of mercury as commonly administered. That was a kind of infinitesimal dosing, and I have no doubt that the patient got as much good from the mineral in the goat's milk as the Sultan did from the drugs in the handle of the bat with which he exercised every day until he was in a free perspiration. But Sydenham's prescription was the best lesson the over-drugging doctors ever got, unless it may be from watchful mothers and keen-witted, observant nurses.

As I have referred to the infinitesimal dosing business, let me remind you that if you wish to understand the pseudo-scientific vagaries of to-day you will find more instruction in the "Ortus Medicinæ" of Van Helmont than in any other old work with which I am acquainted. The infinitesimal, or make-believe, dosing is to be found in the chapter entitled "Butler." Butler was an Irishman in a Belgian jail, where Van Helmont found him. He had a pebble which he used to dip in oil, then take a teaspoonful of that oil and add it to a small flask of the same oil and apply one drop of this to the ailing part. Then he would give his pebble a lick with his tongue, and clap it in his waistcoat pocket. This whole chapter, "Butler," should be read by the student of Hahnemann and by all intelligent students of medical history. The doctrine of the "mind cure" is abundantly illustrated in other chapters of the "Ortus Medicinæ," the date of which in my copy, now yours, is 1652.

Do not look with contempt, then, on such of your old books as seem to be mere treasuries of unwisdom. The *débris* of broken systems and exploded dogmas form a great mound — a *Monte Testaccio* of the shards and remnants of old vessels which once held human beliefs. If you take the trouble to climb to the top of it you will widen your horizon; and in these days of specialized knowledge, your horizon is not likely to be any too wide.

No doubt there are many rusty old volumes in this collection which will rarely, if ever, be taken from the shelves except to be spanked and dusted. Do not grudge them the room they take up. Once or twice perhaps in a score of years some curious student may open the book containing the record of cases treated by Riverius, as he called himself in Latin, a noted physician of the first half of the seventeenth century. He will see in the same pages one recipe with the cloven-footed ℞ which he uses in his own prescriptions, and another prescription with the astrological sign for Jupiter from which it was imitated. He has hardly realized before, it may be, that in writing the letter for *Recipe* as he does, he is appealing to a heathen deity to bring good luck to his remedy.

There is a formidable phalanx of grand old folios which give dignity to the lighter volumes beneath which they gravitate to the lower shelves. There are the huge volumes of Galen, with the appalling "Index" of Brassavolus; there is the solemn "Sepulchretum" of Bonetus; there are the two stately and richly dressed volumes of the "Artis Medicæ Principes," which came from the library of Jules Cloquet;

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[1] Delivered to the Association at the formal presentation of Dr. Holmes's medical library, Jan. 29, 1889.

there is the wonderful collection of rare and interesting cases of Schenckius; there is Ambroise Paré, a good copy in the original French, which is not always easily to be procured — my order was out some time in Paris before I could obtain it, and that was more than fifty years ago; there is Wigan's edition of Aretæus, a good specimen of what Oxford could do in the way of printing a century and a half or more ago. A little higher up in the shelves you will find Vanderlinden's Hippocrates, Cælius Aurelianus, Celsus, the works of Morgagni, the score of quartos in which Haller has left the impress of his lucid and richly stored intelligence, and many other works of earlier or later date which are not like to be worn out by handling, but may now and then be consulted for some special purpose by a scholarly practitioner or a curious student of medical history.

More interesting than most of the old medical books are the illustrated works on Anatomy. The splendid plates of Albinus show the muscles as no other work that I am acquainted with has ever shown them. The old folio edition of Vesalius must be interesting to every student of Anatomy. The figures in the huge volume of Spigelius will alway attract attention, for the grace and beauty of the females who display their viscera as if they were their jewels and laces. These are not likely to be overlooked by the lovers of undisguised nature and naked truth. Mascagni's representations of the lymphatics, Soemmering's pictures of the organs of sense, Bonamy and Beau's colored plates of the bones, ligaments, and muscles, and Hirschfeldt's and Leveillé's illustrations of the nervous system, are worthy of special notice. Among the general works which may repay occasional consultation I will only mention the entire series of the "British and Foreign Medical Review" while under the editorship of Sir John Forbes, and the "Compendium de Médecine Pratique," in eight large octavo volumes. I have spoken of a few of these books which occur to my recollection. The names of Avenburgger, Bayle, Corvisart, Andral, Louis, Chomel Rostan, Bouillaud, are represented in a series of scientific and practical treatises, valued in their day and generation, not wholly valueless, by any means, at the present time.

But the practitioner of to-day who has a few manuals on his shelves, and takes one or more of the best journals, American or foreign, — both if possible, — can get along with a very moderate library. A working physician is very apt to come under one of the two following categories: he is either an optimist, satisfied with his old remedies and formulæ; or he is in a state of chronic discontent with his drugs and mixtures, and constantly on the lookout for something which will *do* what so many other things have promised to do and failed. New remedies keep coming up in the journals, like new shoots in asparagus beds; and they must have those that have come up last, as they want their asparagus cut fresh every morning.

Since medicine has run into specialties, as it did thousands of years ago in Egypt, there must be forming great numbers of private libraries, more or less complete on their particular subjects. We may hope that in time all the important branches of medical science and practice will be fully represented on our shelves. But the enormous amount of material already accumulated in many special departments would be of comparatively little use without indexes to point out the way to find what is wanted. The great "Index Medicus" prepared at Washington, under the direction of the admirable Dr. Billings, is the master key to the storehouses of knowledge, which without it few would ever have even tried to open.

These books were very dear to me as they stood upon my shelves. A twig from some one of my nerves (as I remember saying long ago) ran to every one of them. From the time when I first opened Bell's "Anatomy" to that in which I closed my Sharpey and Quain and my Braithwaite's "Retrospect," they marked the progress of my studies, and stood before me as the stepping-stones of my professional life. I am pleased that they can be kept together, at least for the present; and if any of them can be to others what many of them have been to me, I am glad to part with them, even though it costs me a little heartache to take leave of such old and beloved companions.

Original Articles.

OBSERVATIONS ON THE USUAL METHODS EMPLOYED FOR MODIFYING THE ALBUMINOIDS OF MILK IN INFANT FEEDING.[1]

BY T. M. ROTCH, M.D.,
Assistant Professor of Diseases of Children, Harvard Medical School; Visiting Physician, Children's Hospital.

A great deal has been written, and much stated in every-day practice by physicians, concerning the coagulum which is formed in milk, both human and of the cow. The opinion is held by a number of writers, and very generally believed by physicians at large, that the curd of cow's milk is made finer and to correspond more closely to human milk by means of certain adjuvants such as lime water and barley water; also that the various cereals, whether in the form of starch as in bread crumbs, flour, or Imperial Granum, or in a converted form as in Mellin's Food, possess the property of breaking up, or rather preventing from forming in large curds, the coagulum of cow's milk.

I am at present engaged in a more exact series of experiments on this coagulum, which I hope to conclude later in the winter. To-night I will merely give the results of the work which I have already accomplished on this subject, and which leads me to believe that the views which have heretofore been held concerning the various diluents and attenuants used in modifying the albuminoids in cow's milk are not only theoretical, but incorrect.

Human milk and cow's milk both contain, as a part of their solid constituents, certain nitrogenous matters. The exact chemistry of these nitrogenous matters has not yet been satisfactorily determined, but in a general way it is allowed that their total amount is in human milk from 1 to 2 per cent., and in cow's milk 4 per cent.; also that a part of these nitrogenous matters is coagulable, and a part not coagulable; also that a part of the coagulable portion consists of a chemical combination called casein; also that the non-coagulable portion of the nitrogenous matters in human milk is greater than the coagulable, while the reverse of this is true of the nitrogenous matters in cow's milk. This difference in the coagulable quality of the two milks has, so far as I can judge, drawn the attention of clinical observers too exclusively to the endeavor to break up, as they express it, the larger curd of cow's milk by the means above spoken of. My own belief has long been, that practically for the successful feeding of the young infant with cow's milk (so far as the coagulum is concerned), it is quite as, if not more, important to consider that, the total amount of these nitrogenous matters being two to four times as great in cow's milk as in human milk, it is more practical to dilute these matters in cow's milk until the dilution corresponds to that found in human milk, and that then the coagulum will be found to correspond very closely to that of human milk, and will not require to be broken up. An instance which seems to show that this reasoning is practical has recently come to my notice. It is often stated that the curd of human milk is small, soft, and easily broken up, while that of cow's milk is large, tough, and tenacious, so that we should add something to the latter to make the curd fine and friable. These characteristics of the two curds I have found to be present where the milk is in a comparatively normal condition as to the percentage of its albuminoids.

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[1] Read before the Obstetrical Society of Boston, Dec. 8, 1888.

When, however, the percentage of albuminoids in human milk reaches that which exists in cow's milk, we find a curd with the characteristics of cow's rather than human milk, as I found exemplified in the following instance referred to above. An infant seven days old, and unusually vigorous and well developed, was provided with the milk of a healthy wet nurse, who had been accustomed to plain but good food. An analysis of the milk made just before it was given to the infant showed the albuminoid percentage to be 2.53 and the water 89.78. The milk was digested perfectly, and the infant throve for the following three weeks. During these weeks, however, the diet of the nurse was changed from the plain food to which she was accustomed, to a much greater variety and amount, and to very rich milk, her usual exercise also being lessened. The infant then began to vomit thick curds identical in appearance and toughness with the curds of cow's milk. An analysis of the milk was then again made, and the albuminoids found to show the high percentage of 4.61 and the water to be 83.50. The nurse was then fed on plainer food and skimmed milk, and the infant soon ceased to vomit. A third analysis of the milk now showed the albuminoids to be decreased again to 2.9. The following figures speak for themselves: —

ANALYSES OF WET NURSE'S MILK.

	I. Just before change of food. Infant did well.	II. Rich food for 3 weeks. Infant vomited.	III. Plain food, Infant did well.
Fat	0.72	5.44	5.50
Sugar	6.75	6.25	6.60
Albuminoids	2.53	4.61	2.90
Ash	0.22	0.20	0.14
Total solids	10.22	16.50	15.14
Water	89.78	83.50	84.86
	100.00	100.00	100.00

This case is also interesting in view of the statements made by certain German authorities, notably Escherich, that the young infant can digest the high percentage of albuminoids in cow's milk provided that the milk has been sterilized. The milk in this case was certainly sterile, but it did not agree with the infant when it attained the albuminoid percentage of cow's milk, and did agree perfectly when this percentage was reduced to correspond more nearly to human milk.

This case would also seem to point towards simple dilution with water as the most practical way of managing a thick, tenacious curd, for it was certainly by increased water in the wet nurse's milk, and not by alkaline diluent or cereal attenuant that the curd was rendered more digestible. As, however, it seems to be pretty generally held by physicians that some such chemical and mechanical means are necessary, the next question is, Do such diluents and attenuants accomplish the results which are claimed for them? One of the latest writers on this subject says, "Firm clotting may be prevented by the addition of an alkali or a small quantity of some thickening substance, such as barley water, or one of the digestible prepared foods." This statement seems to be pretty generally accepted, as does also the following, that "Lime water is the alkali usually selected, and that it acts by partially neutralizing the acid of the gastric juice, so that the casein is coagulated gradually and in small masses."

In lime water we undoubtedly have an alkali which can readily be used for neutralizing the acidity of milk without changing the percentage of the ash, the oxide of lime in the lime water being so infinitesimal that it can safely be left out of the question in the chemical result.

The table which I will now ask your attention to will explain the results which I have come to from my experiments with lime water, namely, that it is useful simply to render acid cow's milk alkaline, and that its alkaline properties do not seem to influence the size and tenacity of the curd any more than does plain water; hence that the coagulum grows smaller on account of there being less nitrogenous matter to coagulate, when we gradually dilute cow's milk, just as it did with woman's milk in the case of the wet nurse above spoken of.

The results as tabulated were verified by compe-

COW'S MILK TWENTY-FOUR HOURS OLD.

1.	Woman's milk	no curd seen.
2. 3. 4.	Cow's milk raw " " boiled " " sterilized by steam	large curds.
5	Cow's milk — 2 parts Water — 1 "	curd finer than 2, 3, and 4
6.	Cow's milk — 2 parts Lime water — 1 "	curd same as 5.
7.	Cow's milk — 2 parts Water — 1⅛ "	slightly finer than 5 and 6.
8.	Cow's milk — 2 parts Barley water — 1 part	same as 7
9.	Cow's milk — 1 part Water — 4 "	finer than 7 and 8.
10.	Cow's milk — 1 Cream — 2 Milk sugar 3.18 } Water — 1 pint } 3 Lime water — 1 } Water — 3 } 2 8	a very fine curd, finer than 9.
11.	Cow's milk — 1 Water — 5	no curd seen.

tent observers in the laboratory. Equal volumes of fluid in test-tubes. Ten drops of acetic acid added to each test-tube. Each test-tube inverted slowly three times, so as to insure thorough, equal, and uniform mixing in all.

Taking up this table a little more in detail, we see that there was found to be no difference in the coagulation of raw, boiled, or steamed milk; also that practically the size of the curd depends on the dilution of the albuminoids, rather than on any especial property belonging to the substance with which the dilution is made. With lime water the result is the same as with water in equal amount, and barley water only shows a fractional difference from the results with plain water. In these experiments also there was found to be no perceptible difference as to the rapidity of the coagulation of the different fluids, and that cow's milk taken directly from the udder was found to coagulate in just as large curds as when twenty-four hours old. It might also be added that when a few drops of mercuric nitrate solution was added to human milk, a decidedly larger curd was formed than when this reagent was added in the same way to cow's milk diluted one part to five of water.

In order to see if the statement so often made that attenuants act mechanically by getting, as it were, between the particles of the coagulum during coagulation, and thus preventing their running together and forming a large compact mass, I have lately experimented as follows with various substances: —

In each of six test-tubes of equal caliber and containing 5 c.c. of hot water, 10 c.c. of milk was placed. In test-tubes 2, 3, 4, 5, and 6 was added equal portions respectively of Mellin's Food, Robinson's Barley, Imperial Granum, cracker crumbs, and bread crumbs.

The albuminoids were coagulated as before with acetic acid, and the following results were obtained:

Test-tube.		
I.	Hot water and milk	finest curd of all.
II.	" " and Mellin's food	not so fine as I.
III.	" " " Robinson's barley,	about like II.
IV.	" " " Imperial Granum,	not so fine as II. and III.
V.	" " " cracker crumbs	not so fine as IV.
VI.	" " " bread crumbs	" " V.

There was no doubt but that where no attenuant was added the curd looked decidedly finer, while, where attenuants were used, there was not a great deal of difference between the substances employed, excepting the possibly rather larger curd according as the attenuant contained a larger percentage of starch. We may conclude, then, until something more definite is known concerning this rather theoretical method of treating the albuminoids of milk, that dilution with plain water is the most practical and efficient means at our command.

A CASE OF PERNICIOUS VOMITING OF PREGNANCY, RESULTING FATALLY.[1]

BY R. A. KINGMAN, M.D.

It is by no means a pleasant task that devolves upon me this evening, nor have I found the preparation of this paper a light or simple duty, for it is in great part the account of the prolonged and excessive suffering and ultimate death of a warm personal friend, — the record of my own anxious and earnest effort, with its crowning failure.

It is not my intention to weary you with any exhaustive review of the literature of the subject, nor even to attempt an enumeration of all the later theories and methods of treatment brought almost daily to our notice. I desire simply to report as briefly as possible, without slighting important detail, a case of "pernicious" or "incoercible vomiting of pregnancy," which it was my privilege to watch with extreme minuteness almost from the first, and, with scant reference to the writings of others, to draw certain deductions both as regards causation and treatment, — prophylactic, palliative, curative.

Mrs. A. P., twenty-four years old, primipara, had been under my professional observation for some four months previous to her pregnancy. When first called it was to attend her during an attack of acute follicular tonsillitis, which was speedily followed by a short but sharp attack of acute rheumatism, showing itself in the left knee. The patient was well built, but plethoric, weighing about one hundred and thirty-five pounds; had a good constitution, and, except as described here, was never sick. While of sensitive disposition, hers was by no means a nervous temperament. At about the age of sixteen years, on returning home from boarding-school, where she had devoted herself very closely to work, she is said to have slept continuously for nearly forty-eight hours, resisting the efforts made to awaken her, but rousing sufficiently to take food.

Her habits as regards eating were irregular and ill-advised, so that occasional attacks of acute indigestion were experienced, and the stomach was prepared to behave in the refractory manner to be related. For years she had practised tight lacing to a most injurious extent; the fact that her corsets measured but nineteen inches indicating poorly the degree of compression exerted in one of her build. It was not until after the vomiting had existed for a long period that I learned of the previous menstrual history. Menstruation, always painful, had during several years past grown markedly worse. She described the suffering endured at such times as intense, frequently necessitating the hypodermic use of morphia. The pain was chiefly abdominal, being constant, with occasional cramp-like exacerbations. Backache during the intermenstrual period was sure to follow long standing or unusual exertion. No advice was ever sought for the relief of the conditions giving rise to this pain, as the latter was supposed to be the usual and necessary accompaniment of menstruation. The flow was perfectly regular and of normal amount.

During and after the attack of rheumatism mentioned above, a soft systolic murmur was heard over the mitral valve. The pulse was moderately accelerated, but came down under the use of digitalis. Occasional præcordial pains of a lancinating character had been noted for some years, but whether of cardiac or gastric origin was not determined. They were infrequent after she came under my care, and were relieved by nitroglycerine in one-hundredth grain doses.

Menstruation occurred for the last time from May 23rd to 28th. Nausea made its appearance within four weeks from that time. It was most marked in the morning before rising, and almost from the first came on before rising. She would be awakened from her sleep at 4 or 5 o'clock by the intensity of the nausea, would retch violently for from half an hour to two hours, raising at the most a little mucus and bile. The time of waking became earlier and earlier, until after two months it was 2 o'clock A.M. Cocaine in small repeated doses and in large single doses had no effect. Cerium oxalate in large doses was useless. Chloral by rectum gave slight relief for a time.

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[1] Read, by invitation, before the Obstetrical Society of Boston December 8, 1888.

Throughout this time and up to Friday, August 23rd, nausea during the day was allayed by taking food. She was then at a seashore resort in Maine, where she had been visiting relatives for a month. Her general condition remained good, and except for the occasional nausea she felt well.

On Thursday, August 22nd, she was feeling better than usual, and made and received a number of calls, besides taking a long drive. That evening she drank a tumbler of molasses and water for the relief of a slight constipation. This she had usually combated with a pill of cascara sagrada, which had always acted well, and had prevented any marked constipation. Friday morning the bowels acted freely. This morning, however, nausea developed at the breakfast table, and resulted in persistent vomiting. During the day Mrs. P. remained dressed, lying upon the lounge, and repeatedly took food, but always with the same result, — it was immediately rejected. From this time on nausea was constant, vomiting and retching almost incessant. Gruel was sometimes retained in small quantity, but was taken with reluctance. Bile appeared in much of the vomitus, and sometimes a little blood or coffee-ground matter.

The following Wednesday evening, five and a half days from the onset of the severe symptoms, I saw her for the first time during that period. The change in her appearance was startling. The alteration lay not so much in the fact of wasting as in a change of countenance, — the customary expression of buoyant happiness having been exchanged for one of intense distress and settled despair. The local physician had considered the case one of fæcal impaction with gastritis and hepatitis, and had treated accordingly. She had been given powders containing bismuth and small doses of calomel and morphia. At the same time persistent efforts had been made, with partial success, to remove the fæcal mass by repeated injections of a solution of magnesium sulphate. During the day of my arrival the injection had brought away a small quantity of hardened fæces in black fragments. No improvement in symptoms had followed.

The patient was evidently in a state of great exhaustion from lack of food, suffering, and loss of sleep. My thermometer was at home, so the temperature cannot be given; but it was apparently raised a degree or a little more. The pulse ran from 115 to 120. The abdomen was universally sensitive, pain on pressure being especially marked over the stomach and in the uterine and ovarian regions.

My effort was at once directed to giving relief and gaining rest. Morphia, gr. ¼, was given subcutaneously, and was repeated in an hour. About six hours of sleep was gained in this way, interrupted by frequent attacks of vomiting. When awake there was only partial relief from nausea.

The following day nothing at all was allowed by mouth, a large amount of nourishment being taken by rectum. Six eggs, a little milk, and about half a pint of digested beef were retained in this way. By way of explanation, and to avoid future repetition, I may state here that throughout the course of the illness there were given daily four or five nutrient enemata, very few out of the whole number being rejected. The beef was digested by the use of ext. pancreatis, the resulting mixture containing rather more than half its weight of beef. Part of the time the beef was omitted, it being somewhat irritating to the rectum.

A vaginal examination showed the uterus low in the pelvis, anteflexion of body and cervix, the posterior lip being flattened against the floor of the pelvis, the anterior lip elongated and projecting in the axis of the vaginal outlet. The uterus and both ovarian regions were very sensitive on pressure, the left side being at all times the most painful. In the knee-chest position the uterus dropped forward above the brim, and was retained there by a light packing. The cervix was found much eroded, angry in appearance, and sensitive.

The next day the condition remained much the same. The packing was removed and the cervix swabbed with a 10% solution of silver nitrate. Almost immediately the patient exclaimed, "Oh, what a load is gone from my stomach!" The relief, unfortunately, was short-lived, and another application twenty-four hours later produced no result.

Chloral, gr. xxx., was added to the evening enema. About six hours of sleep in the aggregate results from two hypodermic injections of morphia, gr. ⅓ each. One or more injections have also to be given during the day, to relieve the intense distress which otherwise is constant. Half a grain of cocaine in solution given by the mouth often quiets the distress in the stomach, and removes the sense of a "lump in the throat."

Saturday, September 1st, she began the use of hot douches, which were continued somewhat irregularly during the subsequent treatment. An ineffectual attempt was made to move the bowels by omitting morphia, and giving calomel by mouth, and castor oil by rectum. The patient complained of pain in the left shoulder and hip, supposed to be due to exposure and strain during efforts at vomiting.

On Monday, two days later, the painful joints and the right knee are the seat of a severe attack of acute rheumatism. There is pain also in the other shoulder and in the region of the heart. Pulse 135. Marked sensitiveness over the uterus. Large doses of sodium salicylate were given on this and subsequent days in each enema, also tr. digitalis, gtt. x. Used morphia very freely during the day and night.

According to previous arrangement, the patient was moved to Boston the following morning, there being reasons which made such action almost imperative. Large doses of morphia were used, and hot gruel was drank and retained during the journey. She was taken to a private hospital in this city to be near me, and that she might be more readily cared for than at home.

The effect of the change was at once noticeable in the altered nervous state. Here there was no slamming of doors. The trying noises unavoidable in a wooden country house were absent. She was no longer a care to friends, but was waited upon by paid nurses. Though very tired, she was in a state of nerve quiet or rest such as I had not seen before. Poultices were applied to the knee and abdomen. Chloral, gr. xxx., was given at night and a reduced quantity of morphia. The next day there was perceptible improvement in every respect, and from that day there was a rapid gain. Valerianate of cerium, gr. i., was given by mouth four times daily.

Examination of the heart at this time revealed a normal apex beat, and a soft, blowing, systolic murmur at the mitral valve. The urine was concentrated, and contained a little bile pigment, but no albumen.

On Friday the cervix was again treated with silver nitrate. It was bleeding at minute points upon the eroded surface. The bowels moved several times, but the dejections consisted only of the remains of enemata.

Sunday, September 9th, morphia was omitted until night; calomel, gr. iv., was given in the morning, and an enema of castor oil in the afternoon. A good fæcal movement was the result. From Sunday night until Tuesday night vomiting was entirely absent, the patient enjoying several light nutritious meals in the interval. A slight jaundice, which had been present for several days, disappeared entirely, and nausea was slight. Valerianate of cerium gave out on Monday, and was not renewed. No morphia was given Monday night.

From Tuesday night the nausea rapidly increased. The vomitus consisted chiefly of intensely acid fluid containing frequently small quantities of bile, and occasionally being streaked with blood. Soda mint tablets partially relieved the sense of distress and burning in the epigastrium. All food by the mouth is now refused, water both cold and hot being craved and taken frequently. Wednesday the application to the cervix was repeated, the surface being once more red and sensitive. All poultices have been discontinued.

On Friday an effort was made to move the bowels, the same means being used as previously. No result being obtained, the attempt was repeated on Saturday. Three injections containing moderate doses of castor oil were retained during the afternoon, but a large injection of warm water given late in the evening caused a copious movement, containing, however, no faecal matter. Morphia and chloral were given at once, and a fair night's sleep was obtained.

Sunday, September 16th, she was made easy by the use of morphia, and slept much of the time. The cervix was again treated. A half-ounce of sweet oil was added to each enema, extractum pancreatis and bicarbonate of soda being also added to aid in absorption. Valerianate of cerium was again ordered, there being a possibility that it was a factor in the previous improvement.

Monday morning there were two good fæcal movements, which occurred spontaneously. The skin began to clear at once.

Tuesday I treated the cervix, and packed in the knee-chest position, the uterus being again low in the pelvis, and sharply anteflexed. The symptoms improved for a time, and then returned as before. Wednesday morning the packing was removed, and the uterus supported by an inflated ring pessary, a little packing being placed under the anterior edge to assist in tilting back the fundus. Relief was again experienced; but vomiting returned in the evening, and was continuous until the cotton was removed and the pessary readjusted. After this there was no vomiting and very little nausea, until thirty-six hours later.

Sulphate of codeine, gr. ii., was given in the injection Wednesday night to replace the morphia. The use of sodium bromide was also begun on this date, sixty grains approximately being given daily by rectum. Thursday she was comparatively comfortable, but the mind did not seem quite so bright as before. This befogged condition was more marked on Friday, the patient continually falling asleep. One grain of codeine sulphate is to be given by rectum each afternoon, the amount of morphia being correspondingly diminished.

During the day vomiting returned, and by afternoon became so severe that the pessary was removed and a solid rubber ring having a larger central opening was substituted. The contact of the first had caused a superficial slough to form on the eroded surface of the cervix. This was touched with the silver nitrate solution. Relief from vomiting was had at once, and continued until Saturday evening.

Sunday, September 23rd. Vomiting occurred once in the early morning. Mind continues as before. Dr. Elliot saw her with me in the afternoon. As a result of the consultation it was decided to omit chloral altogether, to cut down the morphia to the smallest amount possible, but to continue the bromide, pushing it, if necessary, even more fully. The codeine had already been omitted. It was not thought best to interrupt the pregnancy, but to bear that means constantly in mind for immediate use when indicated.

That night morphia, gr. ¼, and bromide, gr. lx., were given with the enema; but as the latter was retained only three-quarters of an hour, only a part of each could have been absorbed. The dose of bromide was repeated in the morning enema.

At the morning visit on Monday it was noticed that in addition to increasing stupidity and sluggishness of thought and speech, there was a papular eruption on the face and neck. The conclusion was jumped at that the condition was one of bromism, and accordingly the bromide was omitted. Two small cups of coffee were taken during the day and retained. Morphia was given twice during the day in quarter-grain doses subcutaneously. Churchill's tincture iodine was applied to the cervix. In the evening the patient was very bright and comfortable. Ordered two grains of calomel to be repeated in the morning.

Tuesday morning, after a good sleep, the patient woke at 4.30 o'clock, and had a loose dejection, which was followed by vomiting of bile. At the morning visit she was looking badly, and was flowing slightly. The bleeding was from the cervix, due to the partial separation of the slough, and was stopped by the use of the silver solution. The pessary was removed. She dozed at intervals during the day, and occasionally vomited bile and mucus without much straining or distress. Dr. F. W. Johnson saw her in the morning, and advised against the production of miscarriage. He favored a continuance of the small doses of morphia.

During the night the bowels moved twice, the first dejection being watery, the second natural. Wednesday she had a quarter grain of morphia twice. In the evening she was decidedly brighter, and the pulse was steady at 97. The rubber ring was replaced in the morning, as the uterus was found re-entering the pelvis, and the cervix flexed. Silver nitrate again applied. Had a pretty comfortable day, with very little vomiting.

On Thursday, after a poor night, the uterus was felt to contract strongly under the hand. It seemed rather smaller than at the beginning of the week. The vaginal discharge was offensive, doubtless owing to the slough on the cervix, as the odor ceased after a very weak vaginal douche of corrosive sublimate.

Friday morning, being detained by another case, I did not see Mrs. P. until about noon, so was not present when the following symptoms were noted by the nurse and husband. After having had three loose dejections the patient vomited profusely over the bed-clothing and her night-dress, necessitating an entire change. She was then very weak, appearing almost in collapse. The pulse was found to be very feeble, irregular, intermittent, fluttering. During the day after my arrival she did not look badly, even when the heart's action was worst. At times the pulse was perfectly regular and of fair strength, changing suddenly, and without apparent cause, to a condition of irregularity which was very puzzling. Part of the beats were strong and full, others very weak and rapid.

Dr. Johnson saw her again at 4.30 P.M. and found her looking brighter than on his previous visit. The pulse was regular and of good force. He declined to advise miscarriage, but as the vomiting continued he suggested thorough dilatation of the cervix on the following morning. Morphia as before steadied the pulse and gave rest and comfort.

Saturday morning I stretched the cervix moderately with an Ellinger dilator, and inserted a tupelo tent up to the internal os, retaining it by a light packing. Very little pain followed the operation. The tent was removed in the afternoon and the finger pressed easily to the internal os. This was now dilated with the instrument.

The bowels moved twice in the morning, but the nutrient enemata are well retained. The pulse is much steadier, but is still bad at times. Brandy, ℥vi., has been added to each enema since yesterday, and is to be continued.

In a conversation with Dr. Doe, preliminary to his visit in consultation, he suggested a "nervous heart" as a possible explanation of the peculiar pulse, and proposed a return to bromide of sodium. This was given in a dose of gr. xxx. in the evening, and gr. xx. at 2 A.M., always by rectum, in combination with nourishment.

Dr. Doe saw her in consultation on Sunday morning, September 30th, Drs. Elliot and Johnson not being able to join us by reason of absence from town. He found her with good pulse, bright, hopeful, fairly comfortable. There had been no vomiting since the previous evening. No heart murmur could now be detected. His advice was strongly against interfering with the pregnancy. Chloral. gr. xv., and bromide, gr. xxx., three times daily were suggested, also the use of small quantities of champagne and barley water, or beef juice by the stomach.

These suggestions were carried out. Small doses of champagne, and of champagne and barley water, were taken at short intervals and retained. There was occasional vomiting during the day, unaccompanied by much nausea. On the whole the patient was quite comfortable.

Monday she seemed better still. Pulse 72, regular and full. Temperature normal. The uterus was supported by a packing placed wholly in front of the cervix, in accordance with the plan agreed upon at the consultation. The urine on examination showed no departure from the normal.

Tuesday morning she had two callers from a distance, and seemed very bright and cheery, but after they left her mind showed the same befogged condition of the previous week. Bromide and chloral were omitted at once. Often the mind wanders a little, yet is easily recalled and acts rationally. In the evening the bowels moved twice and abdominal pain was complained of. The uterus was hard and sensitive on pressure. Morphia gave a good night up to 3 A.M., after which time pain kept her awake.

Wednesday morning I found the uterus contracting vigorously once in four or five minutes, the pains being acute and the whole lower abdomen sensitive. At 9.30 A.M. she was given a quarter grain of morphia, and after it obtained two hours' quiet sleep. The mind is rather more wandering than yesterday, yet usually she answers rationally when spoken to. Pulse 90.

At noon I removed the packing, and found the intact membranes bulging through the external os, the fœtal head being engaged in the cervical canal. Ether was offered, but not being agreeable was withdrawn after a few whiffs. Pains continued of fair strength, but not so bitterly complained of as in the morning. Moderate hæmorrhage occurred several times, but was never of much consequence.

At 3 P.M. ether was sparingly administered by Dr. Temple, the patient placed upon the table, and the uterus emptied rapidly. The fœtus was almost wholly in the vagina, having occupied that position for nearly two hours. The placenta was strongly adherent to the fundus of the uterus, and portions remaining behind after its extraction were torn away by the finger. The whole operation did not occupy more than five minutes. The vagina and cervix were irrigated with sublimate solution 1 to 4000. An enema of egg, brandy, and ergot was given, and the patient was put to bed, and surrounded by hot-water bottles. Garrigues, antiseptic occlusion dressing was applied.

The fœtus evidently corresponded to about four months of pregnancy, and was presumably male. It was macerated, and presented in parts a brownish discoloration. It had apparently been dead for several days, and my own belief is that the death occurred as early as the previous Thursday (six days), when the contraction was felt and the diminished size of the uterus noted.

The indications for operation were the increasing exhaustion and the cessation of progress. The firm and high attachment of the placenta seemed to me to prove the wisdom of the procedure.

She was soon able to look about the room, though she did not speak. She appeared perfectly comfortable, and had a fair color for one who has taken ether. The pulse was considered good, though my notes do not show its character more definitely. She vomited once, — the first time since Monday night, — the vomitus being a green fluid as before. She sipped hot water at first and later champagne. The latter she took several times and quite freely.

At 6.30 P.M. I saw her for the last time alive. She was then restless, the pulse rapid, becoming at times irregular. There was a peculiar staring look which I did not like. After a subcutaneous injection of morphia, gr. $\frac{1}{8}$, the pulse became slower, stronger, and steady. She fell into a quiet sleep at 6.45, and I left her.

The nurse tells me that she slept quietly until 7.30, the pulse being good. She then awoke with a start, threw up her hands toward her head, gasped two or three times, and ceased to breathe. Brandy was at once given, both subcutaneously and by rectum, and artificial respiration was practised.

I reached the house in about five minutes. The body had the appearance of death. There was marked lividity of the neck, with pallor of the face. I at once continued artificial respiration, and gave brandy, carbonate of ammonia, and digitalis, both subcutaneously and by rectum. Owing to the violent action of my own heart from running, I could learn nothing of her heart by listening; but I felt very sure that I could feel a small pulse, and the nurse assured me that I was not mistaken. Direct inflation of the lungs was then practised, changing occasionally to the Sylvester method. After twenty minutes or more all effort was suspended, it being evident that she was dead.

The uterus at this time could not be felt above the pubes, and there had been no external hæmorrhage.

There was no autopsy, and the question as to the cause of death I have never satisfactorily settled. My inclination is toward the belief that death was due to pulmonary thrombosis, the clot coming from the diseased heart where it had formed in consequence of the roughened endocardium, and the feeble circulation during the condition of shock. In any case I do not consider that her general condition was such as to offer alone any adequate explanation of the death. In other words, the vomiting of pregnancy was by no means directly the cause of the fatal issue.

But the case is interesting and instructive in many ways, aside from its termination; and in order more clearly to bring out its lessons I have thought it necessary to be thus explicit and minute in my report of it. Having, however, already occupied so much of your time, I will be as brief as possible in my comments.

As one approaches the literature of the subject of pernicious vomiting of pregnancy, it is with a sense of bewilderment at the multiplicity and the contradictory nature of the theories advanced to explain the condition, and the almost endless number of methods of treatment vaunted with more or less persistence and ingenuity. There is an explanation to suit all shades of belief, and to fit all classes of cases; but in the very fact of the multiplication of theories lies the best proof of the fallacy, or at least inadequacy, of all. As a matter of fact, no single lesion, malformation, displacement, or idiosyncrasy has yet been discovered which can satisfactorily account for all cases of pernicious vomiting of pregnancy. The only appreciable point of similarity between all cases is the fact of pregnancy.

In the case at present under consideration there are certain features which have at least a suggestive value in connection with the study of causation. The conditions were briefly as follows: a maltreated and sensitive stomach; the presence of a rheumatic diathesis, if the term may be allowed; a strongly compressed waist, which may have caused deformity and impairment of function of the liver; a uterus strongly anteflexed; cervix eroded, and flattened against the floor of the pelvis; small and sensitive internal os; probable endometritis; sensitive and painful ovaries, both being probably diseased and adherent. Here is a combination of circumstances which would seem to cover nearly all of the many theories, and yet the persistence of the vomiting after the relief of the several conditions would suggest at least the necessity for looking farther for any complete explanation.

Temporary relief was experienced after applications to the eroded cervix; temporary and very marked relief resulted from straightening and lifting the distorted uterus; benefit was had from warm and soothing applications, poultices and douches; the patient felt better after the bowels were thoroughly evacuated; stretching the cervix perhaps helped somewhat. In every case the relief was only temporary, and as a rule only partial. Even after the probable date of the child's death and the consequent shrinking of the uterine tumor there was not complete cessation of the symptoms.

What, then, is the cause, for cause there must be? My own belief is that back of all local and exciting causes, be they many and prominent, or few and insignificant, there is always some condition of the nervous system which acts as a predisposing cause. Just what this condition is I do not know, nor do I believe that in any given case of pregnancy, with exciting causes, however marked, we can with any degree of assurance predict the sequel as regards vomiting. But that such predisposing cause does exist, a cause subtle, undefinable, elusive, seems clearly taught by this and other cases. With not a few of the later writers I would hold that the disease, in its severer forms at least, constitutes a veritable neurosis, and should be treated as such.

As regards treatment, only general rules need be laid down. Much is to be expected from prophylactic methods. In the present case it is probable that much suffering might have been spared, and a valuable life spared, by previous treatment directed against the uterine and periuterine disease. Whether one side with Graily Hewitt and consider the flexion as of greatest importance, or accept the view of Veit concerning endometritis, he should not willingly allow such conditions to exist in any woman who may become pregnant. In short, any and all possible sources of pelvic irritation should be cured or relieved.

In the treatment of the fully fledged disease, having exhausted all the simpler methods which occur at once to every one, make sure that within the limitations of our art no exciting cause remains unrelieved, whether that exciting cause lie in the stomach, the small or large intestine, the rectum, the cervix, uterus, ovaries, or periuterine tissues At the same time treat the nervous system. Insure absolute quiet and freedom from outside irritation Let the mental atmosphere be judiciously selected. Calm if necessary with sedatives and procure sleep. Keep up the strength by persistent rectal alimentation and stimulation. Remember that pain excites and rapidly exhausts, and relieve it if it exists.

After all this is done and the symptoms persist, the patient visibly losing ground, especially if the pregnancy have passed four and a half months without improvement, then empty the uterus.

Do you say that many a patient has recovered under such circumstances and has gone safely to full term, and that my patient did not die directly of the vomiting, nor even of anything connected with the pregnancy? Very true; yet a very large percentage of such cases have died and will continue to die. Their lives can be saved by such interference and at a cost of very few more infants than would otherwise die with their mothers.

I make no plea for *early* interference, nor do I believe such interference to be either necessary or justifiable. Even in looking back over this disastrous case I can see no time at which artificial termination of the pregnancy could have been fairly advised. I do desire, however, to call to mind the fact that many of the deaths directly or indirectly attributable to the pernicious vomiting of pregnancy might have been avoided by more promptly emptying the uterus. The question as to the proper time to operate must be decided in each case upon its own merits, the general rule given above serving as a basis for decision, the leaning being to too early, rather than too late. interference.

RECENT PROGRESS IN LEGAL MEDICINE.

BY F. W. DRAPER, M.D.

MEDICAL RESPONSIBILITY.

In Puerperal Cases. — The Chicago Medico-Legal Society, at its meeting of March 3, 1888, discussed the question whether the failure of a physician to accept and practise the precepts of antiseptic midwifery should make him legally responsible and liable if puerperal fever developed during his attendance in the lying-in room. The discussion grew out of a paper by Dr. Etheridge,[1] in which he criticised unfavorably the advanced views of members of the Chicago Obstetrical Society who insisted on the need of antiseptic precautions in the care of obstetric cases. Dr. Etheridge argued that it was premature to adopt the germ-theory in the etiology of puerperal fever, and that the dogmatic assertions of men in medical society discussions had a tendency, if published, to impose a too strict accountability on physicians. The general sentiment of those who engaged in the discussion was not in sympathy with Dr. Etheridge's position touching liability through neglect of antisepsis. The prevailing opinion appeared to be decidedly in favor of antiseptic midwifery as a general practice, and one gentleman said that if he were called into court in a case where antiseptic measures had been neglected and infection had followed, he should feel obliged to testify that in his opinion the attendant's whole duty to his patient had not been performed. This statement represented quite fairly the expressed views of the society.

With reference to this question of the legal accountability of the accoucheur in the event of the septic infection of his patient, Fritsch has some excellent counsel concerning the nature of the evidence required in any case of this kind, if it should be made a subject of judicial inquiry.[2] He writes:—

"A question that the judge addresses to the expert is this: 'Do the actions or the omissions of the accoucheur stand in a causal relation to the death of this puerperal patient?' This question cannot be answered simply by 'yes' or 'no.' At most, only the scientific opinion can be expressed that a causal relation is probable. The possibility of accidental infection, in which the attendant had no part, must be admitted. Fatal peritonitis may occur, for example, in consequence of the rupture of a pyosalpinx during the course of an otherwise normal labor.

"The method of the infection, therefore, must be clearly established before the relation of cause and effect can be looked upon as demonstrated. To establish this, three data are to be supplied: —

"1. The source of the material of the infection must be made clear.

"2. The omission of disinfection must be proved.

"3. Any cause of death other than the puerperal disease must be eliminated.

"In establishing the first point, it is not necessary to demonstrate infection with puerperal poison only. A midwife was convicted who was suffering from an inflammation of the lachrymal sac. It was shown that, contrary to a physician's orders, she had attended women in labor without disinfection of her hands, and that during the confinements she had compressed the tear sac with her fingers and immediately afterward introduced them into the parturient canal. American readers will recall the sad case of Dr. Rutter and his ozæna.

"The omission of disinfection is not difficult to prove; although, of course, the rigorous antisepsis of Lister may not be insisted on.

"The third point is elicited from the history of the case, the observation of the course of the disease, and the results of the autopsy.

"In the hypothetical case of puerperal fever, therefore, when the source of infection, the omission of disinfection, and the absence of any other cause of death than puerperal fever, have been demonstrated, it is consistent with all the facts that there is a causal relation between the actions or omissions of the attending accoucheur and the death of the puerpera."

In Insanity Cases. — Two instances have been reported within the past year illustrating anew the risks encountered by medical men when they sign certificates of insanity, although they have acted entirely in good faith, and with a due sense of their responsibility. Two physicians of Albany, N.Y., Drs. Russell and O'Leary, proceeding under the order of a county judge, examined a lunatic, and, upon their certificate of his insanity and need of hospital treatment, he was arrested and committed to an asylum. Five days later the patient appealed to the courts, and asked that the question of his mental state might be referred to a jury for determination. The jury returned a verdict that the petitioner was sane, and he was thereupon set at liberty. He then brought suit against the physicians, and the judge who had committed him on their certificate, claiming damages for false imprisonment. The Supreme Court, however, disallowed the claim, and sustained the demurrer of the physicians; in the decision reported are the following sentences, which set forth clearly the law in such cases: —

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[1] Jour. Amer. Med. Asso., May 5, 12, and 26, 1888.

[2] Deutsche Med. Wochen., No. 12, 1888; Jour. Amer. Med. Asso., May 26, 1888.

"The complaint does not charge the defendants, Russell and O'Leary, with any active participation in the arrest and confinement of the plaintiff; it only charges them with making the certificates without due care. Nor is there any charge or allegation that they acted maliciously. If the arrest and confinement of the plaintiff should be held illegal, still it is difficult to see how the acts of the defendants, Russell and O'Leary, as charged in the complaint, could create any liability against them. The law does not prescribe the extent of the examination and inquiry that are to be made by the physicians, nor the nature of proof to be relied on by them. All they are required by law to do is to make their certificate after a personal examination by them of the party alleged to be insane. This the complaint states that they did. After such examination they certified that in their opinion the plaintiff was insane. In the absence of malice, . . . and acting in a quasi-judicial capacity, in which they were called upon to judge and determine, as well as to certify their opinion, as to the mental condition of the plaintiff, it is not perceived how they could be made liable for false imprisonment, for the arrest and detention of the plaintiff by an officer or keeper of the insane, even if he acted upon the statement made in such certificate. . . .

"The proceeding to determine whether or not the plaintiff was a lunatic is a judicial proceeding, and the certificates made in the regular and orderly course of this proceeding are privileged, as in other cases of evidence or testimony taken in a judicial proceeding. . . . Within these rules I do not see how an action can be maintained against the defendants, Russell and O'Leary, upon the allegations in the plaintiff's complaint."[3]

Another somewhat similar case occurred in England. A lady of good social position, presenting unequivocal signs of acute mental disorder, with dangerous suicidal tendencies, was examined by two physicians, and upon their certificate of her insanity was sent to an asylum. She received hospital treatment during two and a half years. When discharged, she entered a suit against the two physicians and also against the Lady Superior of the convent from which she was removed to the asylum; her claim being that the three had maliciously conspired to immure her in an insane asylum when she was not insane, and that the medical certificates were insufficient and had been made without due care and skill. The charge of conspiracy was abandoned, so far as the physicians were concerned, and the issue on their part related to their negligence. The insanity of the plaintiff was clearly proven. The judge, in the course of his instructions to the jury, said if it were to come to this, that respectable medical men were to be deterred from signing insanity certificates through apprehension of such legal proceedings as those then pending, it would be a most unfortunate thing for the patients themselves. No doctor was bound to sign a certificate or to make an examination in any case, on request; but if he acted at all, he undertook a duty and was responsible for any breach of it. In the present case, the claim was that the doctor's inquiry and examination were insufficient; but the only evidence of negligence was the plaintiff's own account of her interview with them. The jury brought in a verdict favorable to the defendant physicians on all the points propounded by the judge.[4]

Although in these cases the medical men won a verdict in each instance, that advantage could hardly compensate them for the expenditure of time, anxiety, and money which these unjust suits imposed upon them.

SEXUAL INCAPACITY IN THE MALE.

Theoretically, sexual incapacity through loss of both testicles by castration would be a good defence with which to meet a charge of bastardy, rape, or other similar offence. Practically, however, this defence is subject to some limitation with reference to the time which elapses after the mutilation and before the crime. It has been found that during a longer or shorter period after castration, a man remains capable of sexual intercourse, and presumably retains his procreative function. The length of this period has never been determined with any approach to accuracy, and perhaps it is impossible to determine it. Obolonsky discusses the question from an experimental point of view,[5] and he believes that for about a month after removal of the testicles spermatozoa may remain in the seminal vesicles, and may be ejaculated in fertile condition in sexual intercourse. He tried some experiments on dogs, and found that, in two animals, living and active zoösperms were present, in one case seven days after castration, and in the other a month after that operation.

THE ABSOLUTE SIGNS OF DEATH.

Dr. B. W. Richardson recently contributed a paper on this subject, of such interest that it deserves a tolerably full abstract.[6] He treated the topic under three heads: (1) The common circumstances under which an inquiry into the proofs of actual death are demanded; (2) the methods for determining those proofs in an absolute manner; (3) a summary of efficient practical details.

Under the first head he discussed the change of color which sometimes occurs in the dead body, from the usual pallor to a more life-like tint, due to unusual oxidation of the blood; the movements, or supposed movements, of the body, occasionally observed after death by cholera; the retention of warmth and life-like expression of the countenance; the delay in the advent of decomposition; suspended animation, as after narcotism by hydrate of chloral and other drugs; the cataleptic state induced by electricity or lightning stroke; and the curious antemortem request sometimes made, through fear of premature burial, that a skilled examination should be made in good season to prevent such a distressing event.

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[3] Journal of Insanity, April, 1888.

[4] Journal of Mental Science, July, 1888.

[5] Vierteljahrsschrift f. gerichtl. Med., April, 1888.

[6] Lancet, Dec. 15, 1888

The actual proofs of death mentioned by the writer are ten in number, and some of these are original with him. He took them up in the following order: —

(1) Respiratory failure, including absence of visible movements of the chest, absence of respiratory murmur, and absence of watery vapor from the breath; this test was a fallacious one, for apparent movement might be absent, and the mirror was useless under such conditions.

(2) Cardiac failure, including absence of arterial pulsation, of cardiac motion, of cardiac sounds, and absence of turgescence, or filling up of the veins on making pressure between them and the heart. The pulse as a sign was of more value than the cardiac motion or sounds, and yet even it might be undetectable, although the body were alive, and capable of recovery. The proof, by pressure on the veins was one not likely to deceive. A band should be bound around the wrist, a cardboard being arranged in front so as to relieve the arteries from pressure. If life were not extinct, turgescence of the dorsal veins of the hand would soon be apparent.

(3) Reduction of the temperature of the body below the normal standard. A diminution of a few degrees did not signify death, as recovery had taken place after a fall of the temperature to seven degrees below normal. A fallen temperature as a proof of death should always be considered in combination with other signs. If the temperature within the mouth were found lower than that of the surrounding atmosphere, it would be a strong presumptive sign of death.

(4) Presence of rigor mortis and muscular flaccidity. Rigor mortis might be imitated by rigidity from cold or by tetanus, but the history would distinguish the two states.

(5) Coagulation of blood in the veins. This, when present with rigor mortis, was an absolute sign of death, but both might be absent for even a long period.

(6) Presence of decomposition.

(7) Absence of red color in semi-transparent parts under a powerful light, such as that from a magnesian lamp.

(8) Absence of muscular contraction under the stimulus of an electric or galvanic current. The handiest apparatus for this test was a small faradic battery, and needles should be thrust into the muscles of the forearm.

(9) Absence of a red blotch under the skin after the subcutaneous injection of ammonia. This test the author regarded as particularly valuable.

(10) Absence of signs of rust (oxidation) of a bright steel needle after plunging it deeply into the tissues. This test was of value for only a short time after death, because, later, rust would follow from oxidation of the needle by the acid products of decomposition.

In the last part of his paper, Dr. Richardson recommended the precise mode in which practical tests should be applied, taking up the steps of the necessary examinations one by one, pointing out the relative values of each, and giving in a condensed form the diagnostic formula for an absolute proof of death in every doubtful case, without any operative procedure inimical in itself to life. He proposed the application of tests in the following order: (1) Apply a fillet to the wrist, and examine the veins in the back of the hand. (2) Open a vein at the bend of the elbow, and seek for stringy coagula; open, if necessary, two or more veins. (3) Apply the electric test. (4) Inject ammonia hypodermically. (5) Examine by strong light for absence of red color from the transparent tissues. (6) If any doubt still remains and rigor mortis has not developed, let the body be kept in a damp room at 84° F.; this would speedily bring about decomposition if the body were dead, and would favor restoration if life were not extinct. This last test has the great recommendation that it can be carried out in those cases where it is forbidden to touch the body.

HYPNOTISM AND CRIME.

Reese has summarized our present knowledge of hypnotism in its medico-legal relations in a valuable article based on the observations of Ladame. "There can be no doubt," he writes,[7] "that a hypnotic subject, impressed by 'suggestions,' may be led to sign papers, such as contracts, checks, promissory notes, etc., in favor of the hypnotizer; but whether these would hold good would probably have to be determined by court and jury subsequently. The whole question would turn upon the responsibility of the individual while under the hypnotic condition. From numerous examples given by different experimenters, there can be no doubt that crimes of a serious nature may be committed by persons while hypnotized by a skilled and determined operator.

"But there is another phase of this mental condition still more significant, and one that has a special importance medico-legally in connection with false testimony in courts of justice. The experiments of Bernheim show that it is quite possible to develop in many subjects mental impressions, amounting to actual convictions, of events believed to have occurred, and to have been witnessed in the distant past; which events, however, have had no real existence, but have merely been strongly 'suggested' to the mind. These singular impressions have received the name of 'retroactive hallucinations,' from the fact that they are retrospective in their nature.

"What is termed suggested forgetfulness, or negative hallucination, is the opposite of what has been described above. It has reference to the power of the hypnotizer to cause his subject to forget during his sleep things that have had an existence in the past. He assures him that he has seen nothing, felt nothing, and heard nothing; he makes him forget the name and the appearance of persons, their actions, their conversation, and everything that he might be interested in making disappear from his memory.' Here, again, it will readily be seen how much an abnormal neurotic state may seriously interfere with the cause of justice, in a manner just the opposite to that we have been discussing, namely, by the individual no longer remembering anything about himself, his life or his actions, during a certain period of his existence. It is easily seen how useful such a resource might be for a criminal whose interest it was to render himself invisible, or to get rid of a troublesome witness.

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[7] Gaillard's Med. Jour., April, 1888.

"The practical question presents itself, How should one proceed judicially in a case of alleged hypnotism in a criminal? Suppose, for example, that it be a person who, while in a hypnotic state, had been induced by the 'suggestions' of an evil-disposed hypnotizer to commit some criminal act, — it may be the fraudulent signing of documents, or perhaps a graver offence, such as theft, arson, or even murder; or let it be one of those singular instances of retroactive hallucinations before alluded to, where the subject is led to bear false testimony through a perverted mental conception, having been induced to believe in the actual existence of events, and to testify to them with perfect honesty of purpose, but which all the while had no real existence, but were solely the result of suggestions. First, ascertain whether the person in question is really a person capable of being hypnotized; and here the selection of the method would seem to be of some importance, since we are assured that the same phenomena are not produced by diverse methods of operation. Hence it is advisable to ascertain what was the original method employed by the hypnotizer, and to practise that alone in the experiment. If all the known methods fail to induce the hypnotic state, the subject may be considered a failure or an impostor. But just here we should be cautioned by the experience of Charcot, Brouardel, Motet, and others, that there are certain hysterical phenomena that might easily be mistaken by the inexperienced for those of true hypnotism.

"Having determined the reality of the hypnotism, the next point is to inquire into the degree of influence that has been exerted by this condition over the actions of the individual. And here we must encounter the question of irresistible impulse, just as we are obliged to meet it in cases of alleged insanity. Numerous examples conclusively show that hypnotized subjects do perform 'suggested' acts with a perfect consciousness of the absurdity of their position, or even of the wickedness of their acts. Even while condemning the bad action, they are not free to resist the commission of it. This question of 'irresistible impulse' is one of the most delicate in the domain of legal medicine, and great reserve should be exercised in determining particular cases. One feature of the crimes committed under such a 'suggested' impulse is said to be the direct, straightforward, mechanical way in which they are accomplished; there would seem to be no hesitancy attending their commission.

"But it might happen that a criminal, who was a hypnotic subject, had placed himself voluntarily under the evil suggestions of a hypnotizer, in the hope of thereby escaping legal responsibility, and at the same time in order to acquire greater boldness, and strength of purpose for his criminal deed. Of course, there would always be a conflict of opinions in the trial of a case of this kind, just as there is in other criminal cases where the plea of emotional insanity is urged as a bar to punishment, because relieving the culprit from all responsibility. But there is another factor in this question of responsibility in the case of a criminal hypnotic. How far has he consented to allow himself to be operated on? If he has voluntarily thus parted with his liberty, he has certainly incurred some responsibility, since it is admitted that hypnotic subjects can and do resist 'suggestions' which are distasteful to them."

Guermonprez,[8] noting with satisfaction the unanimous vote of the Biological Society of Paris and of the French Association for the Advancement of the Sciences, to the effect that public exhibitions of hypnotism should be forbidden on the ground of their dangerous tendencies, discusses the reasons favoring such interdiction. Among them is the fact that subjects predisposed to hysteria are quite sure to find in the manifestations of hypnotism a determining cause of that deplorable state and to experience the first explosion of this neurosis after such an exhibition. The memory of some persons is found to be impaired by exposure to this influence, and students find their aptitude for work destroyed. In one case mentioned, a young woman became so unbalanced by hypnotism that she committed suicide. In view of the dangers involved in the unrestrained practice of hypnotism, Guermonprez urges that it be classed with poisons, and its use permitted to physicians only, and for legitimate purposes only.

Reports of Societies.

PROCEEDINGS AT A RECEPTION GIVEN TO DR. OLIVER WENDELL HOLMES,

PRESIDENT OF THE ASSOCIATION FROM 1875 TO 1888, BY THE BOSTON MEDICAL LIBRARY ASSOCIATION, TUESDAY, JANUARY 29TH, WHEN HIS MEDICAL LIBRARY WAS FORMALLY PRESENTED TO THE ASSOCIATION, AND ACCEPTED.

Dr. R. M. Hodges, President, in calling the Library Association to order, said: The object for which this meeting has been called will be made plain by the following letter, which I will read: —

296 Beacon St., Jan. 23, 1889.

My dear Sir, — I have transferred my medical library to the Hall of the Boston Medical Library Association, asking the association to accept it as a gift from its late president. As there was no provision for its reception, and as I liked the idea of keeping together the books which had been so long together, I have provided a new set of shelves in which they can be properly and conveniently arranged.

Yours very truly,
O. W. Holmes.

Dr. Richard M. Hodges,
President of the
Boston Medical Library Association.

The Association must have listened to this communication with feelings of great satisfaction and pleasure, and its recognition, I am sure, of this generous gift will be at once hearty and sincere. The Chair is ready to hear any motion.

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[8] Revue de l'hypnotisme expérimentale et thérapeutique, Juillet, 1888.

Dr. J. R. Chadwick Librarian of the Association: Mr. President, I shall offer a motion after a few remarks. On Saturday I received this letter from a lady in the West. From it I wish to read this extract: "Last summer, going to Gloucester one day, Dr. Holmes sat in a front seat of the car with me, and as I shut the door for him several times he spoke to me, and when I told him that years before I had taken luncheon at his house with Rev. Dr. J. F. Clark and his wife he became very talkative, read me some verses, and told me all kinds of funny things.

"A countryman, sitting in the little corner seat near us, listened to our conversation very attentively, and finally, leaning over, took the doctor's hat out of his hand, looked at the number inside, then at his own, and said very demurely: 'I read something in the paper about the size of great men's heads, and I thought I'd like to know the size of your'n, but what beats me is my head's the biggest of the two.'

"I thought the doctor would have a fit, he laughed so hard after the man got out of the car."

That hat, I remember, was mentioned in another episode about Dr. Holmes: "Rev. Dr. Peabody, of Cambridge, was coming into Boston, and getting off the car at the Revere House nearly collided, in turning a sharp corner, with an elderly gentleman who was standing with his hat off, wiping the perspiration from his forehead, but who held this same small hat in such a position as to give the appearance of begging. Dr. Peabody, seeing only the hat, dropped a "quarter" into it with his customary kind remark. Dr. Oliver Wendell Holmes, who was holding the hat, put the money in his pocket, solemnly thanked the giver, and passed on."

It is my impression that very soon after that little episode Dr. Holmes contributed liberally to the fund for the building of this house.

We elected Dr. Holmes president in 1875, when we formed this association, with the conviction that his name and his wise counsels would guide us over the perilous early years of the institution; and with the belief that if we should merit his approbation we should achieve success.

I will call your attention to this chart, which shows the rate of growth of the seven principal medical libraries of the country: First in point of time is the library of the Pennsylvania Hospital, founded in 1760; second, that of the College of Physicians in Philadelphia, founded in 1788; third, the New York Hospital Library, in 1796, etc. Of course the library of the Surgeon-general's Office has surpassed in size all these, having a large annual appropriation and a magnificent librarian. Next in rank comes the library of the College of Physicians; next, that of the Academy of Physicians, and our library comes fourth in rank. After that come the Medical Department of the Public Library of Boston, and the New York Hospital Library. In other words, although the youngest of these seven libraries, ours has already passed three of them. We have very nearly twenty thousand volumes. This we feel is a very good showing; and we feel that the gift that we have received to-day of all these books of Dr. Holmes's is a proof that he is satisfied with the work that we have done. The prospective value to us of this library consisting of nine hundred and sixty-eight volumes, the largest collection presented at any one time, does not represent the full significance of the gift. The library, the collection of books that a scholar and a student, and professor and writer, collects around him, means a great deal more to him than it does to any one else; and I shall take the liberty of quoting the following sentences from Dr. Holmes's address at the dedication of the building and hall of the Library Association, to show his own estimate of such collections: "A scholar should not be in a hurry to part with his books. They are probably more valuable to him than they can be to any other individual. What Swedenborg called 'correspondence' has established itself between his intelligence and the volumes which wall him within their sacred enclosure. Napoleon said that his mind was as if furnished with drawers; he drew out each as he wanted its contents, and closed it at will when done with them. The scholar's mind, to use a similar comparison, is furnished with shelves like his library. Each book knows its place in the brain as well as against the wall or in the alcove. His consciousness is doubled by the books which encircle him, as the trees that surround a lake repeat themselves in its unruffled waters. Men talk of the nerve that runs to the pocket; but one who loves his books, and has lived long with them, has a nervous filament which runs from his sensorium to every one of them; or, if I may still let my fancy draw its pictures, a scholar's library is to him what a temple is to the worshipper who frequents it. There is the altar sacred to his holiest experiences. There is the font where his new-born thought was baptized, and first had a name in his consciousness. There is the monumental tablet of a dead belief sacred still in the memory of what it was while yet alive. No visitor can read all this on the lettered backs of the books that have gathered around the scholar, but for him, from the Aldus on the lowest shelf to the Elzevir on the highest, every volume has a language which none but he can interpret. Be patient with the book-collector, who loves his companions too well to let them go. Books are not buried with their owners, and the veriest book-miser that ever lived was probably doing far more for his successors than his more liberal neighbor who despised his learned or unlearned avarice. Let the fruit fall with the leaves still clinging round it. Who would have stripped Southey's walls of the books that filled them, when, his mind no longer capable of taking in their meaning, he would still pat and fondle them with the vague loving sense of what they had once been to him, — to him the great scholar, now like a little child among his play-things?"

You see from this what the companionship of books has been to Dr. Holmes; and when he comes forward and voluntarily transfers from his shelves to ours this collection that he has brought around him during the fifty odd years of his professional life, and gives it at a time when he is in the capacity of the full enjoyment of it, it means a great deal.

It is fitting on this occasion that we should realize that this is the culmination of Dr. Holmes's gifts to the profession. He began his professional life in 1836, and from that day to this he has been ready on every occasion to deliver addresses, to be the medium between us and the public; and as a result I have here a goodly pile — not quite all, but very nearly all, these papers. The topics have a wide range — "Puerperal Fever as a Private Pestilence," which evoked a storm of opposition in 1855, but which now is quoted by the most learned men with approval; this little quaint volume on "Homeopathy and its Kindred Delusions" is the most pungent and irrefutable argument against that schism that has ever been published: "Currents and Countercurrents in Medical Science," etc., etc. In two successive years, out of four Boylston prizes he took three.

To the funds of this association Dr. Holmes has contributed bountifully. He has delivered an address that has helped our association immensely. Last spring and summer he busied himself among his friends and collected several thousand dollars toward paying for the new lot on which we propose to build when Dr. Holmes or some one else raises the rest of it.

I move you, Sir, that with grateful appreciation we accept from Dr. Oliver Wendell Holmes the gift of his medical library of nine hundred and sixty-eight volumes and the shelves which contain them. And that we recognize in this act, as well as in his retaining the position of president of the association for several years after he had relinquished all other associations with the medical profession, that he has designated our institution as the one in whose existence he takes the greatest pride, in whose future he has the greatest confidence.

The President: You have heard the motion presented by Dr. Chadwick. Is that motion seconded?

Dr. D. W. Cheever, President of the Massachusetts Medical Society: I rise, Mr. President, to second the motion of Dr. Chadwick, and I rise in behalf of the Massachusetts Medical Society to welcome this generous accession to our means of medical knowledge.

Dr. Holmes has been in his earlier years a valuable contributor to our medical literature by his monographs on "Intermittent Fever," on "Puerperal Fever as a Private Pestilence," and in his annual discourse before the Massachusetts Medical Society in 1860 on "Currents and Countercurrents in Medical Science."

He exposed in his teachings the pseudo-science of Phrenology and the delusions of Homeopathy.

For eleven years I was under his teaching, having been, like our presiding officer, for eight years his demonstrator of anatomy.

I shall always count it as among the privileges of my life that I read Virgil with Peabody; Dante with Longfellow; botany with Gray; and anatomy with Holmes.

The collection of plates and volumes which he now gives us are valuable as classics in engraving and as monographs.

Among the numerous productions of the modern medical press, the physicians of the present day are apt to become unfamiliar with the older standard works on anatomy, medicine, and surgery; therefore this gift is of the greater worth to us.

Representing, as I do, the 1700 members of the Massachusetts Medical Society, I regard this library as theirs as well as ours here in Boston; for our State is so compact, and the means of reaching the metropolis so complete, that any fellow of our great society can consult this collection with ease in one day's time.

I second the adoption of the resolution.

The President: This gift is one of interest to librarians as well as physicians, and we are favored this evening by the presence of Mr. Winsor, the librarian of Harvard University. I will ask him to say a few words.

Mr. Justin Winsor: Mr. President, I am almost tempted to think that I have carried myself back fifty years and more to that bi-centennial of Harvard College when Dr. Holmes sang his famous song. I have never been quite happy under certain sentiments of that song ever since. Not that I cared at all for his showing up of the nepotism of the authorities of the college; but in these days of Indian rights I am very much grieved to think that a certain little Indian was not allowed to study humanity in the classic shades of Cambridge. You remember the verse: —

> And who was on the Catalogue when college was begun?
> Two nephews of the President, and *the* Professor's son;
> (They turned a little Indian by, as brown as any bun;)
> Lord! how the seniors knocked about the freshman class of one!

Why was that little Indian turned by? The stream of tradition in Cambridge flows still without intermission. I tapped it the other day and got the secret. I am afraid we have forgotten that President Dunster had one gracious virtue, that he greatly loved moose-meat. There was a little Indian about Cambridge in those days, and the president had a good fat young heifer; so he stole, killed, skinned, dressed, and sold it to the president for a handful of bright silver shillings. The moral is that *what is our own is sure to come back to us after some time*; chickens come home to roost. The veally moose-meat came back upon the pewter platter of President Dunster; and Dr. Holmes's books, I am glad to say, without any intervention of deviltry, come back to their proper receptacle.

An eminent librarian of the British Museum once said to me, "I can conceive that there is no reason why private libraries should exist except as feeders of great public collections." That was an eminently British sentiment. Here, however, in Boston we see the great private libraries come back into the public collections. Think what the libraries were thirty years ago, and among them such as Prescott's, and Ticknor's, and Sumner's, and others; almost every one either wholly or in great part has been engulfed in public collections.

That little Indian received his silver shillings. I don't think that Dr. Holmes will be any the better for the purse of gold. He has his reward not in such things. That is left for the common herd. He has his reward in the gratitude of your hearts and in the gratification in your eyes.

The President: I will ask Dr. G. B. Shattuck, editor of the Boston Medical and Surgical Journal, to say a few words in behalf of the medical journals.

Dr. George B. Shattuck: Mr. President, I am really convinced that it is the unexpected which actually happens. It is true that some hours ago it was intimated to me that in the absence of my elders and betters I might be called upon to lift up my voice in your presence here to-night, but I did not allow myself to suppose that such a contingency would really materialize. Notwithstanding that, sir, I cannot deny myself the enjoyment and the real pleasure and gratification which it does give me to find myself in the situation where I may publicly add my testimony to that of those who have spoken before me in recognition of certain qualities of our honored guest, of the kindly courtesy, the ever readiness, the intelligent generosity toward our profession and its members, qualities which, I know, you have all suspected existed and were active, but with reference to the existence and the activity of which it is not possible that you all should have received actual proofs. It has been my lot in a double capacity to be the recipient of such proofs, and hence it is that I am glad to have the opportunity, as I said, to bear testimony to the recognition of these qualities.

First of all, as the son of a life-long friend and old associate of Dr. Holmes: in that capacity it was my lot, by pure accident, a couple of days ago, to come across two letters which bore testimony to the point upon which I am speaking in the most pleasant and positive manner, especially so because they were never intended for any one's knowledge and were written long ago. With your permission — I have the permission of the person to whom they were addressed — I will read them to you this evening.

Sept. 22, 1864.

Dear Dr. Shattuck, — You will be interested in this young man, who wishes to begin the study of medicine. He is wide awake, full of good intent, and always *goes to your church* on Sunday when he is in town. He wishes to give his note for lecture fees, and I hope you will accommodate him in this, and in such other ways as he may ask with reference to instruction, for he is a youth of promise and may do us honor by and by.

Trusting him to the good offices of the Dean, I am,
Yours always,
O. W. Holmes.

Sept. 3, 1868.

Dear Dr. Shattuck, — Please make a note of the name of Mr. ——— as a subject of your well-known benevolent offices as Dean (of the Harvard Medical School). He gave his note and is not able to pay it yet, and must be favored for good reasons.

His father was a noted temperance lecturer, but fell from his high estate, and is now a care and a burden to his friends. His mother came to see me with a letter from an old friend and schoolmate of mine in her pocket, which interested me very much and assured me that this was a case for every consideration and kindness.

So, most benignant and benevolent of Deans, don't forget his name, but when he comes to you put off his pay-day until late in the Greek calends, or get him on the free list and make the worse than widow's heart sing for joy.

Faithfully yours,
O. W. Holmes.

In my first capacity as witness I have offered you these proofs which I think are all the more striking because they were unexpected. They have long been forgotten by the writer, and were written by a man who at that time, as he always has been since, was busy, occupied with many cares and interests and claims and responsibilities. These letters, you will notice, evince an interest in the welfare of the young and a desire to further the entrance of those who showed zeal toward the profession upon their studies.

Now, as the editor for a good many years of our Medical Journal, it has fallen to my lot to become possessed of other proofs of Dr. Holmes's kindly interest in all that relates to our professional brethren and our profession. I shall not enter upon a list of his contributions to the Medical Journal. That you will find written where you can have easy access to it, and all these titles you can consult at any time and always with great benefit and profit to yourselves. But there is a certain class of literature which comes to the notice of the editor of a journal or of a daily paper which is unsigned, but not unimportant, and which is very difficult to procure, and in the preparation of that class of literature the profession and the Journal has had no more skilful contributor or better friend than Dr. Holmes. As these letters evince his interest in the young and in those about starting out in our profession, so the other contributions, to which I refer, evince the same interest in those who, having run their professional course, were about resting from their labors in the sleep of death; and the class of literature to which I refer is the obituary. Dr. Holmes has assured us that "a post-mortem surviving friends will gratify." In regard to this, as a practitioner I have, of course, had very little experience, but I am convinced that there is nothing which gratifies surviving friends more than a judicious and acceptable obituary; and for many years Dr. Holmes was ready upon many occasions to embalm the memories of our deceased brethren in most discriminating and acceptable obituaries. In his hands the good that men did always lived after them, and the evil — if men in our profession ever commit any — was always interred with their bones.

Most of us who are here to-night don't labor under the disadvantage of having been born too long ago, but as far as this point is concerned we do labor under the disadvantage of having been born too late, and I fear that for most of us the matter of the obituary will have to be trusted to a less skilful and discriminating pen. For I regret to say that it is already some years since Dr. Holmes very properly felt at liberty to decline further service in this direction.

The President: Before putting Dr. Chadwick's motion I will read this letter addressed to the librarian by Dr. Storer.

182 Boylston St.,
January 29, 1889.

Dear Dr., — I would gladly be with you to-night to meet Dr. Holmes. This pleasure is denied me, but I can rejoice with you to know that he is thus esteemed by his brethren; that as an ornament and an honor to the profession he possesses their admiration. One of my oldest and most valued friends, I am proud that you thus do him honor.

Truthfully yours,
D. Humphreys Storer.

The President read the motion and said: — The question is on the adoption of this motion offered by Dr. Chadwick. As many as are in favor of this motion will say "Ay" [a loud response]; contrary minded [no response]. It is a vote.

ADDRESS BY DR. OLIVER WENDELL HOLMES.[1]

The President: I will call upon Dr. Blake for a few remarks.

Dr. C. J. Blake: Mr. President, as the bearer of a pleasant message I am very glad to come; and since it is so pleasant I shall ask you to let me have a word or two of preface.

Truly, "all the world loves a lover" and all the world has shown it in its greetings and its homage to the lover of human nature who in prose and verse has said and sung the praise and worth of sunshine, human kindness, brave thoughts, and gentle deeds, and through whose web and woof have always run, now shimmering on the surface, now glinting deep between the lines, the mingled threads of gold and silver, wit and pathos; "for this the world's his debtor."

But we of the medical profession owe him more than this; firstly he is, and always will be, one of us. However widely he may spread his wings, however far he flies afield toward the confines of the English-speaking earth, he turns him homeward "where the great city, like a brooding bird, rests on her hills;" here he is at home. To us he brings new messages of good will, new inspiration, he himself inspired, as he has said it in that Annual[2] which shall ring through many years to come.

> "Ah, brothers, dear brothers, the harp that I hold
> No craftsman could string and no artisan mould.
> He formed it, He strung it, who fashioned the lyres
> That ring to the hymns of the seraphim choirs."

He has taught us and has helped us to teach others far more than that the human body is the most beautiful of machines replete with evidences of design, instead of being, as our old puritanical dogmatism had it, a "thing for our damnation wrought."

His voice has always rung out strong and true against the sugared lie, in favor of the wholesome truth; upon the needle-point of his acuity he has held the acarus of humbug and of false teaching up to the light; the trenchant weapon of his wit, not smeared with Sir Kenelm Digby's weapon salve, but anointed with the sweet balsam of all good intent, has gone home to the very pith and marrow of what makes this, or should make it, the most liberal of professions.

For his thoughts of us we have to thank him, — thoughts which we hold as part of that eternal truth of which we are each and every one the temporary custodians, for which we cannot repay him except in so far as we do therewith what he would have us do, use rightly for ourselves, and then pass on; and for our daily use he gives us watchwords; what kindlier suggestion to gentleness, to patience, to broadness of observation, than this: "Nature is kinder than the doctors think"? what better admonition to earnestness and singleness of purpose than in these words: "The principal object of the practice of medicine is the benefit of the patient"?

Since it is so rare a pleasure to have Dr. Holmes with us, it is but natural that we should covet his counterfeit presentment to hang upon these walls in company of his mute friends, his silent witnesses: and it is with these thoughts that I bring you the pleasant message that Dr. Holmes has consented to sit for his portrait, that the portrait is now in process of painting, and that when completed it will find its home, as he has always done, here.

Dr. W. L. Richardson: I simply rise, sir, to move that the association accept the portrait offered by Dr. Blake and his associates, and tender them our thanks.

Dr. Chadwick, after calling attention to the library of Dr. Holmes, to a collection of photographs of him and his surroundings, and to "the fist of the intellectual champion of New England" in bronze, seconded the motion.

The motion was unanimously carried.

Adjourned.

THE NEW YORK ACADEMY OF MEDICINE.

Stated meeting, January 17, 1889. The President, A. Jacobi, M.D., in the chair.

Dr. L. Duncan Bulkley read a paper on

UNUSUAL METHODS OF ACQUIRING SYPHILIS, WITH REPORTS OF CASES.

The object of the paper, he said, was to call attention to the fact that not infrequently syphilis was acquired by means not only entirely innocent on the part of the sufferer, but which were also quite unexpected. By so directing attention to this subject his aim was, *first*, to put the profession and the community on their guard against this unseen danger; *second*, to show that syphilis was frequently present in cases where there had been no history of venereal communication; *third*, that there might be less stigma attached to the disease, since it was so frequently entirely undeserved; and, *fourth*, that the hope might be indulged that before long syphilis would be placed where it belonged, — among the infectious diseases, and thus be brought under the careful surveillance of the public health authorities.

The relative frequency of the contraction of syphilis otherwise than by sexual intercourse was by no means sufficiently appreciated. Yet it was a fact that the innocent transmission of the disease had given rise to dozens of epidemics in the past, and many thousands of cases in which it occurred had never been recorded. It was somewhat startling to learn that Fournier had recently made the statement that in about 25 per cent. of all the cases of syphilis in females which came under his observation the disease was innocently and undeservedly acquired; and this assertion has been corroborated by so high an authority as Picard. Dr. Bulkley had met within his experience about fifteen hundred cases of syphilis. In but a small proportion of these was there any note of the initial lesion, nor were there present at the time when seen any local sores or the remains of any; yet it was noted in no less than sixty-five of them, or 4.3 per cent., that the original chancre was not upon the genitals. Of these cases, thirty-four were in males, and thirty-one in females. In thirty the chancre was on the lips, in seven on the fingers, in six on the breasts, in six on the tonsils, in five on the tongue, in three on the cheek, in two on the chin, in one on the nose, in one on the eyelid, in one on the ear, in one on the hand, in one on the forearm, and in one on the sacral region. In at least 40 per cent. of the females in his private practice syphilis was acquired innocently and undeservedly; and certainly such a fact as this called for the prompt adoption of such measures as would, to some extent at least, mitigate this terrible evil.

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[1] See page 129 of the Journal.

[2] My Annual, 1866. O. W. Holmes.

The unusual methods of acquiring syphilis had been divided by him into three main groups, viz., (1) Syphilis Economica; (2) Syphilis Brephotrophica; and (3) Syphilis Technica. The first, syphilis economica, was acquired in the ordinary occupations of life, and it in turn was divided into three main groups, viz., (1) domestic transmission; (2) industrial transmission; and (3) personal transmission. Many cases had been recorded in which the disease was contracted from knives, forks, spoons, drinking-cups, etc. A very common method was by means of tobacco-pipes smoked by different persons in succession. One such case occurring in his own experience Dr. Bulkley related. It was that of a gentleman who, while living at a mining-camp, where he was engaged in assaying work, received a blow on the lip which caused an abrasion; and it was through this avenue that the syphilitic virus, remaining on a tobacco pipe used by previous smokers, entered his system. Cigars were also a common cause of infection, and some time ago he had reported two well-authenticated cases of this kind occurring in physicians. More recently he had met with a third case, in which, however, it was less certain that this was the source of the disease.

Various articles of personal apparel, such as shirts, pantaloons, etc., had been known to convey the disease; and he gave an account of a case of his own in which it was contracted from a bathing-suit. When the patient presented himself he was the subject of a well-marked recent syphilitic eruption, and on investigation it was found that the chancre was situated in the sacral region, about an inch above the anus. The explanation was that the patient, who was subject to intense itching of these parts, and sometimes had a slight fissure in the median line, had, while wearing a hired bathing-suit at Coney Island, rubbed the parts vigorously and pressed the garment tightly against them. There could be no question that the suit was infected with the virus derived from mucous patches on the person of some previous wearer. Bedding, toilet articles, opera glasses, and canes had all been known to convey the disease.

The next case that Dr. Bulkley related from his clinical experience was one in which the chancre was situated on the tongue, and was contracted from pins placed in the mouth; the patient being a respectable young woman employed in a large establishment on Sixth avenue, New York, who was in the constant habit of putting pins in her mouth in such a way that they would necessarily come in contact with the part of the tongue where the sore was situated. Lint and plaster sometimes conveyed the poison, and one physician had told him of a case in which caustic which had been used on a syphilitic sore had carried it; in this instance the virus probably adhered to the caustic holder. He said that he had failed to learn of a single case in which the disease was contracted from privy seats or urinals, popularly supposed to be such a frequent source of syphilitic infection.

The second group of syphilis economica embraced all cases of industrial transmission during or by means of various trade occupations. Glass-blowers' syphilis was one of the most common instances of this, and he said he had collected one hundred and sixty-two cases of it. Assayers and goldsmiths also became infected sometimes through their occupations. Musicians were liable to infection through their instruments, and tacks, pens, and coin had been known to convey the poison. No case was as yet on record in which it was alleged that the disease had been contracted from paper money or from postage stamps. It was commonly supposed that laundresses were peculiarly liable to infection from the clothing of syphilitic subjects; but this was by no means the case, since the fact that the hands were so constantly in warm water rendered absorption difficult.

In the third group was classed personal transmission by kissing, biting, etc. Next to the venereal act, kissing was the most frequent cause of infection. In his sixty-five cases of extra-genital chancre, no less than thirty were on the lips, and the greater number of these originated from kissing. In this way children became infected by their parents, and lovers conveyed the disease to their *fiancées* before marriage. He knew of one instance in which syphilis was given by the same man to two ladies to whom he was successively engaged. The first of these patients had a chancre on the tonsil, and in consequence of her having contracted the disease from him, her engagement was broken off. The other lady had a chancre of the lip, followed by constitutional symptoms, but she finally married the man. Another case which came under his observation was that of a lady who contracted the disease from a female friend through kissing.

Biting and tooth-wounds sometimes gave rise to syphilitic infection, and one case was on record in which it was purposely transmitted in this way from spite. The largest chancre that he ever saw (measuring three inches in length, and two in width) was on the ear in a man who had his ear torn in a fight It was probably bitten. Other sources of infection that might be mentioned are scratching, pinching, and innocent contact with syphilitic patients in bed and while carrying such patients. Breast-drawing was another source.

In the second class, syphilis brephotrophica, there were two groups, viz., (1) transmission from the nutrition of infants, and (2) transmission from general attendance upon infants. In a village in France no less than forty cases of syphilis were traced to a single child. He related a case in which a woman nursed two infants, — one her own and the other a foundling, — using one breast exclusively for each. The foundling died of well-marked hereditary syphilis; and after this she nursed her own child at both breasts, when both the child and the mother became infected. Articles used in the hand-feeding of infants might convey syphilis. In the general case of infants, articles used in the nursing toilet, combs, napkins, etc., might be the means; and it was sometimes transmitted through scratches and tooth-wounds by infants.

Syphilis technica was that which arose from body service by physicians, nurses, and attendants. It comprised a large number of sub-groups, but the principal were the following: (1) where the operator is the victim; (2) where the operator is the syphilofer; and (3) where the operator is the medium. There were almost numberless instances on record in which the physician contracted the disease from a syphilitic patient. It was sometimes acquired during operations, and sometimes in dissecting; while not infrequently students became infected through manipulative procedures. The largest number of cases were in accoucheurs and midwives; and Dr. Bulkley related one case of peculiar interest, in which a physician who had contracted the disease during a confinement, through an abrasion of the finger, conveyed it to his wife. In the case of the latter no initial lesion was ever detected. In another case that came under his observation, a lady contracted a chancre on the finger from dressing the eye of a relative with syphilitic disease. Instances were known in which chancres on the eyelids, nostrils, and lips were caused by carrying the soiled fingers to these parts; and physicians sometimes contracted the disease from syphilitic patients coughing in their faces, or while engaged in practising artificial respiration on new-born infants.

The second group, where the operator was the syphilofer, was a very large one. Here the operator communicates his syphilis in performing some body-service. In Russia, some years ago, a female quack infected a large number of individuals with syphilis while engaged in removing foreign bodies from the eye with the tip of the tongue. It was also a fact that two similar cases had been reported in this country.

In the third group of cases the operator was the medium, carrying the poison from one patient to another. Instances of this were well known in connection with vaccination, circumcision, transplantation of teeth, wet-cupping, and minor surgical operations. Dental instruments sometimes conveyed syphilitic virus, and he knew of three cases in which this was done by razor wounds. Twenty-five observers had reported cases of syphilis originating from eustachian catheterization, and about sixty such cases were attributed to a certain ear specialist in Paris.

It could therefore readily be seen that syphilis was a frequent source of unseen danger, and that it was by no means always a venereal affection. As we learned more of the disease it became more and more probable that it was much more common than was generally supposed. The only wonder, however, considering the varied sources of infection, was that the cases were not more frequent than they really were. The prevention of this great evil claimed, therefore, the best thought of the community and the profession.

Dr. S. T. Hubbard asked whether, in Dr. Bulkley's opinion, syphilis could be conveyed to a sucking infant through the milk of the nurse, when the latter, so far as could be made out, was entirely free from any lesion of the disease. A case which he believed to be of this kind, in which there was apparently no other source of infection, had occurred in his practice.

Dr. Bulkley replied that two observers had made experiments with the injection of milk from syphilitic women, and while one claimed that syphilitic infection was thus conveyed, the other met with negative results. At the present day most writers denied that the disease could be transmitted by milk alone, and held that when this was apparently the case the infection was really carried by some secretion associated with it.

The President, **Dr. A. Jacobi**, said that there was one circumstance which might explain how, under certain conditions, the milk might be the means of transmitting syphilis. There was some milk which might be capable of doing so, and some which was not. In the perfectly healthy woman, milk was a true secretion, made in the mammæ, and not a transfusion from the blood. There were, however, a number of conditions in which the milk was in a large measure simply a transudation. In anæmic or convalescent women, or in those reduced in strength by prolonged nursing, the milk changed its character, and the mamma became for the most part a filter through which was transmitted the serum of the blood, and whatever might be floating in the blood. Thus, when the nursing woman was healthy, medicines would not be transferred through the milk to the child; while, if her system became reduced from any cause, lead, iron, iodide of potassium, and other drugs, would be thus conveyed. From these facts, therefore, he could not doubt that under similar circumstances it was possible that syphilis could be transmitted by means of the milk.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES M. GREEN, M.D., SECRETARY.

December 8, 1888, the President, **Dr. William L. Richardson**, in the chair.

Dr. Rotch made a communication to the society, which he explained was simply a part of

SOME INVESTIGATIONS ON INFANT FEEDING,[1]

which he had been making during the past year, both clinically and in the laboratory. He stated also that his results in part supplemented, and in part corrected, certain observations reported by him to the society in May, 1887.

Dr. Townsend had used the methods advocated by the reader at the Seashore Home, with the best results. In sterilizing he used the quart bottle plugged with simple cotton. In regard to the various patent foods, he had found them all unreliable.

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[1] See page 130 of the Journal.

Dr. Rotch, in answer to certain questions by the members, said that he considered it very important to recognize that a successful infantile feeding would be best accomplished by not allowing any one part of the question to become too prominent, such as the coagulation, or sterilization, or the fat. He believed that it was the thorough attention to each and all of the questions involved which would accomplish the most favorable results. He also spoke highly of the value of sterilization.

In answer to a question concerning condensed milk, he said that if this preparation was used, it should be diluted nine times with water, and that the fat then having been reduced to about 1.35 it could be raised again to the physiological 4 per cent. by using the ordinary centrifugal cream, which could here in Boston be procured with an almost unvarying fat percentage of 20.

To do this the following simple formula was given: —

100 c.c. cream (20 per cent.) : 20 = x (the amount of cream needed) : 2.65

$$20\,x = 265$$
$$x = 13\tfrac{1}{4}\text{ c.c.}$$

This means that to every ounce of condensed milk diluted nine times, one drachm of 20 per cent. cream must be added to raise the fat percentage from 1.35 to the requisite 4.

Dr. Rotch exhibited a rachitic stomach with its well-marked enlargement of the greater curvature, and its capacity far above that of the normal stomach at the same age, seven months.

In reply to a question by Dr. Strong as to whether or not he would sterilize the food for all infants, Dr. Rotch replied in the negative, but added that when artificial feeding must be adopted from the beginning, it is safer to sterilize at first at least, until the infant has made a good start.

The formula which he now employed for the average infant was as follows: —

Twenty per cent. centrifugal cream	℥ jss.
Milk	℥ j.
Water	℥ v.
Lime water	℥ ss.
Sugar of milk, 1 measure, or	℥ iij. ⅜

The lime water should be added at the time of feeding, and not before sterilization.

Dr. R. A. Kingman reported, by invitation,

A CASE OF PERNICIOUS VOMITING OF PREGNANCY, RESULTING FATALLY.[2]

Dr. Doe said he had been asked to see the case, to give an opinion as to the advisability of inducing abortion; but he found the patient in such a generally healthy condition that he did not feel such a procedure was necessary. Whether the dilatation of the cervix and the packing were the causes of miscarriage in this case he could not say. He had himself dilated the cervix, in similar cases, and painted the cervix with iodine without untoward result; but a firm, large packing he has known to induce miscarriage.

Dr. Kingman said, in reply to questions, that shortly after the patient returned from Maine the urine was concentrated; but the amount was not small, except for a few days; after that the urine was normal. The patient was given nothing by stomach, except for a few days, for five weeks, but was fed entirely by rectum. In the first week she improved rapidly and gained weight, and often looked well, having a good color, and being strong enough to move about somewhat with but little assistance. She gradually and slowly lost ground, however, losing some twenty or thirty pounds. Sometimes she stopped vomiting, owing apparently to the quieting of her nervous system and the coincident removal of all exciting causes; but as soon as any exciting cause appeared, the vomiting would start again. He never himself believed in inducing abortion, except for a single day: this was after the collapse, but then the time was a bad one. He believed that the coexistent endometritis caused the miscarriage; and he thought the sudden death was due to disease of the heart, weakened by rheumatism, and to pulmonary embolism.

Dr. Boardman said that experience had led him to believe in the mechanical theory of the cause of vomiting in pregnancy in a large proportion of cases, not, of course, in all; and he cited three cases in illustration: —

Case 1. Seen in consultation two years ago. A German woman in each of her five pregnancies had suffered with obstinate vomiting. In the first two pregnancies she had miscarried early, and the vomiting ceased; in the third she aborted with a like result. In the fourth pregnancy labor was induced at the seventh month, the child living. In the fifth pregnancy, spontaneous premature labor occurred at the end of the seventh month. He had seen the patient when about five months advanced in her sixth pregnancy; she was emaciated, sallow, and feeble, from excessive vomiting, and he was called to decide the question of inducing miscarriage. On examining the case he found a prolapsed, movable uterus. With the patient in genu-pectoral position, he raised the uterus, and inserted a large Thomas's retroversion pessary, which held the uterus, and was worn with comfort. One hour later the patient vomited once, but never afterwards. Of course she was fed with care, with small quantities of milk, gradually increased in amount.

Case 2. A lady, six or seven months married, had presumably had an early abortion, when six or seven weeks advanced in pregnancy. It was found that the uterus was retroverted and prolapsed, but the patient would not submit to treatment. The next year she aborted again; she was then treated for the retroversion, and said to have been cured; but on again becoming pregnant, she again aborted. In all three pregnancies she had severe nausea and vomiting.

After the third abortion the lady came to the speaker, who found the uterus retroverted and prolapsed. He finally replaced the uterus, and fitted a pessary. Shortly after, the patient became pregnant; she carried the fœtus to full time, and had no vomiting. The pessary was removed after the fourth month.

Case 3. Married three years and never pregnant. The uterus was found to be retroverted and prolapsed, and the same treatment was pursued as in Case 2. The patient soon became pregnant and went to full term, wearing the pessary into the fifth month; there was no vomiting.

Dr. Kingman said there were two kinds of vomiting in pregnancy, — the physiological and the pernicious, — the one amenable to treatment; the other, fortunately rare, incoercible, and not amenable to treatment. He asked Dr. Boardman what he would have done in the case reported.

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[2] See page 132 of the Journal.

DR. BOARDMAN replied that he would have raised the uterus, and supported it with a large pessary.

DR. KINGMAN said he had tried raising the uterus with packing, and afterwards with a pessary.

Recent Literature.

Intracranial Tumors. By BYROM BRAMWELL, M.D., F.R.C.P.E., F.R.S.E. 8vo. pp. 270. With 116 illustrations. Philadelphia: J. B. Lippincott Co. 1888.

This work is "essentially based upon the writer's own clinical experience," although he "has not hesitated to avail himself of the opinions of other observers." The result is an interesting and valuable work, filled with much fresh matter, and the results of a large personal experience. Nevertheless, the view of the subject is necessarily a narrow one, for the "other observers" are almost exclusively English or American, and, as is too common among Englishmen, the work of German investigators is neglected. After a general discussion of the nature and ætiology of tumors, and the different clinical pictures which they may present, the author discusses the individual symptoms and their diagnostic and localizing value. Nearly thirty pages are devoted to the subject of optic neuritis, which he regards as a very frequent symptom, agreeing with Gowers that it is present in about 80% of the cases. Although this estimate — no figures are given — is below that of Annuske and Reich, it seems rather excessive, and is certainly much greater than the percentages of Mills and Lloyd or Bernhardt, although the latter's figures are based on admittedly incomplete examinations. Mills found 26% and Bernhardt 21½% out of all the cases, but in nearly one half of them no examination was made. In regard to the causation of optic neuritis the author gives an elaborate summary of the various theories, inclining to the irritation-pressure theory of Leber and Deutschmann, supposing that there is an irritant in the cerebro-spinal fluid, and that the intracranial pressure is increased. The author doubts whether neuritis is always produced in the same manner, and admits that the presence and nature of the irritant are still unknown. In regard to the localizing value of paralysis and spasm it is held that "localized epileptiform convulsions of the true Jacksonian type are more certainly produced by a discharging lesion in the motor area of the cortex, than localized paralysis by a destroying lesion; but when a localized paralysis due to a cortical lesion is present, it is more certainly indicative of the exact seat of the lesion than a localized convulsive seizure," agreeing in the main with Luciani and Seppili, to whose work, however, no reference is made. In the matter of localization the author seems to depend wholly upon the work of Ferrier, Schäfer, and Horsley. Having discussed the individual symptoms and their value, three chapters are devoted to the differential diagnosis, the focal diagnosis, and the pathological diagnosis. A chapter on the prognosis and cause and the medical treatment concludes Dr. Bramwell's part of the work. But Mr. A. W. Hare has added a chapter on the important subject of surgical treatment, with details as to the method of anatomical localization of the fissures on the skull. In this he, of course, follows Horsley, and gives a good résumé of our present knowledge, although a little fuller treatment of operative methods would have been of advantage. On the whole the book is of great value from its wealth of personal observations, and is an excellent manual upon a subject which has recently become so much more important than ever before. The arrangement is good, the style clear, and the illustrations, which are most profuse, are most admirable. They alone are worth the price of the book, for almost every one of them is new, and they are drawn from specimens in the possession of the author or his friends.

A Treatise on Hysteria and Epilepsy, with some concluding observations on Epileptic Insomnia. By J. LEONARD CORNING, M.A., M.D. Small 8vo. pp. 176. George S. Davis, Detroit. 1888.

This little book is one of the volumes in the neat and attractive Physicians' Leisure Library, but we would not have any physician "so slander any moment leisure as to" read the book. Certain things about these affections are told us, it is true, but no clear description of either affection is given, and the omissions are remarkable. In the account of hysterical joint affections nothing is said of the use of ether to aid diagnosis, and no mention is made of limitation of the visual field. We do learn, however, that in long-continued hysterical contractures degenerative reaction may be obtained — a point which would bear further amplification, as in this particular the author differs from all other writers on hysteria. In a treatise on epilepsy we should naturally expect some mention of the psychical equivalents, a note on the condition of the temperature in the status epilepticus, and some consideration of differential diagnosis, and, moreover, there are other drugs beside the bromides which are worthy of mention in considering the treatment. We do learn, however, that in almost every case the convulsions in the status epilepticus can be arrested, and even prevented from recurring for weeks by pressure on the carotids by means of an instrument devised by the author, which is exceedingly important, if true. The book is a shallow compilation from articles that are of rather ancient date, and is entirely unworthy of a place in the series. Why the well-known Edinburgh alienist is persistently called "Clauston" in it we cannot say.

The Medical Bulletin Visiting List, or Physician's Call Record: arranged upon an original and convenient monthly and weekly plan for the daily recording of professional visits. F. A. Davis, publisher. Philadelphia.

This book is of the usual size of similar record-books, for the inside pocket. While each page records only a week's visits, yet by an ingenious device of half leaves the names of the patients require to be written but once a month, and a glance at an opening of the book shows the entire visits paid to any individual in a month. It will be found a great convenience.

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THE "HOMING" INSTINCT IN MAN AND ANIMALS.

The mental quality by which nearly all animals, from man down, are impelled to seek to return to their homes, is one which especially attracts the interest of the physiological and psychological student. While occasionally a man cultivates himself (or dwarfs himself) into so thoroughgoing a world-citizen that he ceases to have or care for any place which he can call home, the mass of mankind are affected sooner or later by nostalgia. Political leaders and colonizers, and even generals, have had to reckon with this as a potent motive with those under their control. The lament of the ten thousand Greeks and of the captive Jews in Babylon are classic examples of epidemic nostalgia. In sickness and in the delirium of fever the homing instinct asserts itself with peculiar power. But it is especially in the lower animals, in whom considerations of sentiment are wanting, that the homing instinct is most difficult of explanation. Its importance as a preservative of the integrity of the species is great. Were an animal to lose his sense of locality, and his desire and ability to return home from his wanderings, he must either confine himself within a narrow range, or fail to continue his relations to his mate and offspring.

The return of fish to their native streams to spawn, the utilized instinct of the carrier pigeon, the return of honey-laden bees to their hives, the homing of domestic animals, like dogs and cats, and the clinging of the latter to deserted houses, are illustrations of this remarkable trait. The gregarious animals — sheep, buffaloes, etc. — are said not to possess the faculty as do the hunting animals, which raises the interesting question whether it is the place or the society which calls the wanderers back.

Every one has seen instances of the habit in the domestic animals. Cats and dogs taken from home find their way back. By what power do they accomplish this? Surely, not by memory, for a cat carried in a closed basket returns as readily as if he had seen the way he was taken. Some remarkable instances are given in a recent pamphlet by Dr. Geo. M. Gould[1] upon this subject. Thus, a collie sent by express from Boston to Hartford returned afoot: time ten days, distance one hundred miles. A fox-hound lost in a deer-hunt returns home, one hundred and twenty-five miles in twenty-four hours. Some hounds being transported from Morgan county, Ga., to Live Oak, Ark., escaped from the car at Memphis, and "in a short time appeared at the old home utterly starved and worn out, the distance being about five hundred miles, air-line."

A pointer puppy, whose home was in Cincinnati, was experimented upon a number of times, returning home always, once in a blinding snow-storm. Then he was drugged with an alcoholic solution of morphia, and sent in a freight-car to Somerset, Ky., sleeping most of the trip from the narcotic. He then escaped and returned to Cincinnati, reaching that city in about twenty-eight hours, after having run one hundred and forty-two miles. Again this same dog was "fuddled with ether," had his nose bandaged with a rag scented with musk, and was taken a journey first "south-west to Danville Junction, thence east to Crab Orchard, and finally north-west to near Berea, Madison county, Ky. When released he slunk off into a ravine, scrambled up the opposite bank, and scampered away at a trot first, and by and by at a gallop — not toward Crab Orchard, *i.e.*, south-east, but due north toward Morgan's Ridge and Boonsboro' in a bee-line toward Cincinnati, Ohio. They saw him cross a stubble field, not a bit like an animal that had lost its way and has to turn right and left to look for landmarks, but 'like a horse on a tramway,' straight ahead, with his nose well up, as if he were following an air-line toward a visible goal. He made a short *détour* to the left to avoid a lateral ravine, but far ther up he resumed his original course, leaped a rail-fence, and went headlong into a coppice of cedar-bushes, when they finally lost sight of him." "A report to the above effect, duly signed by the Berea witnesses, reached the dog's owner on February 4, and on the following day Hector met his master on the street, wet, and full of burrs and remorse, evidently ashamed of his tardiness. That settled the memory question. Till they reached Crab Orchard the dog had been under the full influence of ether, and the last thing he could possibly know from memory was a misleading fact, viz., that they had brought him from a south-westerly direction. Between Berea and Cincinnati he had to cross three broad rivers, three steep mountain ranges, and had to pass by or through five good-sized towns," etc.

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[1] The Homing Instinct, etc., by Dr. George M. Gould. Reprinted from Progress, October, 1888.

Such instances are not very uncommon, but the author quotes further "a well-authenticated report," which utterly staggers credulity, of a tortoise caught by the crew of a British East-Indiaman near St. Helena, marked with a brand of the company, and quartered in the cockpit. While the ship was in the English Channel the tortoise escaped and plunged overboard. A year after the same tortoise was caught in Sandy Bay, near Jamestown, on the south coast of St. Helena!!

By what sense do these animals find their homes? Bees return at night to hives on boats floating down the stream, and miles distant from where they left them in the morning. Sight and scent may account for the return in some cases, and memory in some others; but in many, as some of those above referred to, all these sources of knowledge can be ruled out.

Dr. Gould, in the pamphlet referred to, advances a new theory, which seems to be hardly adequate to explain all cases, but which is certainly novel and ingenious. It is that of a response in the animal organism to the magnetic and electrical forces of the earth, so that he is informed of the *direction* of his home. "The north pole of the animal is his home," and the magnetic forces of the earth carry to some special organ of magnetic sense within his central nervous system such impulses as show to him the direction of the spot where those magnetic forces are in equilibrium. At that place "habit begets such an equilibration that there is no stimulus or tension whilst there and remaining under the play of the uniform magnetic forces of that neighborhood. Remove the animal to a locality where (as is the case) there is a difference of magnetic tension, another consensus of magnetic and electric forces, and at once the magnetic sense-organ feels tension, stress, or torsion, there are unrest and dissatisfaction. Motion toward the animal's north pole, the home, gives relief and increased satisfaction; motion away from the same, the reverse."

This theory presupposes an organ of the magnetic sense somewhere in the body; and here the author seems to weaken his position by assuming that the site of this sense is the pineal gland, — that mysterious centre which so appealed to the imagination of Descartes that he considered it the seat of the soul. Without following Dr. Gould so far in the realm of the unknowable, we may grant that the idea of a special sense, which is concerned with the homing propensity, is by no means absurd: whether that sense is affected by electro-magnetic impulses is quite another thing. But that the so-called "five senses" are all that is possible for animals to possess, is an unjustifiably dogmatic assertion. A temperature sense, an electrical sense, and other unnamed senses, are at least as reasonable, and fully as thinkable, as the so-called space in four dimensions which at present the mathematicians are amusing themselves with.

If some such additional sense is the basis of the homing proclivity in animals, it may well be that nostalgia in the human subject as well has something of a physical basis. It is often the place and not the people that homesick travellers long for. "Be it ever so humble," or be it a barren or an unhealthful spot, unreasoning nature often drives the former inhabitant back to it, despite the bribes of social reformers or the threats of despotic rulers.

A NEW REMEDY FOR CHOLERA.

Loewenthal[1] has concluded a course of experiments undertaken to find an antidote to the virus of cholera. This toxic principle is now, according to the newest pathology, regarded as the product of Koch's cholera bacillus — a ptomaine, in fact, which is destroyed by cultivation in artificial nutrient media. Loewenthal has found that a pure culture of these cholera bacilli in peptonized broth, previously sterilized, is absolutely inoffensive to animals — as white mice — naturally susceptible to the cholera poison; the bacilli ceasing to produce the noxious ptomaine.

The first aim of Loewenthal's experiment was to render to the cholera bacillus, by a process of the laboratory, the toxic property which it possesses when fresh, but which is lost on cultivation. After many fruitless essays, he believes that he has succeeded with a paste which contains pancreatin, and the composition of which is as follows: fresh pork (muscle), hashed, 500 grammes; pancreas of hog, hashed, 200 grammes; bean flour, 100 grammes; peptone, 15 grammes; grape sugar, 10 grammes; common salt, 5 grammes. These substances, mixed with water or milk, give a soft paste, almost liquid, which is rendered alkaline by a little potash, and then sterilized by hot steam. The cholera bacilli, which by culture have lost their pathogenic properties, are allowed to breed in this artificial paste. They immediately secrete their virulent ptomaine, which, when inoculated in mice, either kills these animals or makes them intensely sick.

By varying the elements of his culture mixture, Loewenthal finally satisfied himself that it is the pancreatic juice which, in presence of albuminoid and peptonized substances, determines the pathogenic or poison-secreting action of the bacillus. All the other culture media (peptone-gelatine, agar-agar, bouillon) assure the development of the bacillus, but no toxic matter is produced.

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[1] Acad. des Sciences, Session Dec., 1888.

This peculiar action of the pancreatic juice being understood, we have, says Loewenthal, an explanation of the phenomena of cholera in man. The bacilli, after being ingested, escape the stomach, and entering the intestine, produce there, with the help of the pancreatic juice, the same toxic matter which is produced in the pancreatic paste, the latter being a coarse imitation of the contents of the duodenum; this toxic matter is absorbed and the restoration or death of the patient depends on the quantity of poison absorbed and the resistance of the organism. This experimental fact is in harmony with the anatomo-pathological fact that the bacilli of cholera remain always confined to the intestine, as well as with the "fulminant cases," and the experiments of Nicoti and Reitsch, and those of Koch on animals.

This point being once determined, Loewenthal asked himself if there might not be some substance inoffensive to man which, introduced medicinally, would prevent the development of the cholera poison in the intestine. To determine this, he first experimented with his pancreatic paste, trying various antiseptic agents which he thought might prevent the active functional operations of the bacilli and the genesis of the toxic ptomaine. Any agent, he reasoned, which can accomplish this *out of the body,* might be relied upon to do the same *within the body,* and thus become a specific (preventive and curative) remedy for cholera.

This remedy Dr. Loewenthal announces that he has found in salol, the salicylate of phenol, discovered in 1886 by Nencki, of Berne. This powerful antiseptic is decomposed in the organism by the pancreatic juice, the same agent which renders toxic the cultures of the cholera bacillus in the pancreatic paste. A multitude of experiments have assured him that salol in presence of fresh pancreatic juice is invariably fatal to the cholera bacilli in his laboratory culture-tubes; and he has determined the quantity which is sure to effectually sterilize his cultures, namely, two grammes of salol to every ten grammes of the paste; a smaller dose, however (as ten centigrammes), renders the bacilli inactive.

It is known that salol can be taken in pretty large doses (as much as ten to fifteen grammes a day) by man with comparative impunity.

It must be added that the above interesting laboratory experiments, conclusive as they seem to be to their author, who has full faith that he has now found a sure specific for cholera, still lack clinical confirmation, as well as that confirmation which comes from a series of carefully conducted experiments on animals.

MEDICAL NOTES.

—The answer of Robert Garrett, says the *New York World*, to the suit of Dr. Nathan R. Gorter for $30,000 for medical attendance upon Mr. Garrett while he was abroad in 1887, was filed Jan. 26th in the superior court of Maryland. It states that Dr. Gorter was engaged to accompany Mr. Garrett on his trip, but no arrangement was made as to the rate of compensation he was to receive. Dr. Gorter accompanied the party as far as Berlin, where, in May, 1888, he finally left Mr. Garrett. He was then asked to name the amount he proposed to charge, but he declined to do so on the ground that he desired to consult with his friends in America as to what would be a proper charge. He asked, however, to be paid $1000 on account, which amount was promptly given him in addition to a sum amply sufficient to cover the expenses of his return home. Up to that point all travelling expenses of every description had been paid by Mr. Garrett. The defendant thinks that $4000 in addition to the $1000 already paid would be proper compensation.

—In December last the physicians and many of the leading citizens of Long Branch, N.J., established a free hospital, which they called the Long Branch Memorial Hospital. They engaged a lower floor on Broadway until such time as a building site could be agreed upon and a building erected. No lease, however, was taken of the premises. Now just as the rooms were handsomely furnished with beds, operating tables, and chairs, and other necessary articles, the hospital authorities have been told by the landlord to vacate the premises. He says he has many other tenants in the building, and they have complained to him of the noise made by the patients. The tenants also say they are afraid of catching infectious and dangerous diseases, and that unless the hospital is removed they will vacate immediately. For this reason the order to vacate was given.

—The Medical Practice Act in Kentucky will go into effect on the 1st day of April of this year, and after that date no one can practise medicine in the State unless he has a diploma from a reputable medical college indorsed by the secretary of the State Board of Health; and registered in the office of the county clerk; or in default of this, he must have been reputably and continuously engaged in the practice of medicine for twenty-four years preceding the passage of the law.

The penalty for violating this law is severe; and as one-third of the fines goes to the prosecuting attorney, he will be rigid in compelling the doctors to comply with its provisions.

— The *Medical News* says that at Vienna a beginning has been made of a promising museum of specimens illustrative of medico-legal questions. About fourteen hundred specimens have been gathered, chiefly by Prof. Hofman and his assistants, and have been given a place at the General Hospital, along with other and older collections. Considerable space is given to specimens relating to sexual jurisprudence, the production of abortion, homicide, suicide, the effect of poisons, of burns, the lodgment of foreign bodies in the respiratory passages, and the identification of the dead body.

— Dr. Joseph Y. Porter, surgeon in charge of government relief measures, sent January 20th the following official announcement of the completion of disinfection in Jacksonville, Fla., to Surgeon-General Hammond in Washington: —

"The work of disinfection and destruction of infected bedding is practically finished in this city. It is perfectly safe for any one to visit Jacksonville who may wish to, as the work has been as thorough and efficient as human agency could make it. It speaks for itself that Jacksonville is perfectly clean. Please announce this through the public press, so that the timid may have their fears removed and that confidence in the city may be restored."

— The *Edinburgh Medical Journal* quotes a recent epigram of Mr. Baron Huddleston as follows: — "Such was the intricacy of the lunacy laws," said his lordship, "that they had a tendency to reduce persons who gave an abstruse study to them into persons for whose benefit they were intended."

— A number of prominent citizens, physicians and laymen, of Brooklyn, N.Y., have organized for the establishment of a throat and ear hospital in that city.

— The annual report of the Salem, Mass., Hospital Corporation shows that two hundred and seventy-nine patients were treated during the year, one hundred and three in the medical, and one hundred and seventy-six in the surgical, departments. The average cost per patient was $1.69. Of the number treated, one hundred and ten were entirely free. There were four hundred and twenty-five patients in the eye and ear department. During the year three nurses have completed their course, and received their diplomas in the training school. The treasurer reports the receipts from all sources as $33,336. The disbursements were $29,396, which included investments of $15,879.

— It is said that the city council of Jacksonville has employed E. W. Bowditch, sanitary expert, of Boston, to make a thorough examination of the sewerage system of Jacksonville.

— At a special session of the Malden, Mass., Board of Aldermen, held January 29, it was voted that the mayor and one alderman be joined with such as the common council may select to investigate thoroughly the rumors in the city that the recent deaths of Dr. Charles B. Shute and ex-Alderman F. M. Clark were due to improper exposure while investigating the sanitary systems of public buildings in Worcester and Waltham.

— Commissioner Wright, of the Bureau of Labor, has made a report on "Working Women in Great Cities." Their condition, as acertained by interviews, is summarized in the daily press. The average weekly earnings in various sections of the country are given. The health of many has been greatly affected since commencing work. The character of the working woman is as good as any in the land.

The report shows that of the 17,426 who reported their health conditions at the time they commenced work, 16,360 were in good health, 883 were in fair health, and 183 in bad health. The changes in health condition is illustrated by the fact that 14,554 are now in good health, 2,385 are in fair health, and 489 are in bad health. The tables disclose no particular facts relative to the health changes in the different cities or by industries. In home conditions, 12,020 report themselves comfortable, while 4,693 state that the home conditions are poor; and "poor" in this investigation, says the commissioner, is poor indeed. In shop conditions, however, a better state of affairs exists.

BOSTON.

— The report of the Children's Hospital shows that it is the expectation of the Board of Managers to complete the building according to the original plan by the erection of the second wing during the coming year.

— Surgeon-general John B. Hamilton, says the *Chicago Journal*, who accepted the editorship of the *American Medical Journal* about a month ago, has resigned the position. He has decided to keep his place as surgeon-general, because Congress has increased the salary fifty per cent., and made the position virtually a life one.

— The incorporators of the Boston Lying-in Hospital held their annual meeting January 16 in the hospital building, McLean street. The following-named officers were elected: president, Uriel H. Crocker; vice-president, James Ayer; treasurer, Otis Norcross; secretary, Henry F. Jenks; trustees, Horace Dupee, Oliver W. Peabody, Augustus Flagg, Henry H. Sprague, Abbott Lawrence, William H. Baldwin. The treasurer's report showed that the receipts of the year were $13,896, and the expenditures $15,467. The deficiency was caused by $2625 being expended on the repairs to the hospital. A vote of thanks was extended to the visiting physicians for the excellent manner in which they made their annual report. The executive committee reported a most prosperous year, and as an evidence of the good work accomplished, read from papers submitted to the St. Thomas Hospital, London, and the Victorian Hospital at Melbourne, whose authors commended the Boston Lying-in-Hospital in the highest terms.

NEW YORK.

— In the annual report of the State Board of Charities, which has just been presented to the legislature, it is stated that the increase in the number of insane patients in the various institutions in the State has been 710 during the year, and since 1880 has been 5235, or an annual average of 654. The ratio of increase during the eight years has been a little over 48 per cent., while the ratio of increase of the population of the State for the same period has been only about 19 per cent. The board finds the insane hospitals and asylums of both New York and King's counties filled beyond their proper capacities, and strongly urges increased accommodations.

— At a review of the 13th Regiment by the governor, at its Armory in Brooklyn, on January 29th, Surgeon-general Joseph D. Bryant presented the State badge of the Red Cross to twelve members of the ambulance corps of the regiment, graduates of the class of 1888.

— At the New York Academy of Medicine Dr. Landon Carter Gray has been elected chairman of the Section of Neurology, Dr. Robert Albe chairman of the Section on Surgery, and Dr. A. B. Judson chairman of the Section on Orthopædic Surgery.

Miscellany.

THE MEDICAL TREATMENT OF PERITONITIS.

Dr. John H. Musser has an article in the *University Medical Magazine* for February, 1889, in which he protests against the idea that the disease in question is properly amenable only to surgical treatment. "We cannot," he says, "but look askance at the extraordinary surgical activity that prevails."

The summary of the cases, all in private practice, from which his conclusions were drawn, is as follows: —

Total cases	29
" deaths, including pleuro-pneumonia	3
No. of puerperal cases	7
" deaths	3
" non-puerperal cases	22
" deaths	0
No. of times laparotomy or other surgical means employed: —	
In puerperal cases	1
" nonpuerperal cases	3
Total	4
No. of deaths from laparotomy, etc.	0
" recoveries without operation — Non-puerperal	19
" " " — Puerperal	3

In short, of twenty-two cases, three-fourths, certainly one-half of which were desperately ill, recovered from peritonitis, operative interference being necessary in three only.

Method of Treatment. — 1. Local blood-letting until pain is very much relieved. Better too much than too little blood abstracted. Three to fifteen Swedish leeches, according to age. If in progress more than forty-eight hours, a large blister. Both of the above to be followed by hot applications, stimulating liniments, as turpentine stupes, if bleeding or blisters not used.

2. Liquid diet absolutely, stimulants administered freely to prevent collapse, to lessen its severity, and to prevent tympany. In severe cases whiskey and water alone, until the most urgent symptoms subside. Cracked ice, lime water, champagne iced, are used for thirst or vomiting, but their value is questionable; indeed, sips of hot water or hot whiskey and water are generally preferable. Freshly made Koumiss has been of wonderful service, even after vomiting has set in.

3. Calomel in small doses, hourly, until the bowels are moved; then combined with opium in small amounts, to prevent diarrhœa, until ptyalism is secured. If the evacuations produce relief, as is often the case, the ptyalism need not be induced. One-eighth to one-half of a grain of the calomel is used, and has the advantage of being retained usually, even if vomiting is obstinate, while it frequently allays this troublesome and weakening symptom. Inunction may be required for mercurialization.

4. If seen early, aconite to children and veratrum viride to adults, is given until the pulse-rate is lessened. With veratrum particularly a cool, moist skin, a lower pulse-rate and fall of temperature, which should be brought about in twenty-four to forty-eight hours, are followed by relief to the local symptoms. Three to six drops of the veratrum (fluid extract), hourly, usually suffices.

5. To relieve pain, morphia, hypodermically, in small doses, as infrequently as possible. It seems better to combine atropia with it for obvious reasons. Twice daily often suffices, with one-fourth, one-eighth, or one-twelfth of a grain. When an opiate is combined with calomel, the morphia can be withdrawn generally. If morphia disagrees, as one often finds it to do, codeia will often suffice, given by the methods suggested by Brunton.

6. If the bowels are not opened in forty-eight hours by the calomel, if the cause is not one of strangulated hernia or acute obstruction of the bowel by a twist or by adhesion by a band, an enema of warm sweet oil (Oj) and then of tepid water are used with extreme care. It is undoubtedly of service to have the bowels moved as soon as possible. That peristalsis does not do as much harm as is usually taught, we know, because diarrhœa attends some cases of peritonitis, as we have seen more

particularly in pericæcal abscess. Moreover, accumulations of gas are prevented, a thing highly desired. Indeed it may be put down as a cardinal rule in therapeutics that in all affections of or about the tubes or channels, a patulous state of the canal must be obtained if possible.

7. There is no doubt, even when on the verge of collapse, that life can be saved by persistent and active stimulating medication. This must usually be by subcutaneous injection. Whiskey, digitalis, atropia, and amyl nitrite, all have been of service.

STROPHANTHUS IN DISEASES OF THE HEART.

Bucquoi read a paper on the above subject at a recent meeting of the Academy of Medicine, Paris, of which the following are the conclusions: —

"Strophanthus is a cardiac medicine of the first order, deserving a place by the side of digitalis, fulfilling nearly the same indications as the latter. In mitral lesions it increases the energy of the heart's contractions when compensation becomes insufficient, and attenuates, if it does not completely remove, the symptoms of asystolia. In my experience, strophanthus is superior to every other remedy in mitral constriction when the heart begins to fail; the dyspnœa, the oppression disappear, as if by magic. Strophanthus is a good diuretic, though not (in the majority of cases) equal to digitalis; in many instances, the diuresis following its administration lasts a long time, the quantity of urine amounting to four or five litres a day.

"Strophanthus, as a cardiac tonic, is free from the principal dangers that attend digitalis."

TUBERCLE OF THE VAGINA AND CERVIX UTERI.

Tubercular disease of the female organs is more frequent than was formerly supposed to be the case. Dr. Zweigbaum, of Warsaw, recently described in a German newspaper the case (to which we find further reference in the *British Medical Journal* of January 12) of a woman, aged thirty-two, and the mother of five children, all whose near relatives had died young. Fungous ulceration of the vaginal portion of the cervix occurred; it was burnt with the thermo-cautery, and healed after a course of three weeks. The ulceration recurred with profuse discharge. On exploration, a cavity, big enough to lodge a walnut, was discovered in the left posterior aspect of the vaginal wall. The edges were hard, the base ashy-gray and lardaceous in appearance. This cavity reached to the vulvar aperture. A hard, gray-based ulcer lay on the cervix. The inguinal glands were enlarged. The ulcer of the vagina increased; a portion was excised and examined under the microscope; it was found to contain hosts of bacilli. After five months of suffering the patient succumbed to rapidly advancing tubercular disease of the lungs and intestines. The local disease above described had also made great progress, invading the vulva. Dr. Zweigbaum could not prove that the tubercular lesions of the genitals were the primary condition in this case, but considered that there were good reasons for thinking so. The tubercular process had greatly advanced in the outer genitals before there were distinct signs of lung disease. The invasion of the vulva was remarkable in this case. Only two cases, according to Dr. Zweigbaum, have previously been recorded, whilst he has found twenty-nine cases of tubercle of the vagina and cervix. In nearly half of the latter there was simultaneous tubercular disease of the internal organs. In only three was there evidence that the disease was primary; in the remainder general tubercular disease existed. Dr. Zweigbaum concluded that there was no difficulty in understanding how secondary tubercular disease could attack the female organs. He traced primary disease of the same parts to direct infection either during coitus, or from the fingers of midwives and nurses who attend tuberculous patients. Infection might also occur through injections. Uterine and tubal catarrh, and, above all, chronic gonorrhœa, predisposed the patient to tubercular infection.

Correspondence.

ANÆSTHESIA PRODUCED AND MAINTAINED BY SMALL QUANTITIES OF ETHER.

Sacramento, Cal., Jan. 24, 1889.

Mr. Editor,— Having read Dr. Lovett's timely article in the Journal of December 6, 1888, I wish to say a few words in reply to emphasize his conclusions and at the same time to point out that better results are possible. Boston, which is justly regarded as the sponsor for ether in this country, should be able to show results which equal those obtainable anywhere; and at the risk of covering the same ground which I have already traversed,[1] I shall say a word on the manner of producing anæsthesia, the time required to produce it, the quantity of ether employed, and the amount necessary to maintain the effect. Dr. Lovett is eminently correct in his view of "the beneficial effect of using small amounts of ether in regard to the after-effects," yet it will be possible for him to greatly reduce his figures. In the first place, as I have often stated, it will be necessary to adopt some form of permanent apparatus, for no extemporized cone will fulfil the conditions of efficient ether administration. Dr. Lovett rightly says that the admixture of air produces a *quasi* anæsthesia or intoxication, and that it is better to give pure ether. To do this he must abandon the cone and towel. His average time required to produce anæsthesia is seven minutes; this he can probably at once reduce to four, and with further practice and a larger series perhaps as low as two minutes. The average amount of ether required to produce anæsthesia in his series was "only two ounces." This is the best feature in the table; but with a proper inhaler the average will fall to one ounce, less than that quantity being very frequently employed. That is to say, that one ounce of ether having been poured on the sponge, the patient will be ready for operation before that quantity has been exhausted. When we consider the amount of ether required to maintain insensibility in Dr. Lovett's table, the great waste of the drug in the extemporized apparatus is at once apparent. In every inhaler the ether poured on the sponge does not represent the quantity inhaled; but in the cone and towel, while the waste is greater, the actual amount entering the lungs is also probably increased, owing to the additional time during which the vapor is being breathed. Looking over the table before me I find that the average quantity of ether used in ten thirty-minute operations was 6 oz.; in two sixty-minute operations 8.8 oz.; and in one ninety-minute operation 14 oz. were consumed. Dr. Lovett concludes that "in general the amount of ether required for each additional five minutes was one ounce." My experience in several hundred cases is, that four drachms for each additional seven minutes is a most liberal allowance, and that quite often four drachms for each additional fifteen minutes will be sufficient. This is particularly true in abdominal operations, in which, as Mr. Woodhouse Braine says, profound anæsthesia is rarely required when once the cavity has been opened. I shall merely give one case, colporrhaphy and perinæorrhaphy in which I recently administered ether and I select it because Lyman says that these parts are amongst the last to lose sensibility, *e.g.*, more profound anæsthesia is required. The duration of the operation was seventy-five minutes, the amount of ether consumed three and one-half ounces. The administration could have been continued for ten minutes longer without any addition. I may state that I always measure the ether when used pouring one ounce on the sponge at the commencement, and subsequently adding the anæsthetic in quantities of four drachms.

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[1] Boston Medical and Surgical Journal, April 23, 1888.

Yours truly,

James H. Parkinson.

REPORTED MORTALITY FOR THE WEEK ENDING JANUARY 26, 1889.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diph. & Croup.	Scarlet Fever.	Measels.
New York	1,526,081	708	289	24.50	19.46	7.84	7.70	3.08
Philadelphia	1,016,758	355	118	13.44	13.16	5.60	2.52	—
Brooklyn	751,432	360	148	21.60	15.60	10.80	2.97	3.78
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	163	62	16.47	13.42	6.10	1.22	2.44
Baltimore	437,155	157	53	11.52	9.60	3.94	1.28	—
Boston	407,024	198	65	12.50	16.00	7.00	—	—
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	248,000	111	24	9.00	15.30	2.70	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	111	42	12.60	14.30	4.50	.90	—
Pittsburg	210,000	77	28	10.32	21.93	3.87	3.87	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	29	9	13.80	13.80	6.90	—	—
Portland	40,000	18	2	5.55	—	—	—	—
Worcester	76,328	23	16	30.45	17.40	—	—	4.35
Lowell	69,530	27	11	7.40	14.80	3.70	—	—
Cambridge	64,079	19	9	10.52	15.98	10.52	—	—
Fall River	61,203	30	10	16.66	—	—	6.66	—
Lynn	51,467	10	—	—	—	—	—	—
Lawrence	40,175	13	4	7.69	—	—	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	13	3	7.69	7.69	—	—	—
Somerville	33,307	6	1	—	16.66	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	16	8	18.75	12.50	18.75	—	—
Chelsea	27,552	7	2	—	—	—	—	—
Haverhill	24,979	5	1	—	20.00	—	—	—
Taunton	24,796	4	—	—	—	—	—	—
Brockton	24,784	—	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	9	4	55.55	—	55.55	—	—
Malden	18,932	4	—	25.00	—	—	—	—
Fitchburg	17,534	4	2	—	—	—	—	—
Waltham	16,651	4	—	—	—	—	—	—
Newburyport	13,839	10	3	10.00	—	10.00	—	—
Northampton	13,419	—	—	—	—	—	—	—
Quincy	13,336	—	—	—	—	—	—	—

Deaths reported 2491: under five years of age 914; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 438, acute lung diseases 390, consumption 327, diphtheria and croup 175, scarlet fever 85, typhoid fever 37, diarrhœal diseases 32, whooping-cough 17, malarial fever 12, measles 41, cerebro-spinal meningitis 10, erysipelas 17. From diarrhœal diseases, New York 8, St. Louis 6, New Orleans 4, Philadelphia, Baltimore, and Boston, 3 each, Brooklyn 2, Charleston, Lowell, and Fall River 1 each. From whooping-cough, New York 12, Brooklyn 6, Philadelphia and Washington 4 each, Boston 2, Pittsburg 1. From malarial fever, New York 5, Brooklyn 4, New Orleans 2, Baltimore 1. From measles, New York 22, Brooklyn 14, St. Louis 4, Worcester 1. From cerebro-spinal meningitis, New York 4, Washington 2, Philadelphia, Boston, New Orleans, and Worcester 1 each. From erysipelas, New York and Boston 4 each, Brooklyn and St. Louis 2 each, Baltimore, Washington, Worcester, and Fall River 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending January 12th, the death-rate was 25.5. Deaths reported 4670; infants under one year 1262: measles 366, whooping-cough 123, scarlet fever 50, diarrhœal diseases 36, diphtheria 35, fever 31.

The death-rates ranged from 16.7 in Brighton to 44.8 in Blackburn; Birmingham 28.3; Huddersfield 24.2; Hull 18.8; Leeds 24.2; Leicester 23.9; Liverpool 28.9; London 24.9; Manchester 34.6; Nottingham 18.2; Sheffield 26.0.

In Edinburgh 21.5; Glasgow 29.0; Dublin 30.2.

The meteorological record for the week ending January 26, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Jan. 20, 1889.	Barometer.	Thermometer			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
Jan. 20	30.52	18.5	39.0	9.0	56	66		61.0	N. W.	S. E.		9	13		C.	O.			.00
" 21	29.50	34 5	47.0	25.1	92	58		75.0	S. E.	W.		24	24		R.	C.		12.10	.38
" 22	30.29	23.5	32.0	19.9	45	53		49.0	W.	W.		13	8		C.	C.			.00
" 23	30.58	28 0	40 0	20.0	67	67		67.0	N. W.	S.		3	6		C.	C.			.00
" 24	30.30	40.5	50.0	32 0	74	74		74.0	S. W.	S. W.		7	12		O.	R.		2.15	T
" 25	30 16	37.0	46.0	33.1	72	58		65.0	W.	S. W.		5	7		C.	C.		0.15	T.
" 26	30.01	38.6	48.0	33.5	69	47		58.0	W.	S. W.		12	7		O.	O.			.00
Means for the Week	30.19		31.6	25.4				64.0											

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JANUARY 26, 1889, TO FEBRUARY 1, 1889.

Kilbourne, Henry S., captain, assistant surgeon U. S. army, will accompany battery E, 1st Artillery, changing station from Vancouver Barracks to Presidio, San Francisco, Cal., as medical officer, and upon completion of this duty will report to the Commanding General, Division of the Pacific, for further orders. Par. 2, S. O 6, Headquarters D. of Col., Vancouver Bks., January 22, 1889.

Leave of Absence.

By direction of the Secretary of War, the leave of absence on surgeon's certificate of disability granted Captain **Henry G. Burton**, assistant surgeon, in Special Orders No. 19, January 24, 1888, from this office, is extended six months on surgeon's certificate of disability. Par. 8, S. O. No. 22, A. G. O., Washington, January 26, 1889.

Leave of absence for one month, on surgeon's certificate of disability, is granted Major L. Y. **Loring**, surgeon. Par. 1, S. O. 6, Headquarters Department of Ariz., Los Angeles, Cal., January 18, 1889.

Leave of absence granted Captain **Curtis E. Price**, assistant surgeon, in S. O. No. 257, A. G. O., November 3, 1888, is extended two months. Par. 1, S. O. 21, A. G. O., January 25, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 2, 1889.

Scott, H. B., passed assistant surgeon, detached from Naval Hospital, Mare Island, Cal., and granted one year's sick leave.

SOCIETY NOTICE.

Gynæcological Society of Boston. — The next regular meeting will be held at No. 19 Boylston Place, on Thursday, February 14, 1889, at 4 P M. Paper: "The Diagnosis and Treatment of Cancer of the Breast." By J. Collins Warren, M.D

S. N. **Nelson**, *Secretary.*

Boston Society for Medical Improvement — A regular meeting of the society will be held at the Medical Library, on Monday, February 11, 1889, at 7.45 P M. Reader: Dr. James J Putnam. Subject: "The Symptomatology of Arsenic Poisoning of Wall Paper Origin, based especially on the Examination of a number of cases where Arsenic was found in the Urine, together with Remarks on the Time necessary for the Elimination of Arsenic." Dr. F. S. Watson: "A Clinical Note upon Renal Calculus." "A Case of Successful Removal of Portions of a Prostatic Hypertrophy through a Suprapubic Cystotomy."

F. B. **Harrington**, M.D., *Secretary.*

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, Feb 13, at 7 15 o'clock. By a vote of the Section, the topic for this meeting will be "The Etiology and Treatment of Diphtheria," as follows: 1. Dr. S. N. Nelson, "The Etiology of Diphtheria. 2. Dr J H. McCollom, "The Course of Diphtheria in Boston in 1887 and 1888, with Charts." 3. Dr T. M. Rotch will open a discussion on "The Treatment of Diphtheria" Drs Cheever, Gay, Tarbell, Harold Williams, Cutler, and others will take part in the discussion

A. L. **Mason**, M.D., *Chairman.*

Albert N. **Blodgett**, *Secretary.*

IN MEMORIAM — NATHAN ALLEN, M.D.

At the meeting of the Middlesex North District Medical Society, held at Lowell, January 30th, the following memorial on the death of Dr. Nathan Allen was presented and adopted: —

IN MEMORIAM.

Full of years and crowned with honors, the life of Dr. Nathan Allen, which has recently closed, tells us, in the midst of our sorrow and regret at the separation, the story of its eminent usefulness.

A member of the North Middlesex District Medical Society since its formation, and holding in it various offices, inclusive of the presidency, alike through its earlier period of antagonisms and its later reign of harmony. Dr. Allen was faithful to its duties and loyal to its interests. To use his own thoughts frequently expressed he was ever aiming to secure a better *esprit de corps* in the profession, to maintain a high standard of admission to its ranks, and to make this society an increasing power for good in the community.

It was partly with the latter end in view, and partly the outgrowth of the public spirit which was a leading trait of his character, that he for a long time agitated the question of a better provision for the sick poor of Lowell than had previously existed, and at last induced this society to take definitive action on the subject. When, later on, the present city dispensary was proposed, he evinced a lively interest in its establishment, and afterwards took an active part in its ministrations.

His philanthropy was made still further prominent by his long connection with the State Board of Charities, and with St. John's Hospital. The annual reports of the last-named institution from its foundation up to a recent date were written by him, and breathe a tender spirit of humanity.

His interest in the welfare of his adopted city was notably illustrated by his services on the local board of health, and by his persistent efforts to impress upon the minds of his fellow citizens a knowledge of sanitary laws and the necessity of their observance.

But the labors which most emphasize the character of his mind and have given him his widest celebrity were in the direction of sanitary economy and social science His papers on subjects relating to these branches of knowledge were numerous, but his fame especially rests on his investigations into changes in the population of New England as based on certain physiological laws of human increase, which laws he considered applicable to all peoples. To elaborate these ideas or to unfold the moral purposes which underlie them would transcend our present limitations, but let us hope that the contemplation of the life work whose outlines have been feebly traced here may suggest to the survivors of our departed friend broader views of science and of life than those to which the routine of every vocation is in danger of tending.

BOOKS AND PAMPHLETS RECEIVED.

Primary Cancer of the Fallopian Tube. By Alban Doran. Reprint.

Papilloma of both Fallopian Tubes and Ovaries. By Alban Doran. Reprint.

Annual Reports of the President and Treasurer of Harvard College 1887-88.

The Eye of the Adult Imbecile. By Charles A. Oliver, M.D., Philadelphia, Pa. Reprint

The propriety of Surgical Interference in Perforating Typhoid Fever. By J Ewing Mears, M D Reprint

Report of the Commissioner of Education for the year 1886-87. Washington: Government Printing Office. 1888.

Osteotomy for Anterior Curves of the Leg. By De Forest Willard, M.D., lecturer on Orthopædic Surgery, University of Pennsylvania, etc., 1888.

Contributions to the Anatomy and Pathology of the Thymus Gland. By A Jacobi, M D., Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons, New York; President of the New York Academy of Medicine. Reprint.

Original Articles.

ON THE INCREASING PREVALENCE OF SCABIES,

WITH REMARKS UPON TREATMENT.[1]

BY JAMES C. WHITE, M.D.,
Professor of Dermatology in Harvard University.

The great increase in the prevalence of scabies in and about Boston during the last four or five years leads me to ask your brief attention to the subject. The disease has exhibited marked fluctuations in frequency of occurrence in this community since my student days. During that period of three years passed in the Tremont Medical School, and the lecture seasons of the University, 1853–1856, I do not remember to have seen a case; so that I might have entered practice after receiving the degree of doctor of medicine without being able to recognize the disease. In the immediate continuation of my study in Europe, where the disease was almost a normal condition of life among the lower classes, and where, in the vast standing armies, soldiers were treated for the affection by the regiment at a time, abundant opportunity offered to become familiar with it in all its possible manifestations. On my return I found that it did occur more frequently than it was recognized amongst us, although rarely. But with the breaking out of the war of the Rebellion, three years subsequently, it became after a time very prevalent among the soldiers, probably through the enlistment of recent immigrants and the favoring conditions of camp life, and later was established as a general epidemic in our armies over their vast field of operations. But so little were army and volunteer surgeons acquainted with the disease and its management that they regarded it as an unknown affection " defying nomenclature and classification." In replying in an editorial article to this opinion, thus expressed in various communications from the army at that time, I was taken to task for the statement that " I have examined a great many cases of 'army itch' in returned soldiers and their families, and do not hesitate to express the opinion that it is simply scabies, that it is always caused by the itch insect, and that it readily yields to proper external treatment." The soldiers brought it home with them on furlough and after discharge from service, and thus it became a wide-spread epidemic, affecting all classes of society.

At that time, 1864, I was led to make an extended communication on its recognition and treatment to this society.

Gradually, however, under our cleanly ways of family life, so unfavorable to its development and spread, the disease disappeared again almost wholly, from this portion of our country at least. It would revive to a noticeable extent at times when immigration became most active, getting a temporary lodgment in this or that factory town through newly arrived operatives, or in a city family through a recently imported nursery girl, or a school-fellow, but nowhere a persistent or endemic existence. The stock or material for clinical teaching was mainly dependent upon a renewed supply from European sources, and for several years was kept up principally by returned cattle-drovers. As will be seen by the following figures, there have been years recently when the class graduating from our medical school had little better clinical means of studying the disease than I had in my pupilage. I give the number of cases treated yearly in the out-patient department for skin diseases of the Massachusetts General Hospital since its establishment twenty years ago :—

In 1869	50 cases	In 1879	15 cases
1870	22 "	1880	9 "
1871	30 "	1881	9 "
1872	20 "	1882	25 "
1873	24 "	1883	department closed.
1874	17 "	1884	68 cases.
1875	8 "	1885	98 "
1876	35 "	1886	105 "
1877	2 "	1887	123 "
1878	11 "	1888	165 "

It must be observed that this last number, 165, by no means indicates the real number of cases which might be included in the returns, for in the majority of instances the patient applying for relief was only one of several members of a family who were also treated for the same affection. Generally it is only one child out of several which is brought for treatment, — the one most seriously affected. These patients reside only in part in Boston; they come also from towns within a radius of fifteen or twenty miles distant. They are not only the poor and dirty, but are in considerable proportion from the fairly well-to-do classes, and of cleanly habits.[2]

There has been also a proportionate increase in the number of cases occurring in my private practice. Whereas it has been previously rare to treat more than one or two patients with the disease a year, I have seen at my office in 1885 eleven cases, in 1886 fourteen cases, in 1887 eight cases, and in 1888 eighteen cases.

It is impossible to find a satisfactory explanation of this great increase in the prevalence of scabies in this vicinity. Immigration has not been especially large in the past few years, nor has there been any noticeable change in the ways of living, or more intimate intercourse between various classes of society, which might possibly account for it. In European countries it is the close relations of barrack life in the vast standing armies, the corresponding possibilities of bodily contact connected with apprentice life, and the general disregard for personal cleanliness, which afford such facilities for the spread and continuance of the disease, conditions which fortunately do not exist in the United States. It is not impossible that the crowding of great numbers of operatives of both sexes in the large working establishments of our cities, and the multiplication of commercial travellers, traversing all parts of our country, new features in our social life, may present more favoring chances for the development of the disease than formerly existed. The direct channels of communication from individual to individual most commonly recognized are between schoolmates, nurse and child, bed-fellows, artisans, operatives, shop-girls, and through family intercourse, and impure sexual contact.

Treatment. — I wish to add a few words about the choice and use of remedies. The old methods of cure employed in my student days in foreign hospitals may still be relied upon, but they have been superseded in most part by others more gentle in action and as effective. Helmerich's salve, more or less modified, was chiefly used in France. The original formula was: flowers of sulphur, two parts; subcarbonate of potash, one part; lard, eight parts. Prof. Hardy used lard, three hundred parts; sulphur, fifty parts; subcarbonate of potash, twenty-five parts. In his "quick cure" at the Saint Louis Hospital the patient was rubbed all over with soft soap for half an hour; he was then kept in a hot bath for half an hour; and during the third half-hour he was rubbed everywhere with this ointment. He was then dismissed. Bazin used Helmerich's salve unchanged, and two frictions instead of one. Relapses after these quick cures were frequent.

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[1] Read before the Boston Society for Medical Improvement, Jan. 28, 1889.

[2] Dr. Greenough in 1887 called attention to a similar increase in the frequency of the disease at the Skin Department of the Boston Dispensary

In Germany Wilkinson's ointment was for a long time used. As modified by Prof. Hebra its formula was: ℞. Sulph. venal., ol. fagi, āā ℥vi, sapon. viridis, adipis, āā libram, cretæ, ℥iv. M. An equal quantity of alcohol was sometimes substituted for the lard. They were employed as follows: The patient was put into a warm bath, where he remained for half an hour. Then a piece of coarse blanket was smeared with sapo viridis, and with it every portion of the skin was thoroughly rubbed. This was washed off in the bath, the skin was dried, and then rubbed with the ointment or tincture. This process was repeated on the following and each successive day until the itching ceased. Later Vlemingkx solution (made by boiling two parts of flowers of sulphur and one part of caustic lime in twenty parts of water until twelve parts remain, and then filtering) was wholly employed by Hebra. This was rubbed with a woollen cloth into the whole surface of the body for half an hour. The patient then was kept in a warm bath for an hour, subsequently sponged off with pure water, and dismissed. This is a very effective remedy, but if used incautiously it is sure to aggravate the eczematous inflammation which always accompanies the disease. Three or four days is, however, a much safer period to keep the patient under observation and treatment.

In 1864 Bärensprung demonstrated in the Berlin hospitals the value of Peruvian balsam as a parasiticide in this disease, and in the following year styrax was employed there for the same purpose. Their essential and active principles are identical, viz., cinnamin and cinnamic acid. The former contains them in larger proportion, but the latter is cheaper. In the Peruvian balsam the itch insect dies in twenty to thirty minutes, whereas in styrax it may live from two to five hours. The method then employed was to rub the balsam, or the styrax softened with olive oil, four parts of the former to one of the latter, over the whole surface at night. For greater certainty of effect this process was generally repeated after some days. The application of these substances to the skin produces no irritation.

Naphthol was introduced into the therapeutics of scabies by Kaposi in 1881. He employed the following formula: β-naphthol, fifteen parts; green soap, fifty parts, powdered chalk, ten parts; lard, one hundred parts. This preparation was rubbed into all affected parts twice in the period of twenty-four hours. He demonstrated the fact that the disease could be cured in this way with certainty and safety.

In sulphur, styrax or peruvian balsam, and naphthol we have three effective, sufficient parasiticides. The action of the other substances employed so generally in combination with them, as above mentioned, the alkalies, tars, gritty powders, etc., is simply auxiliary, and addressed to the solvent or mechanical removal of the epidermal coverings, or crusts, which protect the animals and eggs in the burrows and pits against the active agents, or for the relief or prevention of the inflammatory processes, which always accompany the disease, or may be provoked by the injudicious use of the remedies employed in its cure. It may be said that it is in a proper knowledge of these latter, most essential, points of treatment that the successful management of scabies chiefly consists. It should never be forgotten that every case of advanced scabies is mainly an eczema, developed, in extent of surface affected and intensity of lesions, by individual peculiarity of the cutaneous tissues under the influence of scratching, and that the changes in the skin due to the direct action of the parasite are always but a small practical part of the same. The mere destruction of the animal in all its phases may be, therefore, but a part only of treatment, although always the first and essential step. It is important therefore, firstly, that in the choice or combination of remedies we select those which shall destroy the animal with certainty and quickness, and yet shall not aggravate the existing inflammatory changes in the skin; and secondly, that we do not use them too long.

I generally employ in dispensary practice the following method, and may say in advance that it is applicable in every case, however extensive or severe may be the accompanying inflammatory processes. I prefer a mixture of the three active agents (a scattering shot), and combine them in this way. ℞. Sulph. flor. ʒii β-naphthol ʒi, balsam Peruv., vaseline, āā ℥i. M. This quantity is generally sufficient for the cure of a single case. The patient is directed to rub a third of this mixture into the whole surface of the body, from the neck downwards, at bedtime. He is especially told to rub it between the fingers and upon the penis, and that it must be applied to the back by some other person. He is to sleep in old garments, that the bedclothes may not be soiled. In the morning the skin is to be thoroughly washed with soap and water. The use of the bath in this class of patients is of course out of the question, nor is it essential. The ointment is to be used in this way for three consecutive nights. Generally the itching ceases almost wholly on the first application. The patient is also told not to use it after the third night, unless, after waiting two more nights, there should be a decided return of the pruritus here or there, in which case the salve is to be rubbed into such parts only, and only for two nights running. For very young children I omit the naphthol in prescribing the ointment, on account of its occasional irritating properties.

In cases where the accompanying eczema is severe, it is well to require an inspection of the patient again on the sixth or seventh day, when it will sometimes be found necessary to direct a course of treatment addressed to this residuary condition. A very frequent mistake on the part of the physician or patient at this stage is the conclusion that the appearances, or accompanying itching, are signs of the continued activity of the original affection, and the consequent renewal of the use of the stimulating parasiticide, which only aggravates the existing process. I have often seen cases of post-scabietic eczema in dispensary and private practice, which have been kept going for months by such errors of judgment. It must also be remembered that in prolonged cases of itch the cutaneous nerves have acquired, as it were, the habit of demanding to be scratched, and seem to require it for a long time after every visible sign of the disease has disappeared, and these cases of surviving pruritus are often mistaken for remaining evidence of the original affection, and mistreated accordingly.

Directions are always given that on the first night of the treatment all the clothes which have been worn next to the skin, — shirts, drawers, and socks, and the sheets and pillowcases last slept in, — shall be thoroughly boiled before being used again. Gloves should be baked or destroyed. It is to be assumed that every bed-fellow has the disease also, and requires treatment as much as the patient. Every member of the family should also be inspected and treated in the same way, however slight in character or extent may be the indications of the affection. I have seen the disease keep up a continued and alternating existence in a large family for a year, during which period nearly all its members underwent treatment one or more times, simply because they were not treated simultaneously. I have recently directed five members of a private family to be thus generally treated, although only two of the household at that time presented any positive indications of the presence of the disease.

As to the more general control of the affection in its well-nigh epidemic state of prevalence, it is only by drawing the attention of the profession to this activity, and to the best methods of destroying it in individual instances, that we may hope to accomplish anything, and it is for this purpose that I offer this brief contribution to your notice.

A CASE OF ACUTE FATAL NEURITIS OF INFECTIOUS ORIGIN;

WITH POST-MORTEM EXAMINATION.

BY JAMES J. PUTNAM, M.D., OF BOSTON.

The following case is one of generalized neuritis, of inflammatory and disseminated character, involving the nerves to a greater or less extent from their roots to their terminations, and associated with changes in the muscles on the one hand, and with alterations in the central axis on the other, which may have had a slight share in producing the symptoms.

Death occurred from asphyxia on the seventh day; and at the autopsy, besides the signs of neuritis, the lungs were found crowded with small nodular hæmorrhages, and the spleen enlarged.

The patient was under the care of Dr. M. A. Morris, of Charlestown, who kindly asked me to see him in consultation. This I did once only, and that at the beginning of his illness.

The notes which Dr. Morris has kindly placed at my disposal, supplemented by my own, cover most of the essential points. I did not have conveniences for making an electrical examination, and was partly deterred by the agitated, restless state of the patient from investigating certain symptoms as thoroughly as I ought to have done.

At that time, however, while the diagnosis seemed clear, the fatal issue of the case was not anticipated.

The patient was a man twenty-eight years of age, in good health in all respects, and free from constitutional disease of every kind. He was of a highly nervous temperament, and his father and mother are reported as having been also of nervous temperament, but otherwise well. The patient himself had been formerly laid up with what was called nervous prostration, but at the time of his illness was in his usual health. He did not use liquor to excess.

On Friday evening, November 28th, 1886, he rode from Boston to his home in Charlestown on the front platform of a horse-car, in a heavy rain storm, and got thoroughly drenched. Before morning he awoke with pain in the left shoulder and across the back.

On the following day he complained of a feeling of stiffness in his muscles all over the body; his gait was weak and unsteady, and he felt a general sense of feebleness in all his movements.

The next day he was only with difficulty able to stand or walk. In the evening of this day (the third of his illness) he was first seen by Dr. Morris, who found him complaining of pain, not only in the left shoulder, but also in the anterior muscular mass of both thighs, and of numbness in the toes of both feet. He had also noticed that he had had no early-morning erection of the penis since his illness began, which had previously been habitual.

I will here remark that the patient had been excessive in sexual intercourse during his married life of several years' duration, but not so for the period shortly preceding his illness.

There was no pain in the back, nor girdle sensation, nor any weakness of the sphincters; the pupils were normal; his gait was very unsteady, the legs tending to cross one over the other, so that he nearly fell to the floor; the heart was beating regularly; temperature and respiration were normal; heart sounds normal. Dr. Morris ordered five grs. of sodium salicylate every two hours, for the relief of the pain.

The next morning he found the patient perspiring freely, and without pain, except in the hip-joint when he rolled over in bed. He was unable to walk, falling forward on the floor when he attempted to do so. The numbness of the feet had increased, but there was no noticeable loss of sensation to ordinary tests; there was pain on pressure over both sciatic nerves and also on deep pressure over both post-tibials. The pulse was 80, temperature normal, respiration 20.

On the 29th (the fourth day of his illness) the symptoms had still further increased, but were of the same character as before. The pulse was 80, temperature 99° F., respiration 20. The patient was feeling anxious and restless.

On the following day the pulse and temperature were still nearly normal. The patient found it difficult to raise his legs from the bed, but could with some effort draw them up and push them down.

On December 1st (the sixth day of his illness) the pulse was 84, temperature 99.3° F. The patient had been unable to draw the legs up since the previous night; he could not raise his left hand to his head, but could raise the right with moderate effort; the grasp of the left hand was much weaker than that of the right; he could flex both arms; the calves of both legs were tender to deep pressure; there was some strangling on attempting to drink, and slight cough with expectoration of frothy mucus; the patient was talkative and restless.

On December 2d the pulse was 86, temperature 99.2° F. The patient had been delirious the night before and had not slept; he coughed and raised a great deal of frothy mucus; coarse moist râles were heard over both upper fronts; there was complete paralysis of both legs; pain on pressure over both facial nerves; the conjunctivæ were congested; he had a good deal of difficulty in swallowing fluids, but took, on the whole, a good deal of nourishment.

During the afternoon of this day (the seventh of his illness) the paralysis of the upper extremities increased notably; the cough and expectoration and the injection of the conjunctivæ also increased; swallowing became very difficult.

At about seven in the evening, while propped up in bed and taking some nourishment, he suddenly began to cough and strangle, and became insensible. His wife, who was feeding him, thought that a small bit of soft bread soaked in chocolate which he was trying to swallow might have entered his trachea. On Dr. Morris's arrival, forty-five minutes later, the pulse was found to be 120, quite strong and regular; respiration barely perceptible, slow and regular; tongue swollen and discolored. There was no evidence that any foreign body had entered the trachea. He died half an hour later, to all appearance from paralysis of the respiratory functions.

I saw the patient on the fourth day of his illness, and obtained essentially the same history as has been given.

The sequence of symptoms was reported to be as follows: —

On the night following the exposure, he had pains in thighs on motion, pain in the left shoulder and back, numbness of the toes of both feet.

The next day he found it difficult to raise the left arm at the shoulder, and had weakness in walking. The day following he began to have numbness in the fingers. At the time I saw him all motions were possible, but most of them very feeble. He could still raise the foot about six inches from the bed with the leg extended, but only by the aid of a sudden impulse. The movements of extension at the knee were fairly good. The muscles of the legs were flabby and the patient was unable to stand alone, but from weakness rather than loss of co-ordinating power, and closure of the eyes did not increase the difficulty. Deep pressure in the regions indicated was painful, but there was certainly no marked loss of sensibility to touch or pricking, though only rough tests were used, the patient's restless condition not inviting to more critical investigation.

In view of the paræsthesia, local tenderness, steady increase and wide-spread bilateral distribution of the muscular symptoms, and yet the absence of complete paralysis, the diagnosis of multiple neuritis seemed to be justified, but there was no indication at the time of my visit of paralysis of the heart or lungs.

The autopsy was made on the day after death, December 3rd, by Dr. R. H. Fitz, who has kindly given me the following notes: —

"Right side of heart distended with liquid blood; both lungs injected and moderately œdematous; punctate ecchymoses throughout the lungs in every part; spleen enlarged to nearly three times the normal size, soft, injected; liver and kidneys deeply injected; nothing abnormal in the appearance of the brain or spinal cord.

"Pathological diagnosis: nodular, pulmonary hæmorrhages; acute splenic hyperplasia."

A portion of the anterior crural, the iliolumbar, and vagus nerves, and part of the left axillary plexus, a portion of the diaphragm with filaments of the phrenic, part of the deltoid muscle, and a piece of one lung, were removed for subsequent examination.

It is to be regretted that these nerves and others were not removed in their whole length, especially in view of the fact that in the closely similar case reported by Rosenheim, which came to my notice within a few days after this examination, localized hæmorrhages were here and there found in the course of the nerves.

The appearances, however, in such portions as were removed, leave no doubt as to the general character of the process.

The nerves were examined both fresh, in osmic acid, and after hardening in Müller's fluid. The same pathological appearances, though varying greatly in degree, were found in all; but the best specimens were obtained from the axillary plexus and the anterior crural, and the description will therefore be based mainly upon these, so far as the examination of the hardened specimens is concerned.

The vagus nerve was not examined after hardening. In the fresh state the most marked appearance was a strikingly beaded arrangement of the myeline, due to an accentuation of the markings of Schmidt. I should hesitate to regard this as certainly pathological, were it not that it occurred in connection with further changes.

The myeline was eaten out near the annular constrictions of Ranvier, but this may have been a purely passive, post-mortem change (v. below). Here and there the myeline was swelled and had wholly lost its characteristic markings, and in spots there was an infiltration of cells such as will be described further on.

Of the phrenic, only a few terminal filaments could be examined, and these looked perfectly healthy. Had a more extensive examination been practicable, changes would doubtless have been found, because a certain proportion of the muscular fibres of the diaphragm had wholly lost their transverse striation, and looked lustreless and granular.

The osmic acid appearances in the other nerves were of the usual kind, but the larger number of the fibres examined looked fairly healthy.

Sections of the anterior crural nerve, obtained after hardening and stained with carmine, showed under a low power a streaked or mottled appearance, as if a number of nerve-tubes here and there had been blotted out and a new-formed substance, taking the carmine stain, had taken their place. When the sections were examined with higher powers, the outlines of nerve fibres were seen more or less altered in the affected parts; yet, nevertheless, the spots seemed of a uniform red color.

The axis-cylinders in many of the nerve bundles were to all appearance normal, or nearly so, except in the spots above described; but in some bundles, on the other hand, the same series of striking changes had taken place, which will be described more at length in connection with the axillary plexus.

Here and there were foci of cell formation or infiltration, but on the whole the changes were less marked than in the left axillary plexus.

The lesions met with in the axillary plexus were of the following character: —

1. Infiltration of small round cells with granular contents, together with an admixture of cells of other kinds, especially a number having a nucleus of about the size of a leucocyte, and granular contents, but with a distinct body of a pale, homogeneous protoplasm, giving to the whole cell a spherical or oblong shape.

These were by far the most numerous toward the periphery of the nerve bundles, and especially between the sheath and the fibre, and next, around the blood-vessels, where they often formed a well-marked ring, spreading thence outward among the nerve fibres. They were also met with, however, remote from either sheath or vessels, following the course of the nerve fibres themselves; so much so, that I have some preparations of isolated fibres surrounded, at a part of their course, by quite a mass of these cells. Sometimes they were collected into columns which lay between and parallel to the nerve fibres.

I was not able to make out that any of these cells lay actually inside the nerve-sheath, except possibly in one or two instances; nor did the nuclei of the nerve fibres appear to be increased in number. Some of the cells were evidently in process of multiplication, the nucleus being divided by a sharp line into two parts. Of these I saw perhaps three or four well-marked instances.

The degree of this cell infiltration varied greatly in different sections from the same nerve.

Besides the cells described, there were numerous spindle-shaped cells belonging to the connective tissue, whether increased in number or not I am not prepared to say, and also here and there larger granular masses which may have been protoplasmic with particles of myeline, or may have been simply altered masses of myeline.

There were also large and highly granular cells, with a large nucleus and irregular, oftentimes flattened, border, which I took to be endothelial cells, normal or more or less altered.

I searched for so-called "Mast-zellen" with various aniline colors, as indicated by Rosenheim, but succeeded in finding only one or two that seemed to be characteristic.

2. The next most striking change affected the axis-cylinders, which were in some places greatly enlarged, in others more or less atrophied, in others, again, entirely destroyed.

The distribution of these changes was largely by nerve bundles; that is, one bundle might show nearly normal axis-cylinders, while in the next bundle they were greatly altered. In some sections there were whole (secondary) nerve bundles, in which scarcely a single axis-cylinder was to be seen; in others all the different changes were represented, showing that the swelling, atrophy, and disappearance were parts of the same process of destruction.

The changes were also much greater in some strands of the axillary plexus than in others.

Some of these swelled axis-cylinders occupied the entire thickness of the nerve-tube, and even the nerve-tube itself seemed sometimes to be distended. In other cases, the sections of the swelled axis-cylinders appeared not round, but crescentic, occupying half or two-thirds of a nerve tube.

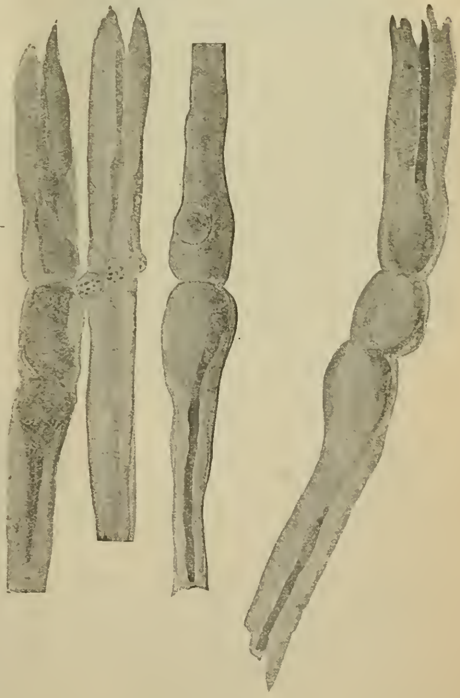

PLATE I. — Nerve fibres with alterations in the axis-cylinders near the constrictions of Ranvier. Hartnack Immersion, one-tenth.

In order to study more closely the position and character of these changes in the axis-cylinder, I made a series of longitudinal sections, and also of isolated nerve-fibre preparations. Through these it became evident that the swelling occurred here and there in the course of the fibre, and that its most common position was at or near the "annular constrictions" of Ranvier (or "connecting disk" of Schiefferdecker).

In some cases it was obvious what had taken place. The axis-cylinder had become swelled into a bulbous enlargement, and this had finally burst on one side, leaving half of the shell to give rise to the crescentic sections.[1] In other cases the appearance suggested more or less liquefaction of the altered axis-cylinder (perhaps the myeline as well); for the disk at the annular constriction and the adjoining walls of the nerve-tube seemed to be, as it were, plastered with a substance coloring strongly with carmine, and evidently formed of the products of degeneration. It is interesting to observe that, as a rule at any rate, the disk had not been broken through, but remained clear and distinct, although, as is shown by the experiments of Boll, Hesse, and Schiefferdecker,[2] on the action of water and other substances upon the fresh nerve, the osmotic or capillary current setting through the nerve fibre is quite competent to break down the connecting disk.

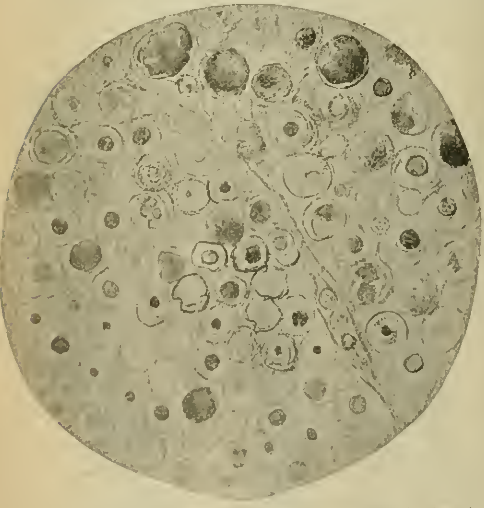
Plate II.—Section from axillary plexus illustrating the alteration and destruction of axis-cylinders.

It is worthy of note that these changes of the axis-cylinder, though almost always near the connecting disk, are not always most marked exactly at that point, but often at a little distance back.

The question arises, Were these changes which have just been described wholly or in part postmortem in character? In one sense I think this question can be confidently answered in the affirmative. That is to say, it is highly probable that the swelling, etc., occurred after the death of the particular nerve fibre; but, on the other hand, it is equally probable that they did not occur in the process of the hardening of the preparation. My reason for that conclusion is, although the same kind of change—that is, swelling and vacuolization—is said sometimes to take place to a certain degree during the hardening of healthy nerves in solutions of chromic salts, yet I have never seen nor read of any change approaching to this in degree, from that cause.

On the other hand, Schiefferdecker describes, as the result of the treatment of fresh nerves with water and dilute acids, a localized swelling of the axis-cylinder, and eventually bursting of the relatively fluid contents through its envelope, which seems to be quite analogous to that which has here taken place.

It is probable that the swelling observed in such cases as this is of similar origin with that seen in acute inflammation and acute anæmia of the spinal cord.

The character and position of the myeline sheath were also of interest.

In some of the cross-sections, stained with picrocarmine, the nerve tubes could be seen to be still filled with the remains of myeline, even though no axis-cylinders were visible. At times the myeline seemed to have been changed, so that it took up the coloring matter of the carmine to some extent, and it was doubtless in part to this change that the mottled appearance of the cross-sections was due.

Here and there a tube would be entirely empty of myeline for a considerable distance, both in those cases where the axis-cylinders were preserved and in those where they had been destroyed. This may have been partly due to mechanical violence, or to changes during hardening, but it seems hardly possible that it should be entirely accounted for in this way.

The myeline at the annular constriction was, in the bichromate of potash preparations, almost always absent for a certain distance; and this also was partly coincident with the alteration in the axis-cylinder at that point, and partly independent of the latter change, occurring in some places where the axis-cylinder ran through the constrictions, as it sometimes did, uninterruptedly and with clear and parallel outlines. So marked was the displacement of myeline at these points that some of the longitudinal sections seemed to be dotted over, under a low power, with vacuole-like spaces.

It will be remembered that Neumann, in his classical paper upon nerve degeneration, points out that the neighborhood of the annular constriction was one of the places where the degenerative changes in the myeline were earliest observed.

Dr. Webber, of Boston, has noted the same fact in some unpublished experiments of his own.

To a certain extent the changes in the myeline at the annular constrictions are probably of postmortem origin.

It is well known that Ranvier long ago pointed out that when nerves were exposed to the action of water and other fluids for an hour or so after death, the myeline on either side of the connecting disk would be found rarefied and apparently eaten away, and that he considered this change to be an evidence of the fact that nutritive fluids probably enter the nerve at these points.

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[1] Valuable remarks relative to the significance of this acute swelling of the axis-cylinder may be found in the Arch. f. Psychiatrie, etc., 1887, p. 283 (Anhang), Zur activen Verand. der Axencyl., bei Entzundungen, Dr. M. Friedmann; and Bd. xcvi der Sitzb. der Kais. Akad. der Wissensch., iii. Abth Nov. Heft. 1887. Ueb die Verand. am Ruckenmark n. Zeitweiser Verschliessung der Bauchaorta J. Singer (Reprint, p. 12.

[2] Arch. f. Microsc. Anat., 1887, Bd **xxx**. 485.

Schiefferdecker, in the interesting paper above alluded to, while expressing his agreement with Ranvier as to the fact that coloring matters, and probably nutritive fluids, find their way into the axis-cylinders at these points, does not admit that the myeline is dissolved out by these fluids as Ranvier suggested, but considers that it is displaced by the slight mechanical violence in removing the nerve from the body, or of putting it slightly on the stretch, as Ranvier was in the habit of doing as a preliminary to the immersion in osmic acid.

The reason that the displacement of the myeline took place at these particular points is believed by Schiefferdecker to be because the delicate membranous sheath of the nerve, which follows the outline of the fibre and dips down into the narrow portion at the annular constrictions, exerts a lateral pressure where the angle occurs, when it is put upon the stretch.

In other words, the stretched membranous sheath tends to assume the form of a cylinder, the end of which is as large as the connecting disk, but not larger. Consequently, that part of the myeline which occupied the neighborhood of the tapering end of the cylinder is compressed and displaced.

This explanation entirely concurred with the results of some experiments which I had been making, and which will be given elsewhere in detail.

In order to test the point further, I made a number of careful observations upon the nerves of a frog, stretching some of them with a weight of three grammes, and leaving others unstretched.

The results of the experiments were such as to entirely confirm the view taken by Schiefferdecker.

The unstretched nerves, if removed with care, did not show these changes in the relation of the myeline to the connecting disks, either after one hour's immersion in water or other fluids, or on exposure to the fluids of the body after death for twenty-four hours; whereas the nerves stretched with a weight of three grammes showed the changes very clearly, as Ranvier described them.

Occasionally, even in the unstretched nerve, a fibre is seen in which these changes are observed, but not with sufficient frequence, I think, to invalidate the explanation offered. I believe that there is also reason to think that the putrefactive changes which go on during the twenty-four hours or so after death may make this change occur more rapidly, but this point is still under investigation.

The nerves in the present case were not exposed to any special stretching other than was necessary in their removal, and it is therefore probable that the results were partly the effect of pathological change, and only in part of mechanical violence.

I have, however, seen a similar change, though not nearly to the same extent, in a healthy nerve removed from the body at an autopsy and treated with the same reagents that were used in this case.

One other point should be mentioned in this connection, namely, that the membranous sheath in the neighborhood of the connecting disk, as seen in the hardened specimens, looked as if it had been exposed to pressure from within, making it bulge slightly outward. I have no explanation to offer of the exact manner in which this effect was brought about; but this influence, whatever it may have been (possibly the result of decomposition), may have had its share in the displacement and destruction of the myeline as well.

(To be concluded.)

SOME USES OF THE VAGINAL TAMPON.[1]

BY F. H. DAVENPORT, M.D.

The word tampon, which is of French origin, means something which is used to plug a cavity. Medically its use has been almost wholly restricted to the filling up of a natural cavity or a wound with some substance, for the purpose of arresting hæmorrhage.

Of late years, however, especially in gynecological practice, its use has been extended, so that it now serves many purposes. In discussing it in this paper, I shall not confine myself to the strict definition, but shall include under the term tampon not only the complete plugging the vagina, but also the various modified forms which have suggested themselves as useful.

These include single dressings of cotton, wool, or other similar substance, medicated or not as the case may be, several dressings packed tightly or loosely, and either partially or completely filling the lumen of the vagina, and used for a great many allied or diverse conditions.

As we have said, the first and the most obvious object to be attained by a tamponade of the vagina is the controlling of hæmorrhage. The indications for, and the methods of, doing this are so well known that it is not my purpose to refer to them here. The second most familiar use is to modify the position of the uterus. Briefly the principles for doing this may be thus stated. In the first place, from the nature of the treatment, its application must be temporary. Sometimes the object sought is to steady a too movable uterus; sometimes to alter the position of that organ when out of its normal place, but still movable; and sometimes to overcome adhesions, and gradually restore a displaced uterus to its normal position.

When the object has been attained this treatment is either entirely suspended, or some permanent device, as a pessary, takes the place of the temporary tampon.

For the first two uses, the tampon is small, occupying only the upper portion of the vagina, and keeps its place in virtue of the elasticity of the vaginal walls. From this it follows that very little force can be exerted, the tampon or dressings merely steadying, or at most slightly lifting, the uterus.

To accomplish the third result, viz., restoring an adherent womb to its normal position, a firm, solid column is used, which fills the whole vagina as far as the outlet, and exerts, especially in connection with the respiratory movement of the uterus, and moderate exercise, a steady and effective upward pressure. The exact effect of the tampon on the adhesions is not known. In all probability they are put somewhat on the stretch; and their nutrition being to a certain extent interfered with, they atrophy and become thin, and finally give way. To a certain extent also the process may be one of absorption as a result of changes in the circulation. That adhesions are overcome in this way an ample clinical experience proves, and I think I am correct in saying that nowhere has this method been more systematically cultivated and successfully carried out than here in Boston.

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[1] Read before the Boston Society for Medical Improvement, Jan. 28, 1889.

Dr. H. C. Coe,[2] of New York, has attempted to prove by experiments on the cadaver that it is impossible to bring any such effective pressure to bear upon the uterus from the vagina as to put the adhesions on the stretch, much less to cause their rupture.

He says that the only effect produced by a tight tampon of the vagina is to raise the organ to a higher level, and that no tilting forward of the fundus occurs. The inference which he would have us draw is that the numerous cases of supposed retroverted and flexed uteri with adhesions, which under this treatment alone have been brought up to a normal position, facts which there is no disputing, have been in reality non-adherent. This, however, does not to my mind afford any proof of the position which he claims. If the sole effect of a tampon is to raise the uterus higher, in the case of a retroflexed uterus, especially if the fundus is caught behind the promontory of the sacrum, the packing would only aggravate the flexion. It would be impossible by lifting the uterus up as a whole to tilt the fundus forward. If on the other hand the tampon can be applied high enough on the posterior uterine wall to make pressure above the point of flexion, the fundus must go forward, and if there is a possibility of carrying the fundus forward, that very act must, in case there are adhesions, put them, if ever so slightly, on the stretch. In other words, if the retroflexed non-adherent uterus can be replaced by the tampon alone, in the case of a retroflexed uterus with adhesions they must be put on the stretch.

It is a matter of every-day experience that it is possible to reduce a retroflexed uterus by the tampon. That Dr. Coe should have come to the conclusion which he states in his paper is not strange when we consider that in the case of the cadaver two elements which I deem of the greatest importance are wanting. The first of these is the elasticity of the muscular structure of the vagina, the second the natural movements of the uterus and of the body in general. Let us suppose a case of retroversion or flexion bound down by adhesions which it is proposed to treat by systematic tamponing of the vagina. The posterior cul-de-sac is first filled up to a level with the external os, then the anterior, and then the vagina to just within the vaginal orifice. We have now a column of elastic cotton, with a wedge-shaped end in the posterior cul-de-sac, which acts in this way. In the first place the packing has put the vagina upon the stretch lengthwise, raised the uterus, and the wedge-shaped top tends to push more and more behind the uterus. The perineal body acts as a strong muscular barrier below, holds the lower end firmly in place, and prevents its sagging, while the tonicity of the vaginal walls keeps it from expanding laterally. The second element which I spoke of above comes into play now. With every inspiration the diaphragm descends, pushes the contents of the abdomen before it, and at the same time the uterus, which rises again during expiration. These respiratory movements of the uterus can be readily seen when the patient is being examined with Sim's speculum. Add to this the fact that the uterus is more or less influenced by the various movements of the body, in bending, stooping, or walking, and that especially in the latter exercise the muscles which compose the perineal body are acting to close the vagina and thus offer a firm, resistant base, which meets the pressure from above, and we have a series of factors which it seems to me demonstrate very clearly the rationâle of this method of treatment. The wedge-like action of the firm tampon held in place by the vaginal walls and the perineum, and the constant motion of the uterus, result in a gradual raising up and tilting forward of the organ. Adhesions are put upon the stretch and finally give way.

I do not mean to assert that every case of adherent uterus will yield to this treatment. There are of course exceptions. In the case of a small retroverted uterus, with a shallow posterior cul-de-sac, the packing merely results in a pushing up of the organ as a whole, without any relative change of position. There can be no wedge-like action of the upper end of the tampon. If the uterus is large, and the fundus caught behind the promontory of the sacrum, it is necessary to draw the uterus down with a tenaculum hooked into the anterior lip, and thus free the fundus before the tampon can exert any force. Sometimes it may be necessary to bring the genu-pectoral position to our aid to accomplish this end.

Lateral adhesions are difficult to treat in this way. If the uterus is drawn sideways and somewhat backward, in what is called a position of retro-lateral version, tamponing the vagina may accomplish something towards rectifying the malposition. In these cases, however, the fundus does not come directly forward, but describes a semicircle towards the side where the adhesions are. Before treatment the probe will pass backwards, and somewhat to the side, later directly towards the side, and in exceptionally favorable cases even a little anteriorly.

The most common substance used for the tampon is cotton in some form. This may be made the vehicle of something which will in itself have a curative value. Thus various dry powders, such as bismuth, iodoform, or boracic acid, may be applied to the mucous membrane by means of the cotton. The most important medicinal agent with which the cotton is treated is glycerine. Applied to a mucous membrane it has the property, from its affinity for water, of causing a more or less profuse serous discharge, which has the effect of relieving the congestion, and blanching the mucous surface. This property may be turned to account in various affections of the genital tract.

For example, it occasionally occurs that women have attacks of frequent and painful micturition. These are apt to either accompany or follow the menstruation, or are the result of over-fatigue, such as prolonged standing on the feet, or a long journey. In such cases there is either a persistent condition of anteversion, which when the organ is congested becomes more pronounced, or the normal uterus sinks lower, and in either case presses upon the bladder and causes the above symptoms.

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[2] American Journal of Obstetrics, 1886.

Placing one or two rolled-up cotton dressings treated with glycerine in the anterior cul-de-sac will in a majority of instances relieve the symptoms. The result is probably due more to the relief to the hypercongestion than to any lifting up of the organ, though this may be a secondary effect.

This action of glycerine on mucous membranes may be turned to good account in all uterine affections which are accompanied by congestion. Some of these are, in the first stages of subinvolution, where we have a heavy, succulent enlarged body, in chronic endometritis, and endocervicitis, and in beginning displacements. So, too, the congested condition of the appendages and connective tissue about the uterus may be modified by this agent. I have even found it of value in cases of fibroids, especially when they have grown rapidly, and the womb is too sensitive to bear the pressure of a pessary. Under systematic packing with glycerine cotton I have seen the general sensitiveness all over the abdomen diminish, the sense of weight in the pelvis decrease, and a marked lessening in the amount of the flow at the menstrual period. Carrying out this last idea, I have employed this method of treatment in a few cases of menorrhagia, where no cause in or outside of the uterus could be detected. The relief of the congestion during the intermenstrual period has had a good effect on the menstrual flow.

Besides glycerine, dry powders of various kinds may be applied by means of the cotton tampon. This constitutes the so-called dry treatment which Engelmann has described. Their action is of course limited to the mucous surface of the vagina and cervix, and is of especial value in the treatment of erosions of the cervix and catarrhal conditions of the vagina. Iodoform, boracic acid, alum, bismuth, and many other powders may be used in this way.

Another use of the tampon is to favor the absorption of old chronic exudations. Its use is therefore indicated in chronic parametritis, and its beneficial results are obtained in two ways. In the first place one of the most troublesome symptoms is the pain which follows any sudden movement or jar of the body. It is for this reason that walking or riding or even sitting is so uncomfortable, and many a patient is on this account hindered from taking exercise which would be of advantage to her. The tampon serves the important end of steadying the uterus and the ovaries so that jars are not felt, and riding or walking can be moderately indulged in; or in the case of poor women dependent upon their daily work for their support, such work may be resumed at a much earlier date.

In the second place the constant gentle pressure of the tampon relieves the venous engorgement, helps the circulation, and so favors the absorption of the inflammatory products.

At first thought pain and sensitiveness under these conditions would be considered a contraindication to this method of treatment. Practically, however, this is not the case. The one essential precaution to be observed is the presence of active inflammation. As long as any elevation of temperature shows that the acute process is still going on, the tampon cannot be thought of. But the pain and sensitiveness persist long after the acute stage has disappeared, in fact they are the prominent symptoms which call for relief. Careful packing, light at first, and gradually increasing in firmness with successive applications, will often afford the most marked relief. The use of iodoform on the upper part of the tampon aids in allaying pain.

There are certain exceptional uses to which the tampon may be put, which, for the sake of completing the subject, should be alluded to. One of the most valuable is the use of a tampon of iodoform gauze in the treatment of inoperable cancer of the uterus. Where the disease has gone beyond the point where radical measures can be thought of, and there is nothing left but to make the patient comfortable, a good deal can be done in that way by this method. If the sloughing cavity be packed with 50% iodoform gauze every third or fourth day, it will absorb the foul discharges, remove the offensive odor, control hæmorrhage, and in some cases relieve the pain.

In many of the affections of the uterus which I have referred to in this paper as generally benefited by this method of treatment, abstinence from coitus is a very important adjunct. The difficulty of securing this is very great, and this fact alone will, in a certain proportion of cases, if not absolutely prevent a cure, at least retard and complicate it. It is therefore legitimate to consider, among the valuable purposes which the vaginal tampon subserves, the fact that it renders coitus impossible and secures for the genital organs that physiological rest which is often so essential. For this purpose the complete tampon of the vagina is necessary, which must be removed and replaced by the physician every third or fourth day.

It would be an easy matter to give cases from my own practice illustrative of each of these various uses to which the vaginal tampon in its several forms may be applied. That would, however, unnecessarily prolong the paper. It will have accomplished its purpose if it has pointed out how the scope of this simple method of treatment may be profitably widened.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

January 24, 1889. Dr. W. L. Richardson, President, in the chair.

DETACHED UTERINE FIBROID.

Dr. John Homans reported a case of fibroid tumor which had become completely separated from the uterus, and had caused death by intestinal obstruction after delivery, two severe attacks having occurred during pregnancy.

Dr. Homans said this was one of the most remarkable specimens he had ever seen. It was a uterine fibroid tumor. As a *tumor* it was not remarkable, but it was entirely separate from the uterus. Whatever connection it may have had with the uterus, either by contractions of the uterus or in some other way, it had become entirely separated from the uterus. There were attached to it adhesions, connections rather with the intestines.

The tumor was entirely nourished from the omentum. The adhesions to the intestine formed foramina between the tumor and the intestine, through which loops of the intestine projected, and the constriction of the intestine brought about in this way was the cause of the patient's death.

The following is the history: On June 11, 1888, a lady twenty-eight years old, who had been married the previous January, was brought to me by Dr. F. W. Chapin, of Springfield. On examination I found two abdominal tumors, as I thought, but whether completely separated or not I was unable to say. One was situated in the right iliac fossa, and was elastic: the other filled the left half of the pelvis, the hollow of the sacrum and much of the vagina, was hard and apparently lobulated. The os was high up under the pubes, and was but slightly movable; it seemed to be compressed, and the fundus could not be made out. The catamenia had ceased April 2nd. The mammary areolas were darker than in a virgin, and the little glands more pronounced. There had been some nausea at times since April. No fœtal heart sounds or placental soufflé could be heard by me. The fibroid tumor extended to the navel. My diagnosis was that there were two tumors, namely, a pregnant uterus, and a uterine fibroid. On July 6 I was called to Springfield, and met Dr. Breck, Sen., Dr. McLean, and Dr. Beach, of Hartford, Dr. Chapin having gone to Europe. The patient had been attacked with severe abdominal pain, vomiting, and constipation on June 30, and this had continued, only relieved by subcutaneous injections of morphia in large doses. There were no signs of miscarriage, although this event would have seemed likely. The tumors were tender and hard, and contracted at times when the abdominal pain was severe. There was intestinal obstruction, no movement of the bowels having taken place for a week, and no cathartic had acted. I remained all night and studied the case with a view to performing laparotomy if it seemed to be my duty. In the morning the patient seemed more comfortable, and in about three weeks was about the house, the bowels having been moved by calomel. She went on comfortably till October, when, being much larger with well-pronounced pregnancy, the same set of symptoms were reported that we had seen in July, and the vomiting was stercoraceous. This attack, however, subsided as the previous one had done; and she was delivered of a healthy daughter by Dr. Chapin, on the 9th of January, two hundred and eighty-three days from the cessation of menstruation. The labor was normal, and as the uterus became smaller it was evident that the hard fibroid tumor was entirely separate from it. After the confinement the same set of symptoms that had occurred twice before came on, and gradually increased in severity, with a pulse of 140 and rapid emaciation. The vomiting could only be controlled by morphia, and neither injections nor cathartics would move the bowels. I saw her on the 16th and 17th of January, and it seemed to me that an operation in her feeble condition would be fatal. In this opinion Dr. Chapin and Dr. Breck (whose sudden and lamented death from apoplexy occurred the next day) agreed. There was also the possibility that resolution might take place as it had before. It seemed to me that the intestines were adherent to the tumor, and were bent at an angle by their attachments to it, and perhaps obstructed by bands of adhesions. Death took place on the 24th. At the autopsy with Dr. Chapin, several loops of the small intestines were found greatly distended, and hiding from view the parts beneath, being as large round as my arm. This enlargement began about three feet below the stomach, and continued to the bunch of intestines glued to the tumor, about two feet or so above the ileo-cæcal valve. The large intestine was not particularly distended. Beneath the intestines was the tumor lying on the lumbar vertebræ, with its long axis extended transversely across the abdomen. The tumor was of a blue color externally, and was covered with peritoneum. It was somewhat dumb-bell shaped, and was about seven and a half by four inches in length and thickness. Old dense adhesions connected it with the lateral parietes in the left lumbar region, and it was enveloped by and adherent to the omentum, which was contracted and wholly adherent to it, *i.e.*, the free surface of the omentum had come to a focus at the tumor, making the omentum somewhat fan-shaped, with the apex at the tumor. Beneath the dense band on the left side, the descending colon ran without obstruction. There were also adhesions and bands connecting the right extremity of the tumor with the mesentery near the extremity of the right fallopian tube and right lumbar region, and one of these bands constricted the distended intestine somewhat. Portions of the ileum were adherent to the tumor on its under side, and had formed foramina through which loops had fallen here and there, and had become obstructed though not completely strangulated. The case was one where a fibroid tumor weighing two and a half pounds had gradually become separated from the uterus, and was nourished by its adhesions, which had caused successive attacks of obstruction in connection with pregnancy, and had finally caused death after confinement and the birth of the child. This is another argument against women with fibroids marrying, and also an argument in favor of the removal of subperitoneal fibroids by laparotomy.

Dr. R. H. Fitz said, with reference to the specimen exhibited by Dr. Homans: The specimen will not show very well at present the point of obstruction, but what is to be seen here is the portion of tumor with the intestines adherent. At the time I received the specimen the tumor was wholly removed from the uterus, and there were two points at which the intestines were adherent to the surface of the tumor, the tumors being wrapped in part by the omentum and adherent to it. One of the adhesions has since broken through, so that at present there only remains the tougher of the two adhesions, and that represents a strong, fibrous cord around which the intestines were coiled. The presumption is that either by a loop becoming strangulated under that cord, or a portion of intestine being twisted about it, the obstruction occurred. Since the removal of the specimen the intestine, which I understand was larger around than now, has collapsed very considerably.

Dr. John Homans also reported a case of

NEPHRECTOMY FOR THE REMOVAL OF A SARCOMATOUS KIDNEY WEIGHING FIFTY-THREE OUNCES,

and said: On January 9, 1889, Dr. J. S. Farlow brought to me for advice a married woman, fifty years old, with an elastic fluctuating tumor in the right side of the abdomen, extending to the umbilical and pubic region. Dr. Farlow had discovered the tumor in October, 1887, and had thought it was renal at that time, and in that opinion he was right. Since its discovery the tumor had more than doubled in size, and the woman has emaciated very much. She weighed one hundred and fifty-three pounds in 1886, and in October, 1887, but one hundred and seventeen, and now one hundred and six. The urine was dark and bloody at times, and there were occasional clots. I operated January 21, and thought that part of the tumor was cystic, and that there was certainly an ovarian cyst connected with this tumor; but on opening the abdomen in the median line between the umbilicus and the pubes, the first thing that I saw was the ascending colon. Beneath the posterior layer of the peritoneum was this tumor, which, I saw, was renal. I divided the peritoneum over the tumor, and separated the adhesions of the tumor to it. I then found two large veins connected with the upper part of the tumor, which was the kidney. One of these veins was as large as a small pencil, and the other as large as my little finger. These veins I tied by passing an aneurism needle beneath them. The tumor was then lifted up, and another ligature put round beneath these vessels between these and the aorta and the vena cava, and tied. The ureter was filled with this sarcomatous growth, the same as seen in the tumor. The ureter was tied and cut off.

There was very little shock, and the patient's temperature has never been above 100°, and she seems to be on the road to recovery.

This is the first nephrectomy that I have done that has promised well. I have done four, I think, all of which were fatal, and in none of them was there any secretion of urine. This woman has secreted urine, the first day eight ounces, and now something over twenty ounces. There were no very large vessels.

Dr. Homans also showed

TWO OVARIAN CYSTS,

one of which had weighed with its contents over seventy-five pounds.

Dr. J. C. Warren showed a specimen of

CANCER OF THE TONGUE

removed from a patient fifty years of age. The patient had syphilis some thirty years ago, and an ulceration of the tongue of specific character subsequently. The ulceration had returned occasionally and disappeared. About six months ago a growth appeared at the seat of the ulcer on the left-hand side of the tongue near its base, and had continued with a breaking down in its centre. There was a question, of course, of diagnosis in this case, as to whether it was specific or malignant; and iodide of potash was given for some time without satisfactory results. Still it was suggested that it might be specific and that a mixed treatment would be necessary in order to establish that point, so marked had been the syphilitic history of the patient. In order to settle this question definitely, I used a little instrument for exploration which was devised, at my suggestion last winter, by Dr. S. J. Mixter: it was the adaptation of an instrument which was used for another purpose, the object being to puncture a morbid growth, and remove from it a little cylindrical mass of tissue which could be hardened and cut into sections, and be as satisfactory for microscopical purposes as a larger portion of the growth. It enabled me to make a microscopical diagnosis before the tumor had been removed. I have succeeded in doing this in a great variety of morbid growths since in which the diagnosis was doubtful, particularly in the breast. In the present case it was possible to apply cocaine very easily and superficially, and then inject it, which Dr. Mixter did for me; and then the little sharp-edged canula was rotated through in the margin of the growth so that it took a section of the growth from one end to the other. The mass removed represented a cylinder that was laid upon a freezing microtome, and longitudinal sections cut, and a fragment of that general shape placed under the covering glass; and in that were found masses of epithelial cells placed here and there at different points. It was stained, and showed unmistakably epithelial characters. That settled the diagnosis, and the operation was consequently performed to-day. The method was the so-called Billroth method, and that is one which contemplates ligature of the lingual artery in the neck before the operation.

This enables one to proceed with much greater deliberation in the removal of that side of the tongue, and gives an opportunity to explore the glandular region connected with the tongue, and to remove any enlarged glands if necessary. It also gives an opportunity to drain the mouth through the wound, which I succeeded in doing by making an opening from the sublingual region into the floor of the mouth, and passing a drainage-tube out through the wound in the neck. The patient was next put in the operating chair; the mouth held open; the tongue, which was unusually movable for a cancerous tongue, was held well out of the mouth, so that the edges of the ulcer came almost upon the incisor teeth. A suture having been passed through the tongue, it was divided on the raphe, and the mucous membrane at the base slit up with a pair of scissors. After that by short cuts of the scissors the tip of the tongue was split, and the tongue torn partially with the fingers, back to its base. If it were decided to do this operation without preliminary ligature of the artery, that would be the method usually employed for separating the two halves of the tongue. The base of the tongue behind the ulcer was cut through with the same curved scissors, and finally they were passed from behind forwards underneath the tongue, and the whole half of the organ excised. What little oozing there was, was easily arrested with a few ligatures. It was found possible to sew up the wound in the mouth. It seems to me that that is a great improvement over the usual after-treatment, which is to plug up the floor of the mouth with iodoform gauze. One of the after-dangers is pneumonia, septic inflammation extending from the mouth to the lungs. As I left this patient to-day, there was no open wound in the mouth: the alveolar membrane and cut edge of the tongue were stitched together, and then the tip of the tongue was stitched up. The tongue, being then pulled well out, and carefully dried on a towel and cotton, was painted with antiseptic varnish — a solution of iodoform and ether, and mixed in with compound tincture of benzoin — which forms a coating like collodion on the skin. A little iodoform gauze was laid loosely around what was left of the frænum of the tongue, and the dressing placed over the tube in the neck. The advantage of this preliminary microscopic examination was great. I have been able, as you see, not only to make a diagnosis, but to present a slide under the microscope of the disease before the tumor itself has been opened. The point where the little instrument was inserted, disappeared in twenty-four hours, so that it is now difficult to show the spot. No glands could be found after the tongue was removed; but in lifting up the tongue, a good deal of sublingual tissue was removed with it, and consequently there was quite a deep hole in the floor of the mouth; and I think what glandular enlargement there was, was probably included in the part removed.

I have with me two specimens of the instrument, and Dr. Mixter has brought one; and if the Chair will allow, I should like to have him show it.

Dr. S. J. Mixter exhibited and described the instrument referred to by Dr. Warren.

Dr. F. H. Davenport read a paper entitled

SOME USES OF THE VAGINAL TAMPON.

Dr. C. M. Green: Dr. Davenport's full treatment of the subject leaves very little to say unless one disagrees with his statements, and that I do not at all. I have used the tampon for the purposes that the reader has pointed out, and most decidedly take issue with Dr. Coe, as the reader has done, in regard to the possibility of breaking up adhesions in retroversions and retroflexions, and restoring the uterus to its normal position. Of course, there are cases, as the reader has said, in which replacement cannot be accomplished with the tampon, success depending on the degree of toughness and firmness of the adhesions. In the great majority of cases I have seen, however, I have succeeded, — provided the patient was patient enough and continued under treatment long enough, — in bringing the uterus up. Of course the tampon treatment is not believed in by those who think it is safe to replace the uterus by more forcible means, — those who think that it is safe to do it with the sound, or any of the other mechanical or instrumental means. When the adhesions are firm and strong it is well to inform the patient that it will take a good while by the tampon method, generally three months to nine months, perhaps four or five months on the average, to thoroughly cause the absorption of adhesions and bring the uterus into its proper position. To my mind it is better to take that long course of treatment and do it safely than to use the harsher means, especially so as after a short time of treatment the symptoms can be so far relieved that the woman can be quite comfortable, if not well.

Looking at the matter from the side of expense to the patient, it is cheaper to have the uterus raised forcibly, provided the patient is not killed by the process, or has not pelvic peritonitis following it, which would lay her up for months. It is far better, even with the expenditure of money and time, to follow this treatment than to take the risk of having the uterus forcibly raised.

As regards the frequency with which the tampon for raising the adherent uterus has to be put in, I have found that if the woman is not too active the tampon can be kept in place and do a fairly good degree of service for six days. I have seen it stay seven and not become offensive. To keep the tampon from becoming offensive I have used iodoform mixed with glycerine. That, to be sure, does not smell very well; but with care I have found that it can be used so that it is not perceptible even to the patient, and not at all to the friends, by inserting at the outlet a piece of dry cotton, and advising the patient to wear a napkin. By using some peppermint in this mixture one can substitute a less offensive smell, and the tampon will keep sweet for six days; and it will remain in place so as to be effective. If, however, the patient is constipated and strains at stool, the tampon is likely to become dislocated, and cease to be effective. It is advisable to enable the patient to wear the tampon as long as possible, especially in the cases of poor patients it saves them money, and enables them to spend less time in waiting rooms.

The trouble I find is with those who have no perinæum, nothing to rest the tampon upon: one can get no effective pressure in such cases, and has to rely more upon the sorbifacient effects in the glycerine and in the use of iodoform. That is sometimes the reason why I do not succeed in restoring the retroverted or retroflexed uterus, because of the want of the perinæum.

Dr. F. B. Greenough: I should like to ask the reader in regard to the applications he has spoken of on congested mucous membranes, whether he doesn't occasionally find that glycerine acts as an irritant on some congested mucous membranes?

Dr. Davenport: I don't remember to have found it acted as an irritant on the vagina itself; occasionally it does on the skin at the vulva.

Dr. Greenough: I have had no experience with the membrane of the vagina, but I think on the membrane of the urethra it sometimes has a decidedly irritant action; it may be the glycerine was not pure.

Dr. C. M. Green: In reply to Dr. Greenough I have noticed that, and especially about the vulva. The discharges which are excited by the glycerine, and which it is desirable to excite, cause excoriations sometimes, and a good deal of discomfort to the patient. In such cases the dry treatment is to be substituted, I think.

Dr. J. C. Warren: It seems to me one of the great principles of the packing treatment is the absorption produced by pressure. That is a surgical therapeutic agent of great value, — that pressure will produce absorption of infiltrated tissues; so here bands of peritoneum and of subperitoneal tissue are changed into a very different physical condition from what they were previous to the packing, and rendered capable of being stretched and displaced in various directions.

Dr. C. M. Green: As to the kind of cotton, which

I think the reader did not refer to, I think the non-absorbent cotton makes far better cotton than the absorbent. Absorbent cotton flattens down, and you lose all the mechanical benefit from the elasticity. Non-absorbent cotton seems to shed the moisture, and the cotton retains its elasticity, and therefore accomplishes more from pressure against the adhesions.

Dr. J. S. Green: In two other ways I have found the tampon useful: (1) in early pregnancy, where there is pelvic trouble, perhaps from chronic salpingitis or from some previous pelvic inflammation, and where abortion has been produced in other cases in an individual; where abortion is feared or threatened, vaginal tamponing persisted in during the early weeks of pregnancy will sometimes avert abortion and enable the patient to carry on the pregnancy to the period where the uterus has risen out of the pelvis and where she goes along all right; (2) where there is excessive vomiting in pregnancy; and in some cases I have seen the vaginal tampon of signal service when no other proceeding was effectual in relieving the patient.

Dr. Davenport: As regards the point which Dr. Green made of keeping the tampon in for six or seven days, I would say that I tried it when I first began this method of treatment. I found that treating the dressings with a solution of thymol kept it sweet and clean for that length of time, but I also found that by the end of the third or fourth day the tampon became so loose that it was really not efficient; the vagina became stretched, and allowed the tampon as a whole to sag, and in that way the effect of pressure was lost. The fact that the vagina does stretch is shown by the increasing amount that it is possible to get in with each successive packing up to a certain point; and the vagina, at the end of three weeks' tamponing, when it is necessary to allow an interval of a week for menstruation, is considerably more dilated than at the beginning. This has to be taken into account in adjusting the pessary after the uterus has been replaced by the tampon; the measurements for the support will be apt to be too large, and a pessary made of that size will, as the walls of the vagina recover their tone and contract, fit too tightly.

I agree with Dr. Green as to the use of absorbent cotton as being a poor material for the tampon.

Dr. James C. White read a paper on

THE INCREASE IN THE PREVALENCE OF SCABIES, WITH REMARKS ON TREATMENT.

Dr. F. B. Greenough: I think we have to thank Dr. White for treating so interestingly this subject, which, it seems to me, is one of very great importance. Although scabies, as such, is not of any great danger to life, yet it may cause a great deal of trouble if it goes on increasing, as in fact it has lately. The question as to why it has increased so much is very hard to get at; but I think one reason, supposing it to once get well started, is that it is so often not recognized; and I have thought whether it might not be well for some one of the medical societies to publish some statement to the public giving some information as to the diagnosis, and perhaps treatment, of simple cases by which school-teachers, foremen and forewomen in our factories and workshops, should be able to recognize it, which at present they certainly do not. I think the crowding together of operatives has a great deal to do with it. Amongst my dispensary cases many have bed-fellows, and it is chiefly from amongst that class and school children that cases come; but it is by no means confined to that class.

What Dr. White has said about the necessity of not overtreating is important, and something which is not generally recognized, I think, and which precludes, it seems to me, the giving of preparations which contain green soap, for instance, in large quantity to be used by the patient.

One or two points with respect to the present epidemic as compared with the disease seen in Vienna and Paris: one is the greater rarity with which we find the true characteristic lesions of the disease, the burrow. I suppose that is due to the fact of our people being more cleanly. It is comparatively rare that I find the typical burrow; and in the great majority of cases, if we depend upon that for diagnosis, the diagnosis will not be made.

Another interesting point is that the disease is sometimes superimposed upon other skin diseases: syphilitic eruptions, psoriasis, tinea, and general eczema; three or four cases that I have seen had been diagnosticated and treated as syphilis before I saw them, the diagnosis being made on account of the eruption caused by the itch insect on the penis, and the general eruption; and one or two others in which a perfect syphilide was not recognized as such on account of the itching due to the concomitant attack of scabies.

Dr. E. Wigglesworth: I think we all ought to thank Dr. Greenough and Dr. White for bringing this subject before the public. There has been an immense increase in the amount of this disease in the community. I remember when Dr. White published "5000 consecutive cases of skin diseases" there were only 139 cases of scabies amongst them, less than 3 per cent.; now the proportion is at least 10 per cent.

My treatment has been a little different from that of Dr. White. I am in the habit of employing styrax, — one part of liquid styrax and two of lard, well mixed, — and of ordering, after a thorough soft-soap bath, to remove the epidermis as much as possible, this ointment rubbed thoroughly into the skin both morning and night for the whole seven days. The advantages of this are, that the styrax is cheaper, the odor more agreeable, the application cleanly, and the results as good as when we employ anything else; while the danger of consecutive eczema is reduced to a minimum, styrax being unirritating to the skin. I think one point worthy of consideration is, that we should not only boil or bake all the clothes used by the patient up to the time when he begins treatment, but that at the end of the cure all the clothes used by him during the treatment should also be boiled or baked in order not to communicate the disease to others.

The point Dr. Greenough makes with regard to the burrow is also very true. The itching is due principally, if not entirely, to the female insect, which burrows just under the stratum corneum of the epidermis, and lies, and finally dies, in the rete mucosum; the removal of the upper layers of epidermis therefore enables us to reach and kill the insect very readily. The more frequent use of soap, or anything that tends to remove the external layers of epidermis, tends to remove the burrow and the mite which formed it. The insect lives at least ten to fourteen days while penetrating the three upper layers of the epidermis. The greater habits of cleanliness in this country tend to remove that epidermis in which the burrow lies.

There is one other point which I think is of importance, to which the gentlemen have not alluded. Cases are increasing in frequency, and the public evil comes home to each of us in the way of employment of wet nurses. I have at present under treatment the case of a private family, where the nurse was examined, and regarded as free from every trouble of every kind; but her child, after the mother had been examined, caught this disease from another child in the house, and communicated it to the mother, probably; or possibly even passed the *acarus* solely to the foster child, so that this latter was alone attacked, the nurse transporting the mite merely, and herself escaping. The evil, therefore, may come home into the family of every one of us, and it is desirable to strike at the root of everything and exterminate the disease if we can; and that can be done only by introducing into the public hospitals the same methods of cure employed abroad; and I think we ought to have itch-cures, baths, etc. attached to every hospital, for the sake of ourselves as well as of the poor patients.

Dr. Sturgis: In 1884 I traced an epidemic of itch on Albany street to a couple of recently arrived Irish immigrants. In regard to the burrows, I find that if you take ink, and rub on the suspected places, and wash the ink off, burrows which possibly were not very distinct before become distinct.

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THE NEW YORK ACADEMY OF MEDICINE. SECTION IN PRACTICE OF MEDICINE.

Stated meeting, January 15, 1889. R. C. M. Page, M.D., Chairman.

Dr. Schuman Le Clercq, of Carlsbad, read a paper on

THE INFLUENCE OF CARLSBAD WATER ON URIC ACID EXCRETION.

The beneficial effects of the "Carlsbad cure" in gout, he said, had been recognized for centuries, but the theoretical grounds on which an indication for this treatment might be based had been as vague as the theory of gout itself. The first to establish a positive theory to explain the action of the water was Seegen. From his investigations he concluded that it caused diminished nitrogenous metamorphosis and a decrease, amounting to practical disappearance, of uric acid. But Veit, detecting the sources of error which had led Seegen to his incorrect conclusions, definitely rejected the theory of a lessened organic metamorphosis from the use of Carlsbad water; and the extensive discussion which then arose ought, he thought, to be considered as having settled this question.

As to the second point, the gradually diminished elimination of uric acid, Dr. Le Clercq said that he had been unable to find any account of further investigations, and Seegen's opinion continued to be generally accepted. At the suggestion of Dr. Hermann, of Carlsbad, he made a series of careful experiments upon his own person with the view of ascertaining whether the diminution in the excretion of uric acid under the influence of Carlsbad water, as claimed by Seegen, could be proven with our recent exact methods of quantitative analysis. He made use of the method lately proposed by Haycraft, of Aberdeen, slightly modified by Hermann, and controlled by Ludwig's method; and the analyses were made at Prof. Huppert's laboratory at Prague.

The experiments were continued from September 19 to October 20. Having analyzed his daily amount of uric acid for five days, while placed upon a regulated diet and mode of life corresponding to that of Carlsbad patients, he took the water every day in gradually increasing quantities, and determined the amount of uric acid excreted during each twenty-four hours. A table containing the results of his investigations showed that the daily amount of uric acid was, upon the whole, unaltered by the use of Carlsbad water. The quantity remained between 80 and 108 centigrammes a day, and the total amount excreted in a period of five consecutive days varied only between 4.023 and 4.890 grammes. During the time that the experiments were carried on he lost 2950 grammes in weight.

He went on to state that he had arranged in a résumé the results of the experimental researches of different authors with regard to the influence of various agents on the excretion of uric acid; and the great difference of opinion existing on every point showed, he said, that as yet no definite conclusions could be reached on this subject. Many of the analyses were made with inaccurate methods, and not all the lists were made with the urine of twenty-four hours; while, with a few exceptions, the series of experiments were not long enough to yield results which could be compared. The increase or decrease of uric acid was not due to any extraneous factor, as claimed, since similar fluctuations were also observed under normal conditions. The latter fact was well illustrated in the experiments on himself; although he was most careful in regard to every detail for the exclusion of such variation, he could not at times avoid considerable variations in the uric acid excretion. It was to be remembered, however, that, according to Neubauer, the amount of uric acid, unlike urea, depended less on the food eaten than on special internal conditions of the organism, and that it varied greatly in the normal state. Lehman's tests on his own person also pointed to the fact that the nature of the food influences the secretion of uric acid much less than that of urea.

Since, therefore, no external causes could influence the daily variations in his uric acid excretion, he could only ascribe them to internal causes, such as a regulating nervous influence. In fact, there were authors who attributed the final regulation of uric acid production and excretion to the nervous system. According to Latham, gout was caused by a disturbance of the vaso-motor centre, which influences the processes of organic metamorphosis, particularly in the nervous system. The atypical formation of uric acid in the muscles in gout, as accepted by Ebstein, could be considered from the same standpoint. While Garrod's thread experiment favored the idea of an excess of uric acid in the blood of the subject of gout, and though he himself afforded the experimental proof that uric acid is the *materia peccans*, Ebstein did not consider it necessary to accept a general accumulation of the acid, at least for the primary form of articular gout, because a localized retention of uric acid or a formation of uric acid in "a wrong place" (independent of increased production) could satisfactorily explain the development of gouty symptoms. Moreover, though it was universally agreed that in leucæmia there is an increased excretion of uric acid, this disease was never combined with gout, for which we must assume a disposition for a weaker resistance of certain organs against uric acid, either inherited or acqured. All this, he thought, fully proved that the indication offered by the secretion of uric acid cannot always be taken as an index of the quantity formed in the system (Garrod), and that the beneficial influence of a remedy in the uric acid diathesis cannot possibly be proved by analysis of the urine.

Although his experiments were made on a healthy individual, the same conditions as noted above would undoubtedly prevail in gouty subjects. If, however, experiments were made on the latter under the same conditions, the question would inevitably present still greater difficulties, as the particular phase of the disease present in any case would add further complications to the results. For these reasons he was inclined to believe that in the future the influence of a medicinal agent on the increase or decrease of the uric acid excretion would not be regarded as conclusive as regards its indication or contraindication in gout.

From a general review of the results obtained in his experiments he felt compelled to say that a decrease of uric acid excretion under the influence of Carlsbad mineral waters, as accepted by Seegen, does not appear if the tests are controlled by the recent analytical methods, which secure a much more accurate result than the method used by Seegen, of weighing the acid after precipitation by hydrochloric acid. This was now perhaps of less importance, however, as the ideas which formerly prevailed concerning the nature of gout were also undergoing an evolution. At all events, the experiments which up to the present time were regarded as explaining the therapeutic action of the water must in the light of our present knowledge be considered inefficient.

Referring to those general physiological and pathological principles which might enable us to understand more readily the facts of clinical experience, Dr. Le Clercq said that we noticed first in gouty patients under the Carlsbad treatment an amelioration of those symptoms which were explained as being due to the presence of *materia peccans*, whether excessive or not, in the blood or organs. It was often seen, for instance, that albuminuria, inflammations of the renal pelvis, migraine, and nervous troubles such as hypochondria, melancholia, and hysteria, became improved or disappeared. According to the accepted view, these complications were explained as being due to excessive quantities of uric acid dissolved in the blood; and hence it was believed that by the imbibing of the warm alterative water, which became rapidly diffused in the blood, the conditions for a prompt discharge were rendered more favorable, and the diluted urine, which soon became alkaline, in a short time removed the surplus of uric acid circulating in the blood.

But we also saw, in the second place, that the gouty attacks, formerly frequent, were kept off for some time, or became less intense, or perhaps ceased altogether, after a course with the water. With regard to this therapeutic effect we could not be satisfied with the former explanation of "a washing out," but had to acknowledge that the cause of the disease, the diathesis, seemed mitigated. Having referred to Minkowski's researches, which seemed to prove that, besides its functions of gall secretion and glycogen formation, the liver had a third function, viz., the synthetic formation of uric acid, he said that since sulphate of soda, so plentiful in Carlsbad water, was known to stimulate to a considerable extent the gall secretion, it was reasonable to suppose that it also affected the uric acid formation, although this had not as yet been substantiated by experiment. But aside from the question of an excess of uric acid in gout, whether localized or general, we had in this disease an anomaly in organic metamorphosis which was undoubtedly a complicated process. Such anomalies were benefited by the Carlsbad treatment; and he was disposed to ascribe this to the improvement of the general condition brought about by the latter.

As the food was so important a factor in the group of disorders embracing diabetes, adiposity, gout, oxaluria, etc., we might justly ask whether a faulty digestion in the stomach cannot promote the gouty process under certain conditions by the absorption of the abnormal products of the food. Wine, for instance, had no influence on the increase or decrease of uric acid formation; yet many close observers attributed in some cases (and with apparent justice) a sudden attack of gout to a single imprudent use of wine. In the same way we could explain by its direct topical action on the stomach and liver the recognized beneficial effect of Carlsbad water in many phases of gout. According to Garrod, the mineral waters were indicated in gout for the reason that the diathesis leading to its production was often closely connected with deranged hepatic function, and Ebstein and others recommended them particularly in those forms of gout complicated with plethora or gastric symptoms.

The compound action of Carlsbad water arose, in the first place, from the influence of the warm fluid itself, which, when absorbed in large quantities, as Garrod had remarked, powerfully stimulated the processes of the animal economy and increased the various secretions. Secondly, from the salts contained in it. Having referred briefly to the effects on the system of sulphate of soda, chloride of sodium, and carbonate of soda, Dr. Le Clercq said that if by virtue of the properties of the constituents of the water there resulted an increase of peristalsis and diuresis and an increased flow of liquids in the tissues, while with less food, plenty of outdoor exercise and baths were taken, fewer products of retrograde metamorphosis would circulate in the blood and organs, and those which did circulate would be more easily eliminated. Finally, not only were the secretions increased, but also the pressure under which they were secreted; this effect being due to the fact that the water was taken in sips, and probably the result of nervous influence.

The Carlsbad cure, which combined other factors, such as bathing, diet and exercise, in addition to the water, had been thoroughly studied in a paper read by the chairman, Dr. Page, before this body, and he said he would refer his hearers to that for details concerning it. If, as Garrod claimed, the causes exciting an attack of gout were those which induce a less alkaline condition of the blood, or which temporarily check the eliminating power of the kidneys, the properties of the alkaline and diuretic Carlsbad water fully established its prophylactic value. As contraindicating the Carlsbad treatment in gout, he mentioned those advanced stages of the disease accompanied with structural implication of the kidneys, or in which cachexia has resulted (aside from such other general pathological conditions as contraindicate the treatment, like cardiac disease, pronounced anæmia, carcinoma, and phthisis).

DISCUSSION.

DR. F. N. OTIS said that he would speak only of his own impressions of the value of the Carlsbad treatment as received from a course of it in his own person during the past summer, from his observations of its effects on the different classes of cases which he had seen at Carlsbad, and from the results obtained from it in various patients whom he had sent there in previous years. From his observations he had long believed that those suffering from troubles due to functional obstruction of the liver, and those with uncomfortable accumulations of fat, are most likely to be benefited by the water; and his experience with regard to it in those conditions had been exceedingly gratifying. In patients afflicted with biliary calculus its action was very prompt and efficient, and, as far as he had been able to observe, its use was attended with permanent benefit. Cases under his care, in which all the ordinary methods of treatment failed, had after a course at Carlsbad been entirely relieved. It was usually advisable, however, for such patients to spend two or three consecutive seasons there; and in two or three instances of this kind which he recalled there had been no return of the attacks after the lapse of four or five years.

Dr. Otis said that that which decided him to try the Carlsbad treatment in his own person was the presence of gout and what he supposed to be gouty dyspepsia, which was attended with more or less mental sluggishness and an inability to attend properly to his usual professional work. While at Carlsbad he daily sipped five seven-ounce glasses of the water at a temperature not exceeding 80°. The regimen to which he was subjected involved the avoidance of starchy food, but allowed a sufficient amount of nourishing diet; and he took two glasses of claret a day. Although taking only a very moderate amount of exercise, he lost one pound a day for thirty days, and among the results of the treatment was a considerable loss of strength. He experienced more or less debility for a month after leaving Carlsbad, spent principally in Switzerland, but he gradually improved in flesh and strength, and at the present time he enjoyed an amount of freedom from dyspeptic trouble which he had not had for a number of years. His own experience was also that of a good many other individuals with whose cases he was well acquainted.

Aside from the diet and the habits of life imposed upon those taking the treatment at Carlsbad, he believed, therefore, that there was something in the water which tended to the elimination of effete material from the system. This was what was needed in the class of cases under consideration, and in general he had found that those remedies which produced this result are the most valuable. Thus, mercurials were of very great service, and patients with the uric acid diathesis were often immediately benefited by their regular administration. In such cases, from one to three grains of calomel a day could be taken for a considerable period with great advantage, and without the production of any deleterious results.

THE CHAIRMAN said that individuals who had too much fat, and those who had an excess of uric acid would derive the greatest possible benefit from the course at Carlsbad; but for those suffering from Bright's disease or pulmonary trouble, or from any grave depression of vitality, it was only attended with evil. In the paper referred to by Dr. Le Clercq, which was published in the *New York Medical Record* in October, 1886, he had expressed his views very fully on this subject, and it was therefore unnecessary to repeat them on the present occasion.

DR. WILLIAM H. THOMSON read a paper on

AUTO-INFECTION FROM GASTRO-INTESTINAL FERMENTATION.

He said that in the outset he would relate some cases in which auto-infection resulted in the production of serious nervous troubles, and then make these the text upon which to base some general remarks on this subject.

CASE I. This was a lady fifty years of age, the subject of Graves's disease. She had been suffering from diarrhœa all summer, and was affected with excessive nervousness. The enlargement of the thyroid and the exophthalmos were slight. In spite of all treatment she continued to grow worse, until finally she was placed upon an exclusive diet of Arabic fermented milk. No medicine was taken except some bismuth and pepsin powders. Under this treatment she rapidly improved, and at the end of two months she was practically well. She then returned to a mixed diet, but, finding that the diarrhœa came back, she resumed the fermented milk. After a time, however, this became so distasteful to her that she was unwilling to continue it any longer. Dr. Thomson then lost sight of her for a year, and at the end of that time he found the condition greatly aggravated, the exophthalmos and enlargement of the thyroid having increased very much. Fermented milk now had no effect, and after a time she died very suddenly. It would seem, he said, that in this instance the milk for a time arrested Graves's disease, and in other cases he had acted on the same basis.

CASE II. This was a gentleman of leisure, thirty-five years of age, suffering from dyspepsia and hypochondria. His chief trouble was palpitation of the heart and a rapid pulse (the beats never being less than 120 to the minute), though there was no organic cardiac trouble. The patient was not at all dissipated in his habits. He was relieved by bismuth and powdered columba. This was evidently a case of poisoning from gastro-intestinal fermentation.

Case III. A gentleman fifty-four years of age, with gout for twelve years. After poisoning himself with an over-dose of a patent medicine known as Reynolds's specific he had a watery diarrhœa, which had a definite relation to certain head symptoms. Whenever the diarrhœa was present he was troubled with mental cloudiness, and whenever constipation could be induced his mind was clear. During the past year very good results had been obtained from the use of salol, sodium benzoate, and charcoal. The patient was unable to take salicylate of soda or naphthaline. Here also unquestionably was an instance of poisoning from intestinal fermentation.

Case IV. A gentleman fifty-four years of age, the subject of peptic insomnia, whose father had suffered in the same way. He would sleep on first retiring, but always woke after three or four hours. For a time he had taken salicylate of soda with some benefit, but it had to be given up on account of its unpleasant effects, and during the last three months better results had been obtained in his case from creoline, with charcoal as an excipient.

Case V. This was an unpromising case of epilepsy in a lad seventeen years of age. He was first seen by Dr. Thomson in October, 1886. The epileptic seizures had followed an attack of what was diagnosed as cerebro-spinal meningitis, when he was three years old, and had continued ever since. The attacks were always preceded by pain in the stomach, and a comatose condition always continued for a number of hours, and until the appearance on the body of a general eruption like urticaria. For some years his parents had given up all hope of relief, and when he came under Dr. Thomson's care the latter was requested not to give him any bromides, as they always made him worse. The seizures were often as frequent as two a day, and he found that they were always preceded by a watery diarrhœa. He also found that they were preceded by fetid breath. The principal agents employed in the treatment were turpentine resin, salicylate of soda, bismuth, and resorcin. The patient improved in general health, but not as regards the number of the epileptic attacks. He then employed picrate of ammonia and digitalis, with the results of preventing the attacks altogether. After a time, however, these remedies were discontinued, and in March, 1888, the patient had a fit. The attacks then recurred about once a week, though the breath was never offensive again. The picrate of ammonia and digitalis were now resumed; but this time they failed to have the desired effect. More recently the patient had been taking salol, nitrate of silver, and other remedies with benefit. This case he regarded also as one in which there were clear evidences of intestinal fermentation.

Dr. Thomson then went on to say that it could no longer be doubted that the intestinal canal might be the seat of the generation of violent poisons, the result of bacterial action, which were as active as any poisons that could be introduced from without. This was clearly shown in both typhoid fever and cholera, and Koch had demonstrated that the cholera bacillus runs through its entire course in the intestines. The poisons eliminated in the intestines acted like pancreatine, and, like it, had their effect increased by such substances as sodium carbonate. It was indisputable that many disturbances of the economy were primarily due to such poisons generated in the intestines, and this was especially true of functional derangements of the nervous system. This subject had been greatly elucidated during the last ten years by the investigations of Brieger, Selmi, and others in regard to the ptomaines. While many of these were inert, there were others possessing every variety of deleterious influence, and which closely resembled some of the vegetable alkaloids in their qualities.

Having referred more particularly to indol, he said that *a priori* we would expect that the intestinal canal, from the conditions known to exist there, would be likely to admit of such changes in its contents as would involve products which would give rise to many distinct forms of nervous disturbance. He had long been convinced that there must be an essential difference between those forms of nervous disease which were intermittent in their character, and those which were constant. If they were intermittent he did not believe there could be any organic lesion; while, on the other hand, if the symptoms were constant, the disease must be organic. These considerations, Dr. Thomson said, had a bearing upon the treatment. He agreed with Wilks that migraine and epilepsy were mentally exclusive. If an individual had one of these troubles, he would be free from the other; and the two affections were non-interchangeable. He considered epilepsy a functional disease from the fact that it was intermittent.

Since there was this constant tendency to fermentation and the generation of poisons in the intestinal tract, it might be asked, What is our safeguard from their dangers? The answer was, the character of the natural secretions. They are, in the first place, digestive, and, secondly, powerfully antiseptic. In so-called uræmia the condition was due rather to the excretion of intestinal alkaloids than to the excretion of urea; and from his belief in the liability to the generation of such poisonous products in various states of the system he had been led to employ antiseptic agents very largely in his practice. For a long time past he had been in the habit of treating migraine as dependent on defective innervation of the alimentary tract. In typhoid fever he used bismuth freely, on account of its antiseptic qualities. Among the other antiseptic agents that he had found most useful were resorcin, in five-grain doses, benzoate of soda with salol, and creoline with charcoal as an excipient. In looking back over the past few years in his own practice, he could observe, therefore, a marked change in the treatment which he adopted in various affections, the tendency being constantly towards the more general use of antiseptics.

— Dr. Loomis, in his address before the New York Academy of Medicine, February 7th, declared that our "hospitals and dispensaries so far exceed the needs of the city that there is actually a premium on patients to fill their wards." Dr. Loomis used this as the text for an earnest plea for the diversion of the gifts of liberal-minded citizens to the establishment of educational institutions.

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THE MARINE HOSPITAL SERVICE REPORT AND THE EPIDEMIC OF YELLOW FEVER.

THE fifteenth annual report of the Marine Hospital Service[1] details the operations of their eighty-ninth year, ending June 30, 1888. During the year 48,203 sick and disabled seamen were furnished relief; 14,077 in hospitals, 34,120 in dispensaries. The number of ports at which relief is authorized is 210, in eight districts, namely: North Atlantic, Middle Atlantic, South Atlantic, Gulf, Ohio, Mississippi, Great Lakes, and Pacific. The expenditure involved was $528,844.36, not including $77,685.16 for repairs, etc., and $57,933.68 from the special fund for preventing the spread of epidemic diseases.

A laboratory for bacteriological research was established in New York, which it is desired, and very properly, should be removed to Washington. The laws and regulations regarding quarantine have been improved so as to include (1) weekly reports of the sanitary condition of foreign ports, which are distributed to our various health authorities; (2) inspection, disinfection, and report of the condition, as the case may be, of vessels bound to United States ports; (3) the requirement, on the part of the United States, that vessels coming to our ports should obey the quarantine laws in force at their destination; (4) co-operation of the Marine Hospital Service with local boards when desired, or entire maintenance of the quarantine if called upon for it, or if that duty does not naturally fall to any one State or municipal authority — at Cape Charles, Delaware Breakwater, Sapelo Sound, Key West, Gulf of Mexico, San Diego, San Francisco, Puget Sound, for instance.

The National Quarantine Act provides for vessels and vehicles coming from any foreign port or country, and naturally includes immigrants through Canada. Supplemented by the Marine Hospital Service Regulations or by those of ports like New Orleans, where the local service is efficient, it provides sufficiently for medical inspection, isolation, and disinfection, as each case requires, without interfering unnecessarily with commerce. A few large cities have very deficient quarantine service, but the general government, under the present laws, cannot interfere; and in some of the extreme Southern States fruit-smuggling offers means of introducing yellow fever by vessels small enough to run into the creeks and small rivers.

Yellow fever appeared at Key West in 1887 by direct importation from Havana, when Key West had no quarantine. The evidence is that it spread thence to Tampa by smugglers, and prevailed in Jacksonville the following winter, finally extending to several towns in Florida, Georgia, and Alabama. There was no State board of health in Florida, the local boards had authority of very narrow range, the general government had no power to interfere in the State, not yet having been requested so to do by the governor, and the disease extended almost without hindrance, some of the measures adopted for its control being close on the lines of superstition. When finally called upon, the Marine Hospital Service began active work in house-to-house inspection, in placing the sick in hospitals remote from infection-centres, in separating others from the infected locality by removal to camp or safe towns at a distance, by supervision of those who had been exposed to infection, finally by disinfection or destruction of infected matter. An early sanitary survey by the medical officers of the service had served to throw out danger signals for health authorities generally.

A very interesting part of the report is a study of yellow fever by the accomplished epidemiologist, Dr. Guitéras, and based on the mortality statistics of Key West. From an elaborate analysis of the death returns, ages at death, nativity, relative prevalence among whites and colored, etc., for a period of years, Dr. Guitéras concludes, and his reasoning seems to be sound, that malarial diseases do not originate in Key West, and that yellow fever has prevailed there almost continuously since 1881 at least, the deaths due to it having been certified as malaria and otherwise, the mild form of the disease being very frequent among children, and not recognized. Key West is less than twenty-four hours by steamer from Havana, where filth and fever run riot; and the fact that yellow fever has become endemic there is attributed by Dr Guitéras to an utter disregard of all sanitary measures, and the occasional severe outbreaks or epidemics to a gradual accumulation of susceptible natives born since the previous epidemic, and of susceptible foreigners. He concludes his paper with an urgent recommendation, in which we heartily join, for liberal expenditures on the part of the general government for investigations into the etiology of yellow fever. A judicious quarantine we must have, for the present at least, to guard against this, the most highly infectious of all diseases. Less filth in towns and more efficient sanitary organizations, especially State boards of health, are also necessities of the times. Quarantine, where it is controlled by the general government, may well rest where it is, with the Marine Hospital Service. A National Health Bureau, such as is proposed in the bill of Representative Davis, now before Congress, however, is only a matter of time, and must come sooner or later, as an advisory and investigating board, and one to deal with inter-state sanitary questions, water-supply, drainage, sewerage, food-adulterations, trades injurious to health, etc.

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[1] Annual Report of the Supervising Surgeon-general of the Marine Hospital Service of the United States for the fiscal year 1888. Washington. Government Printing Office. 1888.

ANNUAL REPORT OF THE PRESIDENT OF HARVARD COLLEGE FOR THE YEAR 1887–88.

THE annual report of the President of Harvard University usually contains some items concerning the Medical School, of interest to those who have the welfare of the medical profession at heart. The present report devotes but short space to the Medical School. The president mentions the changes in the curriculum, especially the change in the fourth year by which all its studies are made elective; the appointment of new instructors, and the very important fact that the endowment of the school has not been increased during the year.

In regard to the possibility of the establishment of a compulsory four-years' graded course the Dean gives the report of a committee charged with the consideration of the subject to the effect, that in their judgment, a subscription income of $20,000 a year for five years would justify the establishment of such a course. The impossibility of obtaining such a guarantee fund necessarily postpones a compulsory four-years' course for an indefinite period.

The President pays a well-deserved tribute to the instructors of the Dental School, whose teaching is done, not for the sake of their own meagre salaries, but for the love of teaching. The report upon the Veterinary School is not an encouraging one. It is justly said that this "department should be made a centre of research in the many fields where the health and well-being of men and animals are bound up together," but the continuance of an annual deficit makes it doubtful whether there is sufficient interest in the school to secure an adequate endowment.

THE ENCYCLOPÆDIA BRITANNICA AND VACCINATION.

IT is not pleasant to see in so excellent a work as the "Encyclopædia Britannica," whose concluding volume has lately appeared, an article so incorrect, misleading, and one-sided as the vaccination article written by Dr. C. Creighton. He regards cow-pox as "an infectious disease arising out of a common physiological or constitutional eruption on the teat of milch cows, and acquiring its special characters by the persistent irritation to which it is subjected at the hands of the milker"! This we think will be about as satisfactory to pathologists as his fanciful analogies between cow-pox and syphilis, or his inclusion among the natural consequences or incidents of cow-pox — not as results of the foreign contamination of vaccinal lymph — erysipelas, jaundice, vaccinal ulcers, and vaccinal syphilis. These, he says, are a "reversion to the type of manifestations produced by primary inoculation from the cow!"

His sweeping condemnation of lymph direct from the cow will not meet the approbation of physicians who have had practical experience with both the humanized and animal virus, and his theories of small-pox, which he thinks is destined to die out by a natural process, "uninfluenced by vaccination," seem to us unsustained by the facts.

MEDICAL NOTES.

— Nashua, N. H., is trying to secure a City Hospital.

— The legislature of Florida has just convened in extra session for the express purpose of establishing a State Board of Health.

— The corner-stone of the new Christ Hospital, which is to to built on a commanding site in Palisade avenue, Jersey City, was laid January 30 by Bishop Starkey, of the Episcopal Church. The hospital is intended as a memorial to the Rev. Dr. Abercrombie, of St. Matthew's Church, who founded the Christ Hospital. The institution is now in the old Tonnele mansion, in Tonnele avenue, and has been found to be too small, and after Dr. Abercrombie's death it was decided to procure a site and erect a new structure as a memorial. The new building will be one hundred feet long and ninety feet deep, and will be constructed of trap rock taken from a quarry in the immediate neighborhood.

— New York State Medical Society has requested the legislature to pass a law making it a misdemeanor for undertakers or embalmers to inject embalming fluid into a body in any way excepting by arterial injection.

— Dr. Duff, of Elgin, who was one of the best-known medical practitioners in the north of Scotland, died a few days ago at Elgin, where he had lived for many years. He attended O'Connell in his last illness at Genoa, and was with "the Liberator" when he died.

— Two boilers at the State Hospital for the Insane at Lincoln, Neb., exploded recently, completely wrecking the engine house, killing two patients, and fatally injuring two other patients and the two engineers. The explosion completely destroyed the five boilers and the dynamo for furnishing electric light, leaving the building without heat or means of preparing food. The loss will probably be $20,000.

— Dr. Amos Walker, the oldest physician in Pennsylvania, died in Bucks county on Monday, aged ninety-six years. His ancestor in this country, John Paxton, the famous Quaker, settled in 1682 near the spot where Dr. Walker died. The deceased man was fifty-two years old when he graduated in 1846 from the University of Pennsylvania, he having followed farming in Bucks county until that time. He was a cousin of Gen. Winfield Scott, and of the Hon. Robert J. Walker.

— A correspondent writes to the *Lancet* referring to many cases, such as that of the late Lord Beaconsfield, in which a rise or fall of the thermometer in the sick-room acts injuriously or even fatally, and points out that often the relapse in the patient is the first signal of danger. He suggests that a modification of one of the forms of thermometer by which an electric signal gives notice of rise or fall — the thermometer now much used for early detection of fires in mills, etc. — should be generally adopted in hospitals and, where necessary, in sick-chambers.

— The columns of the Milwaukee daily papers are largely occupied at the present time with argument *pro* and *con* on the proposed medical law which is pending before the legislature of that State. The editorial position of the papers themselves seems to be generally *con*. Quacks form more profitable advertisers than educated physicians. The Philadelphia papers are also somewhat taken up with the same discussion, caused by the medical bill now before the Pennsylvania legislature, and here in some instances the press favors the reform.

BOSTON.

— An order was adopted last week in the Massachusetts House of Representatives requiring Boston physicians to return monthly lists of births.

— The Harvard Medical School has just received from Dr. D. W. Cheever the sum of $5000 to establish a scholarship to be known as the David Williams Cheever Scholarship.

— The twentieth annual report of the Children's Hospital on Huntington avenue recalls the valuable service this institution has done during its long period of existence. The operations of the past year show that three hundred and eighty-two patients have been cared for in the hospital, of whom three hundred and ten have been discharged well or relieved. In the out-patient department twelve hundred and seventy-five patients have been treated.

— At the seventy-fifth annual corporation meeting of the Massachusetts General Hospital, February 6th, the following-named officers were elected: — president, Charles H. Dalton; vice-president, George Higginson; treasurer, Franklin Haven, jr.; secretary, Thomas B. Hall; trustees, E. Francis Bowditch, Edmund Dwight, Samuel Eliot, William Endicott, jr., Thornton K. Lothrop, Nathaniel Thayer, David R. Whitney, Roger Wolcott.

Correspondence.

STATE CONTROL IN THE PRACTICE OF THE HEALING ART.

Charlestown Navy Yard, Jan. 5, 1889.

Mr. Editor, — In presence of the modern struggle toward a more perfect civilization, the public may be interested to read the following, in comparison with actualities of the profession and laity in this age and country.

Sanskrit records inform us that the rajah (government) was empowered to enforce laws regulating the practice of medicine and to suppress quackery. Various specialties, analogous to if not identical with those now so flourishing, are mentioned as well established among the people of ancient India.

In the eleventh century, among the Arabs of northern Africa (Cairo, Fez), eminent practitioners acted as inspectors empowered by the government to superintend the medical profession, as well as the vocations of barber-surgeon, pharmacist, herbalist, and vendor of drugs.

"An important event in the annals of medicine was the public recognition of its practitioners by the Emperor Constantine, who, desiring to relieve his subjects from the pressure exercised by quacks and magicians, divided the orthodox and trained physicians into two classes, the Archiatri of the Palace (*Archiatri Palatini*) and the Archiatri of Cities (*Archiatri Popularos*). The former constituted a guild or corporation, whose members were exempted from public burdens and rewarded with various other immunities and privileges. The latter were elected from the general host of practitioners by the citizens, and approved by the *Archiatri Palatini.* They were allotted, proportionately to the number of inhabitants, to the various districts of the capital city, and to the towns and villages; they were paid from the public purse. They found in each district or town a medical board or college, which had charge, not only of the medical profession and instruction of students, but also of the public health."

"Were it possible to picture to the mind's eye the precise condition of the entire class at this particular period, in all probability we should see an orthodox and ingenuous minority, intent only on achieving an efficient and perfect system of practice, pursuing their sacred calling in the midst of a troop of subordinate and superstitious operatives, of whom the greater part were monks and ecclesiastics; or, worse still, the mass of practitioners were ignorant (possibly, some honest) traffickers on the credulity of their fellow-creatures, using magic and other delusive frauds, to the utter disregard of common sense and of the rules deduced from the experience of the ancients; that was, in short, an age of miracles and prodigies, when sorcerers vied with saints in pretension to supernatural powers; and the popularity of such illusions precipitated the downfall of the Alexandrian school, which was still regarded as the focus of all learning."

When history reveals the exact status of the then medical profession, we find it rapidly degraded to a vacillating compromise, wherein the views of old sectarians are jumbled together as in a kaleidoscope, to form a dogmatico-empirical conglomerate of recipes, rather than a rational system of practice.

"In England, after the introduction of Christianity, the clergy assumed the profession of medicine, administering some old and well-known remedies with a good deal of superstitious ceremonial, which, perhaps, had a greater effect upon the patient than the nostrums themselves." The "royal touch" healed disease, — after (in one case) *twenty-one* days. In 1570 men were wandering about the country with changeable names and false medicines, to the great abuse and deceit of the king's people, besides loss of goods and lives of the same.

Japan and Germany require of makers and venders of patent medicines submission to governmental control, exercised by scientific experts. Yet the peasants of the island empire (owing, doubtless, to misery and ignorance) "place greater faith in such compounds and in charms against disease sold in the temples than in remedial measures prescribed by the regular medical profession."

Those who practised faith-healing in Europe during the eighteenth century were often called upon officially by intelligent authority, and asked to show the rationale of alleged cures — "civil powers never have any faith!" Rapid careers to fortune were stopped by the rude interference of "science, with its cruel habit of tracing effects to their primary cause."

Of a truth we know that credulity — ignorant faith — is not dead yet. Old-time amulets and talismans may have been, to some extent, laid aside, but "the public have eagerly taken up those more artful devices usually called patent medicines." If quacks and empirics, unlicensed professors of the healing art, still abound, does not the fault lie with a credulous public, who have ample means of discovering the fraud? Simplicity (apparent only) is the great attraction of quackery; it offers a cure-all to everybody, flattering one's vanity, and ministering to self-esteem. Inquiry is the one thing it cannot resist. Empiricism and falsehood cannot long endure the searching tests of analysis and experiment

A judicial mind naturally supposes that the physician is called to cure, with wise expedition, a patient's disease. As a matter of experience, the general public, being comparatively ignorant of the elements of science, have no correct standard by which to measure a medical practitioner's qualifications, so that character or capacity is often slighted, and a plausible address or adroit flattery carries off the palm of success, the moral effect of which has a bad influence upon young men of this and other professions. The credulity of an ignorant and bigoted people filled with admiration is almost incomprehensible to those whose minds are capable of seeing the true, the logical relation of actions — of cause and effect. The schoolmaster indeed is needed, meaning by this term education, knowledge, in extent wide enough to overcome all the factors producing belief in superstition, pretentious, deceptions, and trickery.

Recently, in some of the States, efforts have been made to establish obligatory governmental registration of those who practice medicine. It appears, however, that the laical officials empowered to effect such measures have no adequate, efficient means of estimating the scientific qualifications of the aspirants; and the results of a system which thus far may be considered as on trial do not seem to be encouraging, in regard to benefiting the community at large. Such a mode of procedure is, as experience seems to show, more apt to lower the standard of excellence by the yoking together the good and the bad, through the application of an arbitrary formula.

Long observation and sober reflection have led some thinkers to the opinion that the interest of the people — those who need a physician (and *physicien*) to help prevent the oncoming of disease, and bring comfort afterward — would be better served by elevating the standard of professional societies, and by restricting admission to those only who prove themselves worthy, through moral excellence of character, educational attainments, and philosophic truthfulness (apparently not an ordinary virtue in scientific investigation). See Sir Charles Bell's "Letters on Professional Character and Education."

During "the present century there has been a continuous upward and onward movement in the medical profession;" and this is to the common advantage of all. A higher standard of the members of the profession being required, they have risen to it and with it, and will continue to do so, individuals of the general community reaping the benefit. In this direction, rather than by statutory enactments, may we look for the elimination of quackery and fraud, which escape legal barriers, and find their sustenance in the credulity of those ignorant through carelessness, indifference, vanity of personal opinion, or by necessity of their physical (or social) surroundings in the struggle for existence.

A thoughtful consideration of the various sides of this problem of enlightenment, as above suggested, shows how serious and wide-reaching a question it is, and how intimately related with phases and fields of general education and religion usually looked upon as distinct regions of human activity.

A bold and diligent scrutiny of the wisdom of the past may lead to new indications for the future. Very respectfully yours,

F. B. Stephenson, M.D.,
Surgeon, U. S. N.

LETTER FROM PARIS.

Paris, January 25th, 1889.

At the beginning of a new year it may be reasonable to review the scientific work that has been gone through with in this country during the last year, especially as far as the practice of medicine and surgery is concerned. The most remarkable item is the powerful impulse given by the microbian doctrines, which soon demonstrated their influence on prophylaxis and hygiene, and at the same time their almost useless applications in therapeutics. The new modes of treatment introduced against pulmonary phthisis may be mentioned as an example. It is this affection, now known to be eminently microbian, that has served as the principal field for the microbists to work upon. To introduce microbicide agents by the respiration into the depths of the pulmonary alveoli to exterminate the parasitic enemy, was the idea which inspired the first therapeutic attempts in this direction. Drs. Seiler, Chevy, Garcin, and Hayem introduced into practice the use of hydrofluoric acid, hoping to find in this agent the true scourge of the bacilli, but their enthusiasm was checked as the medical public showed that the only tuberculous sputa which proved inoffensive in inoculations were those treated by pure hydrofluoric acid vapors, which cannot be employed in therapeutics. The inhalations of sulphurous acid which were previously employed with the same object had given but deceptive results; for, notwithstanding certain favorable effects, such as the increase of the weight of the patients, the diminution of the cough and quantity of the sputa, phthisis, after a rapid and temporary improvement, continued to follow its fatal course. Gaseous rectal injections, parenchymatous or subcutaneous injections of mineral or vegetable oils holding in solution divers substances, such as iodoform, eucalyptol, etc., were found equally deceptive. In the treatment of the alimentary canal the application of the microbian doctrines was found more successful. The works of Prof. Bouchard have shown the importance of abnormal fermentations, and the gravity of different forms of toxæmia which may result from them; at the same time he brought to notice the utility of the prompt elimination of these poisons manufactured in the living organism itself. These autochthonic poisons become in their turn as noxious as the microbes themselves, and open to us a new stage in the parasitic doctrine. Chemical poisons are now universally admitted; the remarkable researches of M. Brieger and of Prof. Gautier have thrown much light on them, and their rôle is becoming more and more extended. The treatment of the green diarrhœa of infants, by lactic acid, which Prof. Hayem introduced, in basing his arguments on microbiological data, has already furnished numerous cures. But whether lactic acid is really an antiseptic, at least in doses in which it is administered in these cases, is questioned by many practitioners. Typhoid fever is recognized to be of microbian origin. It is at the outset a general affection; its pathogenic microbe multiplies itself in the accessible points of the intestinal tube. Considering this a favorable field for the application of medical antisepsis, Prof. Bouchard recommends the administration of naphthol and the salicylate of bismuth both by the stomach and the rectum, but as he associates with his antiseptic treatment, baths, the sulphate of quinine, calomel, etc., it becomes a question whether the success he has obtained in these cases should be attributed to the intestinal antisepsis or to the other remedies employed. As regards diphtheria, it would perhaps be easier to enumerate the antiseptics that have not been employed against it than those which have been employed. Prof. Graucher is said to have obtained excellent results in some apparently hopeless cases by employing, locally, carbolic acid. But he stated, in a note on the subject, that the treatment is excessively painful: children are scarcely able to support it and it requires a good deal of courage on the part of adults to submit to it, especially when it is considered that for the remedy to be effectual a very concentrated alcoholic solution should be employed, rubbing the parts affected energetically with a brush. But this would appear to revive the old practice of cauterization, so much discredited and so vehemently combated not long ago; and it was shown that hydrochloric acid was as much a microbicide as carbolic acid. This new theory of microbicides is pushed so far that even the time-honored specific medicaments would, by some, be considered simple antiseptics,— such, for instance, as the action of mercury in syphilis, and that of the sulphate of quinine against intermittent fever; but such conceptions are easily refuted. The above remarks sufficiently show how the apparent richness of the applications of the microbian doctrine simply marks its real poverty. But we are not to infer from this that microbiology has rendered no service in the practice of medicine or surgery. In the field of hygiene and of prophylaxis we can easily establish the preponderating influence exercised by our knowledge of organized germs. It is in this sense that the works of the last few years may be considered as having really renewed this branch of science. If one should study phthisis, for instance, against which internal therapy has shown its insufficiency, one may see the marvellous results obtained by means which, properly speaking, belong to the domain of hygiene, such as suralimentation, living in the open air, disinfection of apartments, etc. But the most brilliant triumphs of the microbian doctrine, as may be seen in prophylaxis, have been obtained in the domain of surgery and of obstetrics.

For instance, the surgery of the present time is not to be compared with that which was practised fifteen years ago. Operations which were hitherto looked upon as rash and perilous are now performed at the least indication, and sometimes even without sufficient indications. These marvellous results have been obtained by attending minutely to antiseptic precautions. In the same way, in the maternities, puerperal fever may be said to be virtually suppressed, as the mortality from that dire disease, which was formerly very great, even as much as one in fifteen, is now not more than one in a hundred, as shown by Prof. Tarnier's last annual report. It is by the science of microbiology that we are now enabled to detect microbes in the air we breathe, in the water we drink, and even in the very soil on which our houses are built. The recent researches of Prof. Brouardel in conjunction with Drs. Chantemesse and Widal had established that potable water which was considered chemically pure contained the pathogenic organisms of typhoid fever.

The great event of the year was the inauguration of the Pasteur Institute in November last, which has been duly reported in the JOURNAL. Many arguments for and against the establishment have been published in medical and lay periodicals. It would be premature to say anything definite concerning the utility of such an institution, as time alone will prove or disprove the efficiency of the inoculation treatment as practised by M. Pasteur against rabies.

A. B.

REPORTED MORTALITY FOR THE WEEK ENDING FEBRUARY 2, 1889.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Typhoid Fever.	Diph. and Croup.	Scarlet Fever.
New York	1,526,081	783	326	23.40	15.86	.65	6.41	5.72
Philadelphia	1,016,758	399	119	14.56	26.12	6.50	5.20	2.34
Brooklyn	751,432	333	158	19.50	26.40	—	12.00	1.50
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	154	61	16.90	7.80	1.30	7.80	.65
Baltimore	437,155	159	54	4.41	15.49	1.89	.63	—
Boston	407,024	188	70	15.37	16.96	.53	9.54	—
Cincinnati	225,000	112	—	14.24	12.46	1.78	8.01	1.78
New Orleans	248,000	109	22	11.04	12.86	—	2.10	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	84	32	11.99	20.71	2.18	2.18	2.18
Pittsburg	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	33	10	12.12	12.12	6.06	—	—
Portland	40,000	13	3	—	23.07	—	—	—
Worcester	76,328	23	11	13.05	39.15	—	8.70	4.35
Lowell	69,530	36	19	11.11	27.77	2.78	5.56	—
Cambridge	64,079	17	5	35.28	5.88	17.64	—	—
Fall River	61,203	25	13	24.00	12.00	—	4.00	20.00
Lynn	51,467	9	—	11.11	11.11	—	—	—
Lawrence	40,175	22	8	9.10	4.55	4.55	4.55	—
Springfield	39,952	13	1	30.76	7.69	7.69	23.07	—
New Bedford	36,298	13	3	—	23.07	—	—	—
Somerville	33,307	—	—	—	16.66	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	11	4	44.44	—	—	44.44	—
Chelsea	27,552	15	—	6.66	6.66	—	—	—
Haverhill	24,979	2	—	—	50.00	—	—	—
Taunton	24,796	8	3	12.50	12.50	—	12.50	—
Brockton	24,784	5	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	8	3	37.50	12.50	—	37.50	—
Malden	18,932	6	1	—	—	—	—	—
Fitchburg	17,534	2	—	—	—	—	—	—
Waltham	16,651	2	1	—	—	—	—	—
Newburyport	13,839	3	1	—	—	—	—	—
Northampton	13,419	—	—	—	—	—	—	—
Quincy	13,728	8	1	12.50	—	—	—	—

Deaths reported 2595: under five years of age 920; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 441, acute lung diseases 406, consumption 332, diphtheria and croup 184, scarlet fever 68, typhoid fever 46, measles 43, diarrhœal diseases 36, whooping-cough, 32, malarial fever 14, cerebro-spinal meningitis 9, erysipelas 8, puerperal fever 1. From measles, New York 29, Brooklyn 6, St. Louis 4, Boston 2, Worcester and Cambridge 1 each. From diarrhœal diseases, New York 19, New Orleans 6, Boston 4, St. Louis, Washington, and Charleston 2 each, Philadelphia and Brooklyn 1 each. From whooping-cough, New York 16, Brooklyn 9, Washington and Cambridge 2 each, St. Louis, Baltimore, and Lynn 1 each. From malarial fever, New York 5, St. Louis 3, Brooklyn 2, Baltimore, Cincinnati, and New Orleans 1 each. From cerebro-spinal meningitis, New York and Cincinnati 2 each, Philadelphia, Baltimore, Boston, Washington, and Chelsea 1 each. From erysipelas, New York 3, Boston 2, Brooklyn, St. Louis, and Lowell 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending January 19th, the death-rate was 21.9. Deaths reported 4011: infants under one year 876; acute diseases of the respiratory organs (London) 492, measles 292, whooping-cough 98, scarlet fever 63, diphtheria 57, diarrhœa 31, fever 27.

The death-rates ranged from 11.5 in Hull to 34.9 in Blackburn; Birmingham 21.9; Bradford 16.6; Leeds 26.0; Leicester 15.6; Liverpool 27.5; London 21.2; Manchester 26.9; Nottingham 16.2; Portsmouth 20.7; Sheffield 22.0; Wolverhampton 22.1.

In Edinburgh 18.0; Glasgow 26.8; Dublin 31.5.

The meteorological record for the week ending February 2, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Feb. 2, 1889.	Barometer.	Thermometer			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean	8 A. M.	8 P. M.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	Duration. Hours & Min	Amount in inches.
Jan. 27	29.54	36.5	40.0	34.0	90	92	91.0	N. E.	N. E.	12	24	R.	R.	12.45	.39
" 28	29.24	37.5	43.0	29.0	80	59	70.0	S. W.	N.	20	7	C.	O.	5.20	.10
" 29	29.51	24.0	28.0	22.0	85	73	69.0	W.	W.	14	18	F.	C.	4.18	T
" 30	30.11	22.5	28.0	11.0	53	78	66.0	N. W.	S. W.	10	4	O.	C.		.00
" 31	30.01	37.5	45.0	26.0	75	88	82.0	S. E.	S.	13	11	O.	C.	0.05	T
Feb. 1	29.75	29.5	38.0	24.0	72	75	74.0	N. W.	W.	12	19	O.	C.	2.40	.02
" 2	29.77	26.5	35.0	18.0	72	71	72.0	S. W.	S. W.	12	12	O.	C.		.00
Means for the Week															

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JANUARY 26, 1889, TO FEBRUARY 1, 1889

By direction of the Secretary of War, Colonel **JEDEDIAH H. BAXTER**, chief medical purveyor, will proceed to New York City on public business connected with the Medical Department, and on completion thereof return to his station in this city. Par. 17, S. O. 30, A. G. O., Washington, February 3, 1889

By direction of the President, Lieutenant-Colonel **JOSEPH C. BAILEY**, assistant medical purveyor, and Major **CHARLES L. HEIZMANN**, surgeon, are detailed as members of the Army Retiring Board at San Antonio, Tex., convened by War Department order dated January 16, 1888, published in S. O. No. 12, January 16, 1888, from hdqrs. of the army, vice Lieutenant Colonel **EDWARD F. VOLLUM**, and Major **FRANCIS L. TOWN**, hereby relieved. Par. 15, S. O. No. 28, A. G. O., Washington, February 2, 1889.

By direction of the President, in pursuance of the authority contained in provisions of the Act of Congress approved March 3, 1887, "Making appropriations for sundry civil expenses of the Government," relating to the methods of preventing the spread of epidemic diseases, Major **GEORGE M. STERNBERG**, surgeon U. S. Army, will proceed to the Island of Cuba for the purpose named in the letter of the President addressed to the Secretary of War, April 17, 1888, and upon completion of this duty will return to his proper station and submit his report to the President. Par. 16, S. O. 30, A. G. O., Washington, February 5, 1889.

By direction of the Secretary of War Major **GEORGE M. STERNBERG**, surgeon, is relieved from duty as attending surgeon and examiner of recruits at Baltimore, Maryland, to enable him to comply with the requirements of paragraph 16, S. O. No. 30, of the 5th instant. Par. 4, S. O. 31, A. G. O., Washington, February 6, 1889.

MEARNS, EDGAR A., captain, assistant surgeon, Fort Snelling Minn., will proceed without delay to Fort Pembina, Dak., and report to the commanding officer of that post for temporary duty. Par. 3, S. O. 12, Hdqrs. Dept. of Dak., St. Paul, Minn., January 31, 1889.

By direction of the Secretary of War the leave of absence granted Captain **LOUIS A. LA GARDE**, assistant surgeon, in S. O. No 290, December 13, 1888, from this office, is extended three months. Par. 2, S. O. 31, A. G. O., Washington, February 6, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 2, 1889

HALL, J. H., passed assistant surgeon, ordered to Naval Hospital, Washington, D.C.

ECKSTEIN, H. C., surgeon, detached from U. S. S. "Adams" and wait orders.

DIXON, W. S., surgeon, detached from special duty at Baltimore, Md., and to the U. S. S. "Boston."

OBITUARY — GEORGE W. FAY, M.D.

Dr. George W. Fay, of East Weymouth, died February 5, of peritonitis, having been ill only five days. Dr. Fay was born in Grafton fifty four years ago, and entered upon the practice of medicine in 1857 in East Weymouth. For many years he was a member of the school board of Weymouth, and served one term as selectman. He was a prominent Mason, having attained the 32nd degree of that order. Dr. Fay had always been a prominent and active citizen, and his death has removed a man whose place will be hard to fill. He was a widower and leaves five children — two sons and three daughters. His eldest son, Dr. Frank Fay, is a physician in Worcester.

APPOINTMENT.

DR. J. WILLIAM WHITE was elected professor of Clinical Surgery, and **DR. J. GUITERAS** has been elected professor of Pathology and Morbid Anatomy in the University of Pennsylvania. A Clinical Chair of Orthopædic Surgery, and a Chair of Histology and Embryology were erected. No selection to fill either was made.

RESIGNATION.

DR. S. L. ABBOTT has declined to be a candidate for re-election as Visiting Physician at the Massachusetts General Hospital.

BOOKS AND PAMPHLETS RECEIVED

Transactions of the American Gynæcological Society. Vol. 13. For the year 1888. Philadelphia: William J. Dornan. 1888.

The Cortical Localization of the Cutaneous Sensations. By Charles L. Dana, A.M., M.D., of New York. Reprint. 1888.

The Skin Diseases of Infancy and Early Life. By C. M. Campbell, M.D., etc. London: Baillière, Tindall & Co. 1889.

Bright's Disease of the Kidney. By Alfred L. Loomis, M.D. Detroit: George S. Davis. 1888. Physician's Leisure Library Series.

Success and Failure of Electrolysis in Urethral Strictures, especially Dr. Keyes' Method Reviewed. By Robert Newman, M.D. Reprint.

The Physician's Hand-book for 1889. By William Elmer, M.D., and Albert D. Elmer, M.D. New York: W. A. Townsend Publishing Co. 1889.

Femoral Osteotomy for the Correction of Deformity resulting from Hip-Joint Disease. By Ap Morgan Vance, M.D., Louisville, Ky. Reprint. 1888.

Clinical Lectures on Diseases of the Urinary Organs. Delivered at University College Hospital by Sir Henry Thompson. Eighth edition. Philadelphia. P. Blakiston. 1888.

La Mission du Dr. Sternberg au Brésil. Réfutation du rapport publié par ce médecin sur la fièvre jaune. Par le Dr. Domingos Freire. Rio Janeiro. 1889.

The Operative Treatment of the Hypertrophied Prostate. By Francis Sedgwick Watson, M.D., Surgeon to Out-Patients, Boston City Hospital, etc. Boston: Cupples & Hurd. 1888.

Studies in Pathological Anatomy. By Francis Delafield, M.D., etc., etc. Vol. II. Part 3. Acute Bright's Disease. Plates xi. to lxxxii. November, 1888. New York: Wm. Wood & Co. 1888.

Wood's Medical and Surgical Monographs. Published monthly. Contents: Gonorrhœal Infection in Women; On Giddiness; Albuminuria in Bright's Disease. Volume I. Number 2. February, 1889. William Wood & Co., New York. 1889.

A Practical Treatise on Nervous Exhaustion (Neurasthenia), its Symptoms, Nature, Sequences, Treatment. By George M. Beard, A.M., M.D., etc., etc. Edited with Notes and Additions by A. D. Rockwell, A.M., M.D., etc., etc. New York: E. B. Treat. 1889.

Hand book of the Diagnosis and Treatment of Skin Diseases. By Arthur Van Harlingen, M.D., Professor of Diseases of the Skin in the Philadelphia Polyclinic, etc. Second edition, enlarged and revised with eight full page plates and other illustrations. Philadelphia: P. Blakiston, Son & Co. 1889.

Atlas of Venereal and Skin Diseases, comprising original illustrations and selections from the plates of Prof. M. Kaposi, etc., with original text by Prince A. Morrow, A.M., M.D., Clinical Professor of Venereal Diseases, etc., in the University of the City of New York. Fasciculus x. New York: Wm. Wood & Co. 1888.

Original Articles.

ACUTE PANCREATITIS.

A CONSIDERATION OF PANCREATIC HEMORRHAGE, HEMORRHAGIC, SUPPURATIVE, AND GANGRENOUS PANCREATITIS, AND OF DISSEMINATED FAT-NECROSIS.[1]

BY REGINALD H. FITZ, M.D.,

Shattuck Professor of Pathological Anatomy in Harvard University and Physician to the Massachusetts General Hospital.

Until the time of Clässen[2] the evidence of an acute inflammation of the pancreas was almost wholly theoretical, and was not controlled by any considerable number of anatomical observations. Mercury was known to produce salivation, and the watery diarrhœa following its use was supposed to be due to irritation of the pancreas.

Influenced by this and other considerations. Schmackpfeffer[3] having found certain alterations of the pancreas in a syphilitic woman who had been liberally treated with mercury, attributed her symptoms to the pancreatic changes. The latter he regarded as anatomical evidence of an acute inflammation. He describes[4] these changes as follows: "The pancreas was unusually dense, dry, and very much swollen; it was inflamed and red throughout, although more in the right than in the left side. Numerous drops of blood escaped from the cut surface. The duct was very much dilated, especially at its mouth. The gland weighed five and three-quarter ounces.

Some years later Neumann[5] stated that "death might take place within a few hours from a fatal metastasis of the buccal salivation to the pancreas. This happens when in the midst of profuse salivation the pulse sinks and quickens or the swelling of the salivary glands subsides, and salivation is replaced by a green diarrhœa, while the skin is dry and shrunken." Under such circumstances the pancreas is found decidedly swollen, although but slightly reddened.

Clässen[6] knows of no observations in confirmation of Neumann's statement, and doubts its truth. He collects, however, a half-dozen cases, among them Schmackpfeffer's, of what he regards as fatal pancreatic inflammation, and from them he establishes the symptomatology of acute pancreatitis. The views thus obtained have essentially prevailed up to the time of Friedreich's article in Ziemssen's Cyclopædia in 1875.

The first case may have been one of mercurial poisoning, the second was one of, probable, malignant disease. The third and fourth are possibly of inflamed pancreas, but the evidence is insufficient to clearly establish the diagnosis. The fifth case may have been one of aneurism, while the last two are more suggestive of malignant disease than of acute, pancreatic inflammation.

The common symptoms were deep-seated pain near the stomach, producing a peculiar anxiety, restlessness, perhaps frequent fainting. The pain bore no definite relation to the vomiting or other symptoms, and was not increased in proportion to external pressure. The vomiting was forcible, more or less greenish material being expelled. The abdomen was moderately tense, there was slight fever, and the appetite was but little disturbed and might be increased. There was a moist tongue, thirst, and constipation.

The effect of Clässen's treatment of the subject may be seen nearly thirty years later in the statement by Wardwell[7] that the prominent symptoms of acute pancreatitis are, deep-seated, dull, epigastric pain, distention, sickness, and vomiting of a clear, greenish, viscid fluid; thirst, faintness, moist tongue, constipation, and slight pyrexia.

The first step towards an essential modification of these views was made by Klebs, in 1870.[8] He preferred to say nothing about inflammation of the pancreas, but described the various lesions which have been found in and around this gland, without attempting to show their possible relations to each other. He availed himself of the cases published by Portal, Hooper, Löschner, Haller, and Klob, and of one in his own experience, to associate pancreatic hemorrhage with severe symptoms and to recognize the possibility of a hemorrhagic inflammation of the pancreas, already admitted by Rokitansky,[9] as a very rare occurrence. Klebs further recognized that this hemorrhagic inflammation might possibly result in a purulent peripancreatitis with partial sequestration of the gland.

Friedreich,[10] however, undertook to present a complete picture of acute pancreatitis more in accordance with the anatomical treatment of Klebs than with that of Clässen. He availed himself of the cases used by Klebs; in addition, of one reported by Oppolzer, and of another under his own observation. He suggested that acute pancreatitis was either primary or secondary. The former appeared to have a tendency to hemorrhage in the pancreas or in its vicinity, in which case a termination in gangrene and ichorous peripancreatitis might occur. If the acute pancreatitis became suppurative, multiple, minute abscesses were to be found, which tended to become confluent and to produce a resulting peritonitis.

The secondary variety of acute pancreatitis was either the granular degeneration found in infective diseases, or the circumscribed "metastatic" abscess. The possibility of a metastatic pancreatitis in the course of a parotitis was not to be absolutely denied, especially in virtue of the case reported by Schmackpfeffer.[11]

As there is a doubt of the existence of a pancreatitis in this case, it may be safely stated that there is no reason for admitting the existence of a metastatic pancreatitis secondary to inflammation of the parotid gland. It is evident[12] that an acute parotitis may arise during the course of a pancreatic inflammation. This single instance of association is presumably analogous to the occurrence of parotid inflammation in septic conditions of various origin.

Since Friedreich's anatomical recognition of an acute pancreatitis was based upon the consideration of four cases, he admitted his symptomatology of this affection to be neither precise nor complete. Furthermore, he seems[13] to include under the head of pancreatic hemorrhage those cases where this lesion is associated with necrosis and gangrene, and others where hemorrhage into the pancreas appears to be the sole cause of sudden death.

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[1] The Middleton Goldsmith Lecture for 1889, delivered before the New York Pathological Society, Feb. 16, 1889.

[2] Die Kraukh. d. Bauchspeicheldr., 1842.

[3] Diss. Inaug. de quibusd. Pancreatis Morbis, 1817, 26.

[4] *Op. cit.*, 25.

[5] Von deu Kraukh. des Menschen, Berlin, 1836; Clässen *op. cit.*, 192.

[6] *Op. cit.*, 193.

[7] Reynold's Syst. of Med., 1871, iii, 414.

[8] Handb. d. path. Anatomie, 1876, i. 2, 553.

[9] Lehrb. d. path. Anat. 3te Aufl., 1861, iii. 309, 242.

[10] Ziemssen's Handb. d. Path. und Therap., 1875, viii, 2

[11] P. 1.

[12] Case LVIII.

Klebs[14] had already recognized the existence of a suppurative peripancreatitis, and stated, presumably from his own observation, that, in most instances this proceeded from lymph-glands. These were either the seat of metastatic abscesses or were primarily diseased by traumatic agencies or injurious food. Such abscesses were regarded as occasional causes of thrombosis of the mesenteric and portal veins. He recognized a possible, eventual separation of the pancreas from its surroundings by the extension of the suppurative process.

He thought it possible that the case of Haller and Klob[15] already admitted as of hemorrhagic pancreatitis, might belong in this series, and regarded that reported by Gendrin as illustrative.

In the light of the observations published up to the time of his article, Klebs regarded as of doubtful existence any pancreatic abscesses which did not arise from a peripancreatitis or from a suppurating cyst.

Important evidence as to the possible method of origin of a peripancreatitis was furnished by Chiari,[16] who found a round ulcer of the stomach communicating with the cavity of the omentum. The latter contained a spacious abscess with several openings into the jejunum. Lying free within this cavity was a shreddy mass of tissue, 12 cm. long. It was brownish-black, friable, and presented the structure of the pancreas.

Four years later, Chiari published the report of a case[17] by Schlossberger, in which the sloughing pancreas was discharged through the bowels. He reported still another,[18] of earlier occurrence, in 1862. The sloughing pancreas, discharged from the bowels, was brought to Rokitansky by Trafoyer.

The next communication of especial importance in connection with the subject of pancreatic inflammation is that of Balser.[19] He calls attention[20] to the presence of nodules and patches of necrotic fat-tissue in the mesentery and in the contents of a cavity behind the mesentery. In the latter lay the pancreas also, attached only to the duodenum, and its lobules appearing as if macerated. A second case was reported by him,[21] in which there were patches of necrosis of the abdominal fat associated with similar appearances in the pancreas. In addition there was evidence of old and recent hemorrhage in the gland.

My own interest in this subject was first, particularly, aroused in 1876. At the request of Dr. Maynard, of Dedham, I made the post-mortem examination of a lady of uncertain age, not especially fat, who fell on the floor while apparently in her usual good health. She died within thirty minutes. In the meantime she complained of pain in the lower part of the chest. Her respiration became hurried, the pulse feeble: a short convulsion occurred, and death took place. The abnormal appearances found, were several nodules and patches, the largest of the volume of a walnut, of freshly extravasated blood at the periphery of the posterior portion of both, lower, pulmonary lobes. There were several patches, of considerable size, of submucous hemorrhage near the ileo-cæcal valve along the mesentery. The pancreas was thin and very flaccid, with occasional slight, subperitoneal hemorrhages. Section through the organ showed similar hemorrhages in its substance. The gland-lobules were of a reddish-gray color, the general surface spotted with white specks. Microscopic examination showed extensive fatty degenerations of the gland-cells, many fat-drops being exceedingly minute. The interstitial fat was frequently crystallized, and, at times, bundles of orange, acicular crystals (hæmatoidin?) were found.

The cœliac plexus was examined and nothing abnormal found. The heart was contracted, its cavities contained mainly fluid blood. The mesenteric veins near the cæcum were injected. The liver and kidneys were injected; the spleen and suprarenal capsules were normal. Nothing abnormal was found in the brain or heart. It was considered, at the time, that the history of the case and the appearances found were best explained on the ground of Zenker's communication,[22] which will be soon referred to more particularly.

Since then it has been my opportunity, largely owing to the zeal of Drs. Gannett and Whitney, to have seen at least a dozen examples of pancreatic hemorrhage, with or without necrosis of fat-tissue, and of necrosis of fat-tissue without pancreatic hemorrhage. I have been present at several of the post-mortem examinations at which the diseased pancreas has been found, and have demonstrated to the students of the Harvard Medical School many of the specimens which have been removed by my friends and colleagues.

Having thus been impressed with the importance of the subject, I take this opportunity of utilizing the material which has been gradually accumulated by Dr. Whitney, the curator of the Warren Anatomical Museum. The value of this material is greatly enhanced by the records of the clinical course of the disease in question, which have been furnished by those in charge of the patients. In addition, a collection of similar cases has been gathered from medical literature, which of late years has been especially prolific in this subject.

This paper will include a consideration of —

The liability of the pancreas to hemorrhage;

The association of hemorrhage with acute pancreatitis;

The occurrence of acute pancreatitis without hemorrhage; and —

The relation of acute pancreatitis to fat-necrosis.

PANCREATIC HEMORRHAGE.

Although Klob[23] regarded interstitial pancreatic hemorrhage as not rare, he found it only, and then not constantly, in extreme portal stagnation.

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[13] *Op. cit.*, 273.
[14] *Op. cit.*, 556.
[15] Case LVI.
[16] Case LVIII.
[17] Case LIX.
[18] Case LVII.
[19] Virchow's Arch., 1882, xc. 520.
[20] Case LXIV.
[21] Case XXIV.
[22] Deutsche Zeitschr. f. pr. Med., 1874, ii. 351
[23] Oesterreich Zeitschr. f. pr. Heilkde., 1860, v. 529.

Spiess, however, in 1866,[24] reported to the Frankfort Medical Society a case[25] of sudden death due to an extensive, interlobular, pancreatic hemorrhage. His observation, though unique, escaped attention.

Klebs, as already stated,[26] had associated pancreatic hamorrhage with severe symptoms, and suggested that the hemorrhage might be due, in the absence of inflammatory changes in the interstitial tissue, to the corrosive action of the pancreatic secretion.

Zenker[27] then reported three cases as of fatal pancreatic hemorrhage. This lesion, however, existed in only two of them,[28] while in the third the hemorrhage was near the pancreas, in the hilus of the spleen. In this last case, and in one of the others, there was a striking venous injection of the solar plexus. He regarded this as the immediate cause of the sudden death, in accordance with the results of Goltz's experiment of cardiac paralysis by a blow on the frog's abdomen. He found in one of his cases a flabby heart with distended, empty cavities associated with marked injection of the abdominal organs, as in the frog experimented upon.

Prince[29] then published a paper on this subject, and Draper reported[30] a series of cases of sudden death from pancreatic hemorrhage.

Virchow, however, in most recent times, has stated[31] that nothing is more rare than hemorrhage in the pancreas.

The relative frequency and absolute importance of pancreatic hæmorrhage is thus, unquestionably, a discovery of recent origin. There are, however, a considerable number of recorded cases which show that sudden and unexpected death may occur and a conspicuous hemorrhage be found in or near the pancreas as the sole, significant lesion. Such hemorrhage may occur in a previously diseased pancreas or individual, or it may take place when the person is apparently in his usual health, and the pancreas gives no evidence of any acute disease.

Both groups illustrate the liability of the pancreas to hemorrhage, but the conditions of its occurrence must vary in each.

The consideration of this series of cases shows that most of the individuals concerned were in their usual health at the time of the attack, or when last seen alive. They were invariably adults and usually beyond the age of forty, when the age was given. Some were conspicuously fat and strong, while a few were weak and thin. Although several were of intemperate habits, others were not so reported, and two were exemplary in this respect.

Two had complained of previous digestive disturbance, and one suffered from frequent abdominal pain. One had received a kick in the abdomen a week before death.

From the evidence here collected there is evidently nothing in sex, habits, condition, or exposure which will indicate the likelihood of pancreatic hemorrhage.

The cases and data are insufficient in number and detail to permit an exact, clinical picture of this affection which shall be of especial value in a differential diagnosis.

We learn that pain was an early symptom in nearly one-half of the cases: that it was usually severe, and might be intense, and was to be found in the abdomen or lower chest. Although mention is made of its presence in the epigastrium in one-fifth of the cases, this region is not conspicuously designated as the seat. On the contrary, there may be little or no pain, or merely a sense of constriction of the chest. Nausea or vomiting is but occasionally mentioned; constipation or a desire for frequent stools are still more rarely noted.

The most constant symptoms are those of collapse, and are more or less intense and more or less prolonged.

Death may take place within a half-hour after the onset of the symptoms and may be delayed for thirty-six hours. It is questionable in the latter instance whether the case should not, more properly, be included under the head of hemorrhagic pancreatitis than of pancreatic hemorrhage.

The appearances found after death are conspicuously the hemorrhage within and near the pancreas.

The gland may be of normal size, or enlarged, and its density may not be modified, or the pancreas may be flaccid, soft, and friable. The hemorrhagic infiltration is to be found in the subperitoneal tissue around the pancreas as well as in the interstitial tissue of the gland. The former may be continued into the omentum and mesentery, behind the colon, and into the perinephritic fat-tissue. The entire pancreas may be infiltrated, or either half, or the central portion alone may be conspicuously involved. The hemorrhage is usually diffused, but it may be in numerous patches, both beneath the peritoneal investment and in the interlobular tissue. The color and moisture of the cut surface indicate that the extravasation is recent. It may take place into a normal pancreas or into one which is either fatty infiltrated, or fatty degenerated, or into one which shows a granular condition of the epithelium.

In a single instance evidence of an older hemorrhage was to be found in the presence of round, orange-colored bundles of acicular cystals. In the same pancreas were also to be seen colorless, acicular cystals, probably of fat, in clumps visible to the naked eye, corresponding to the appearances to be described under fat-necrosis. The microscopic examinations of one of Draper's cases showed occasional patches of hemorrhage within the lobules, although the infiltration was essentially in the interlobular tissue.

Hemorrhages might also be found in the wall of the duodenum and cæcum, and in the lungs in a single instance.

Although the splenic artery is reported to have been tortuous in one case, there is no evidence in any of a circumscribed aneurism. The splenic vein, when examined, was free from obstruction.

The conditions found by Zenker, viz., injections of the portal venous system and of the capillaries of the solar plexus, with distended and empty cardiac ventricles, were not generally met with.

Fatty degeneration and fatty infiltration of the pancreas were not necessarily present in these cases, and frequently occur without a trace of hemorrhage.

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[24] Schmidt's Jahrb., 1867, cxxxiv. 270.
[25] Case I.
[26] P. 181.
[27] *Loc. cit.*
[28] Cases III and IV.
[29] Boston Medical & Surgical Journal, 1882, cvi. 28.
[30] Trans. Asso. Am. Phys., 1886, i. 243.
[31] Berl. klin. Woch., 1887, ix. 155.

The seat, extent, and rapidity of the bleeding suggest that it is rather arterial than venous, and no evidence of venous obstruction has been found. Such hemorrhages are most likely to be of aneurismal origin, but aneurisms have not been discovered. An embolic source has been sought for in vain. It is possible that the pancreatic secretion may have corrosive properties, as suggested by Klebs, in which case the condition should occur oftener. Suggestive evidence in favor of this view is the fact, well-known to demonstrators of anatomy, and called to my attention by my colleague, Dr. Mixter, that arterial injections are likely to break through and escape in the region of the pancreas.

Hemorrhages in a diseased or dead pancreas might be thus explained, but in the great majority of the cases collected there is no sufficient evidence of such disease. It is also possible that the hemorrhage may be of nervous origin as in the pulmonary infarctions sometimes associated with cerebral lesions.

The only fact in favor of this view is the association of such pulmonary nodules with the pancreatic hemorrhages in one case. This observation, compared with the relative frequency of pulmonary hemorrhages of apparent, central, nervous origin, makes the single instance of but little value as evidence.

That fat-necrosis is not a cause for such hemorrhage is obvious from its presence being suggested only in a single instance.

It is evident that the first step towards a more accurate knowledge of the immediate cause of this affection must lie in a more careful search for the actual source or sources of the leak.

HEMORRHAGIC PANCREATITIS.

In considering the relation of hemorrhage to acute pancreatitis, it is important to agree upon what shall be understood by the latter term.

It has already been shown that the views advanced by Clässen and his predecessors give no aid in this matter. Klebs is non-committal on account of the paucity of evidence, and Friedreich elaborated his systematic description of acute, primary, pancreatitis from the consideration of four cases. In the one pancreas were multiple abscesses; in another a bloody exudation, and infiltrated blood in the vicinity; in a third were spots of finely granular, yellow exudation with interlobular hemorrhage; while the fourth pancreas was gangrenous.

The acute inflammation of a gland, from the anatomical point of view, demands the presence of degenerative changes in the parenchymatous cells, or an exudation in the interstitial tissue, or both these factors.

The first, the parenchymatous inflammation or granular degeneration of the pancreas, such as occurs in infective diseases, or as the result of mineral poisoning, is of no immediate concern. It is the interstitial variety which, with or without associated parenchymatous changes, may be regarded as the genuine, acute pancreatitis; and it is in the interstitial tissue of the pancreas that the inflammatory exudation is to be sought. But this tissue is both fibrous and fatty, one or the other variety predominating in different individuals, and, perhaps, at different periods in life. These tissues bear a continuous relation to the peritoneum, and to the subperitoneal and retropancreatic fat-tissue. It is, therefore, most probable that an inflammatory process of this fat-tissue might arise within the pancreas, or be continued to the pancreas from some more remote place of origin. Thus a primary and a secondary, acute, interstitial pancreatitis might occur. The results in either case would be the same; the sources and progress of the disease might vary.

Whenever the anatomical evidence is insufficent to establish the diagnosis of inflammation it is permissible to utilize the symptoms for this purpose. If the general symptoms of inflammation are present and the pancreas is described as infiltrated with blood, such an association of symptoms and lesion is rather classified among the inflammations than among the hemorrhages.

The series of cases which form the basis of this part of the subject naturally fall into three groups. In the first hemorrhage is conspicuous, in the second suppuration, and in the third gangrene.

These may be designated respectively as hemorrhagic, suppurative, and gangrenous pancreatitis.

Before calling attention to the first of these groups it is desirable to exclude certain cases which have been regarded as possible illustrations of a hemorrhagic pancreatitis. Fearnside[32] reported the case of a man, æt. forty-nine, not remarkably temperate, but who had enjoyed good health till within a year, since which time deep-seated pains in the region of the stomach had existed, with occasional heat or coldness in the same region, gastrorrhœa, pyrosis, constipation, pallor, and loss of flesh. For three months before death the pains became more severe and frequent, eventually constant, generally most distressing a few hours after food. Three days before death a sudden, excruciating pain occurred, followed by jaundice and a dark-brown vomit. On the following day there was intermitting vomiting and frequent hiccough. On the day of his death he was collapsed, although his intelligence was good. The epigastric pain was severe, and on pressure between the navel and the ensiform cartilage a deep-seated transverse tumor could be felt. The pancreas was four times the normal size, and was adherent to the stomach by some firm adhesions. The neighboring peritoneum showed spots of soft and firm exudation. The greatest increase in size was in the head, which extended deeply into the right lumbar region. It was blackish-brown, pultaceous, grumous, and contained distinct blood-clots. In the more consistent portions there was no trace of natural gland-tissue. The body was firm and close in texture, of a dark-red color mottled with black lines and points, and became paler towards the lip.

The probability of this being a case of malignant disease with hemorrhage is very strong, especially as the appearances do not correspond with those to be stated later as found in hemorrhagic pancreatitis.

Rigal[33] reports the case of a man, æt. fifty-two, previously in perfect health, who suffered for seven days from intermittent fever, daily, with short remissions. The abdomen and legs then became swollen, and some pain was complained of at the right of the navel, where was a sensitive, indurated spot. Jaundice then occurred. also progressive weakness and epistaxis. Finally fever was noticed, and death took place about seven weeks from the beginning of his sickness. The pancreas was large, the head being twice the normal size. The latter was brown, both on inspection and section. On microscopic examination there was advanced fatty degeneration, and numerous crystals of margarine were seen. There was also fatty degeneration of the right kidney and an enlarged and friable spleen. The liver was normal in size and consistency, the bile-ducts and gall-bladder were dilated.

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[32] London Medical Gaz., 1850, xlvi. 967

[33] Gaz. des Hôp., 1869, xlii. 562.

This case is excluded from the list which is to follow, from the inability to determine the nature of the changes in the head of the pancreas. At the same time it is admitted that certain characteristics are presented which render it not unlikely to have been an instance of the disease under consideration.

The case reported by Huber[34] must be excluded from those of hemorrhagic pancreatitis. His patient died within twenty-four hours after the onset of an attack of severe, epigastric pain. There was a tumor of the head of the pancreas surrounding the common duct, which was passable. The tumor descended into the mesentery. It looked like Förster's carcinoma simplex, but had many pigmented and hemorrhagic spots.

The case of pancreatic hemorrhage reported by Challand and Rabow[35] is also not wholly clear with reference to its relation to pancreatitis.

The patient, sixty-two years of age, an insane woman and inmate of an asylum, had an ovarian cystoma for several years.

She was found at bedtime pale, and groaning feebly, without known cause. The next day she was collapsed. She complained of suffering, especially in the lumbar and epigastric regions. The pain was not increased on pressure and there was repeated vomiting. She remained in a condition of extreme weakness, with frequent vomiting and groaning, a quick pulse and a subnormal temperature till her death on the fourteenth day. The pancreas appeared doubled in size. On tearing its tissue a certain quantity of thick, black blood escaped. In making a longitudinal section a cavity as large as the fist was opened, filled with large, black clots. The pancreatic tissue was dark brown, and so softened and friable that it was impossible to determine the point of origin of the hemorrhage. The duct was moderately dilated and the tissues in the immediate vicinity of the gland were strongly discolored with blood.

This case is not included among those of hemorrhagic pancreatitis, since the described appearances do not correspond with those usually found and the possibility of a pancreatic cyst or of an aneurism is not eliminated.

The list of seventeen cases includes the instances of associated pancreatic hemorrhage and inflammation which present common features of symptoms and anatomical changes. Of these cases three have occurred within the vicinity of Boston; two of these are now, for the first time, reported, and the gross and microscopic specimens from the latter are submitted to your inspection.

I am indebted to Drs. Pinkham and Whitney for their notes of Case XXVIII. The patient was a man, forty years of age, by occupation a caterer. He was liable to attacks of acute indigestion, and, for a year or more before his death had suffered from general malaise and debility. His discomfort was attributed to indigestion. His last illness was of six days' duration and was characterized by epigastric pain, vomiting, and by great cardiac weakness. Death occurred from heart-failure after the pain and vomiting had ceased.

There was a large quantity of abdominal fat, and the post-mortem examination was negative, with the exception of the appearances described below. The pancreas was very large, weighing, with some adherent fat, four hundred and ten grammes. The cut surface showed everywhere dark-red streaks and patches between the lobules and separating them to a slight degree. On microscopic examination there was no evident alteration of the gland-cells. A considerable quantity of free blood-corpuscles was found in the intralobular tissue. The fat-tissue was everywhere filled with small, opaque-white spots, often with a well-defined, dark border. Their diameter varied from a few millimeters to several centimeters. They were present within the pancreatic fat-tissue and in that outside the organ. Microscopic examination showed that the fat-tissue was changed to a finely granular mass in which were numerous, very fine, acicular cystals. In the vicinity of the patches of necrotic fat-tissue were found colonies of micrococci.

For the purposes of this paper a more extended. microscopical examination has been made of the above pancreas.[36]

There is an extensive inter- and intra- lobular infiltration of fat-tissue. The interlobular fibrous tissue is increased in places and the contained duct is widely dilated.

The pancreatic lobules are, at times, diffusely stained of a brownish-yellow color. Certain lobules contain clusters of orange-colored, acicular crystals, especially in the vicinity of the fat-tissue.

The interlobular fat-tissue shows circumscribed, as well as diffused, hemorrhagic infiltration. There is, in addition, an excessive accumulation of round cells, in places wholly cellular, again fibrino-cellular, entirely replacing the fat-tissue. There are sharply defined islets of fat-tissue in which the individual cells are indistinct, without nuclear staining, the whole filled with acicular fat-crystals. The border is often sharply defined by a zone, in which are small, round clumps of orange-colored, acicular crystals, and outside of which a line of round-celled accumulation is frequent. Bacterial clumps and venous thrombi are present.

The described changes in the interlobular fat-tissue are likewise seen in the parapancreatic fat.

The following is the history of Case XXXIII., for the notes of which I am indebted to Drs. J. J. Putnam and Whitney. The patient was a gentleman, forty-eight years of age, who had been hemiplegic for several years. He was well nourished but not excessively fat. He had suffered from several attacks of pain in the region of the stomach, with chilly sensations, from which he recovered in the course of twenty-four hours. They were usually attributed to indigestion, but no exciting cause was ever discovered. He had one severe attack of this sort a year before his death, and became collapsed, and was covered with cold sweat. His mind was dulled and his talk somewhat incoherent. He rallied under the use of stimulants, and in the course of a day or two appeared in his usual health.

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[34] Deutsches Arch. f. klin. Med., 1875, xv. 455.

[35] Bull. Soc. Med. de la Suisse Romande, 1877, xi. 345.

[36] Unless otherwise specified, the sections from the specimens hardened in alcohol are made with a microtome, stained in hæmatoxylin, carmine, or aniline blue or brown, dehydrated, and mounted in glycerine or balsam.

At 5 A.M. he was seized with a severe stomach-ache, and a few hours later vomited, with temporary relief to the pain. Throughout there was considerable dull, epigastric pain and occasional nausea and vomiting. In the evening, immediately after vomiting, he suddenly became collapsed. There was constant pain throughout the night, and restlessness. During the second day he improved somewhat, although annoyed by hiccough. He vomited chiefly mucus, in which were found several small, dark-red lumps about the size of peas.

Early in the third day he was very restless, cold, and livid, his breathing rapid and his pulse almost imperceptible. He was conscious but anxious, and died within six hours after the collapse became extreme.

The pancreas was about twice the normal size; on section, of a dark-red color mottled with opaque white spots and patches, which lay between the lobules of the gland. These changes were most marked in the body of the gland, the head being relatively normal. The fat-tissue near the pancreas, that in the root of the mesentery, and in the meso-colon near the spleen was of a dark-red color. In places it was soft, discolored, and foul smelling. Numerous opaque, grayish-white spots were visible beneath the mesenteric peritoneum. The splenic vein contained a soft, dark, adherent thrombus which was continued into some of the pancreatic veins. Recent thrombi were also found in some of the mesenteric veins. The spleen was slightly enlarged, the pulp increased and dark-red.

There was no infiltration in the vicinity of the solar plexus and semilunar ganglion.

There was no evidence of a peritonitis.

In the microscopic examination of the hardened pancreas there is seen a sharp differentiation of the section into three zones.

The intermediary zone represents the interlobular fat-tissue which is continuous with that around the pancreas. It is not only extensively infiltrated with blood, but is often transformed into a porous structure from the apparent destruction of fat-cells. Elsewhere it contains a fibrillated meshwork, finely granular material, bacteria, and numbers of acicular fat-crystals. There is also an occasional round-celled infiltration of this fat-tissue between the relatively normal portions of the pancreas and the hemorrhagic and necrotic interlobular fat-tissue.

On the one side of this intermediary zone the acini are distinctly defined and the nuclei clearly stained. Occasional lobules are seen with granular epithelium and indistinct nuclei. There are, in places, an intra- and inter- lobular infiltration of blood-corpuscles and numerous accumulations of round cells. The interlobular tissue shows a fibrillated meshwork, apparently clotted fibrine; in the smaller ducts are numerous leucocytes.

On the other side of the hemorrhagic zone, although the lobules are distinct, the borders of the acini are often confused. The cells are granular, frequently not differentiated, and there is no staining of the nuclei. At times the lobules are replaced by a granular detritus or the cells are widely separated from each other. Here and there among these necrotic acini are stained islets, apparently bacterial colonies, thrombotic veins, and, more rarely, small accumulations of round cells.

At the edge of the pancreas is a large venous thrombus containing innumerable bacteria.

Of the seventeen cases of hemorrhagic pancreatitis fourteen were males and two were females, the sex of one person not being stated. Their ages were as follows: —

Years of age.	Number of cases.
From 25-30	1
" 30-35	2
" 35-40	1
" 40-45	4
" 45-50	1
" 50-55	1
" 55-60	2

One was described as a young adult, two as adults, and nothing was stated concerning the age of two.

The patients were usually in good health at the time of the attack, a few of them being conspicuously strong and robust. Nearly one-half of them were abundantly or superabundantly provided with fat-tissue.

A small fraction, nearly one-sixth, was addicted to the abuse of alcohol. Nearly one-half of the cases suffered from previous attacks of indigestion.

These attacks were usually characterized by pain, which was colicky, gastric or abdominal, and so severe in one instance as to suggest impending perforation. Vomiting, either watery or bilious, or both, was noted. Nausea, belching, and diarrhœa were recorded. Jaundice occurred in a single instance.

It is obvious from the above statement that the previous digestive disturbances were rather gastric or gastro-duodenal than enteric.

The immediate attack began in the great majority of cases, with abdominal pain, usually without known cause, though rarely some irregularity in diet appears to have been an immediate predecessor. The pain was violent, intense, or severe, either constant or paroxysmal. Its seat was usually in the upper abdomen, and, in one instance, was stated to have followed the course of the pancreas; subsequently, in one-fifth of the cases, the abdominal pain became general.

The initial pain was usually followed by vomiting, more rarely by nausea alone. In one case there was a conspicuous record of no vomiting. The vomiting was constant, repeated, or occasional. It might be copious. It was bilious at times, or black, and contained, in one instance, dark-red clumps the size of peas.

Constipation was a symptom of frequent occurrence and a diagnosis of intestinal obstruction was made in three instances, in one of which laparotomy was performed. The occurrence of diarrhœa was noted in but one case. Hiccough and albuminuria each were reported in a single case.

Fever was an inconstant symptom. When present it was of early occurrence, and might be high on the second day. On the contrary, the temperature might be normal on the first day and subnormal on the following day. Delirium was present in three cases.

A tympanitic swelling of the abdomen was of no infrequent occurrence. It was usually general, or in the upper abdomen, and was rarely localized in the lower abdomen. In one case, thought to be of intestinal obstruction, a swollen, intestinal convolution was to be felt in the right side.

Symptoms of collapse were almost invariably present, and usually directly preceded death.

This occurred as follows: —

On the 2nd day in.......... ....3 cases.
" 3rd " ....5 "
" 4th " ....3 "
" 5th " ....1 "
" 6th " ....1 "

It took place after a few or several days, each in one case.

The diagnosis lay between intestinal obstruction, perforative peritonitis, and an irritant poison.

The pancreas was found enlarged, either throughout or at one extremity, usually at the head. The gland was frequently doubled in size, and might seem still larger when abundant fat-tissue was present. The enlargement has been compared to the size of a man's arm.

The gland was generally dense, sometimes friable, and has been noticed to be of diminished consistency.

The existence of hemorrhage was usually suspected by the appearance of the surface, which is of various shades of red. On section, however, the color may be dark-red, reddish-brown, violet, reddish-black, or even black. The modification in color may be uniformly distributed, or lie in patches, or in specks. The patches correspond with nodules which may project above the surface. These discolored patches may show white specks or streaks, and the red color may lie in the interlobular tissue of the pancreas.

The color of the section may be affected by the presence of associated alterations, one of which is accidental, the other may be incidental. The former is due to an excessive quantity of fat-tissue in the pancreas, sometimes appearing to form nodules as large as hazel-nuts and to treble the size of the gland. Bands and spots of a translucent yellow are thus produced which are mottled with shades of red. The incidental appearance is due to the presence of opaque white specks, spots, and streaks, which are generally known, since the publication of Balser's [37] article, by the term fat-necrosis.

These were seen in six of the cases, and it is not improbable that the granular exudation described by Löschner may have been of the same nature.

The pancreatic duct may contain a bloody, ichorous fluid, and its branches may be plugged with clotted blood. The duodenum and jejunum may show swelling, injection, and ecchymosis.

The hemorrhagic infiltration may be found beyond the pancreas, both in the parapancreatic tissue, mesentery, meso-colon, and in the omentum. It may extend downwards behind the descending colon, nearly to Poupart's ligament, and may be found at the outer border of the left kidney.

The splenic artery and vein are usually free from changes. The latter may contain a thrombus. The portal vein has been found free from thrombosis.

The conditions of the other organs is essentially negative.

The heart may contain liquid blood, or a differentiated clot may be found in the right ventricle.

The spleen may be small, with wrinkled capsule, or it may be slightly enlarged and injected.

The peritoneum usually shows no alterations, although evidence of recent peritonitis may, at times, be found.

The microscopical changes consist essentially in the evidence of an extensive hemorrhagic infiltration limited more particularly to the interlobular tissue. Also in the presence of cellular and fibrino-cellular formations in the same tissue. Smaller accumulations of round cells and hemorrhages may be found within the lobules, and the ducts may be filled with indifferent cells. The appearances characteristic of a coagulative necrosis, also thrombosis of the smaller veins, are to be found in many lobules as early as the third day, as are all the other changes above described. The spongy condition of the hemorrhagic region and the numbers of associated bacteria are indicative of putrefactive changes. Whether these are of ante- or post- mortem origin the evidence at hand does not decide.[38] Finally, the discovery by Osler and Hughes' may be mentioned, where an increased number of leucocytes was found in the semilunar ganglia, and an indistinctness and cloudiness of the ganglion-cells.

In summing up the clinical and anatomical characteristics of these cases we have the following brief description of an affection which wholly justifies the term acute, hemorrhagic pancreatitis.

It is a disease which may take place without any well-defined cause, but is most likely to occur in persons who have had previous attacks of gastric or gastro-duodenal dyspepsia.

It begins with intense pain, especially in the upper abdomen, soon followed by vomiting, which is likely to be more or less obstinate, and not infrequently by slight, epigastric swelling and tenderness, with obstinate constipation.

A normal or subnormal temperature may be present and symptoms of collapse precede by a few hours, death, which is most likely to occur between the second and fourth days.

The gross lesions are due to hemorrhage in and about the pancreas, and the microscope shows cellular and fibrino-cellular exudations in its interstitial tissue and necrosis of its lobules.

(To be continued.)

A CASE OF ACUTE FATAL NEURITIS OF INFECTIOUS ORIGIN;

WITH POST-MORTEM EXAMINATIONS.[1]

BY JAMES J. PUTNAM, M.D.

Changes in the Deltoid Muscles and Diaphragm.— Pieces of the deltoid muscle were examined, both in a fresh state, with and without osmic acid, and after hardening in Müller's fluid. In the fresh specimens the only change observed was that now and then a fibre was seen that had entirely lost its transverse striation, the rest of the fibres being apparently perfectly healthy. The examination of the hardened specimens was more fruitful. The cross-sections showed the size of the fibres to be uniform and normal. There was no trace of the vacuolization or so-called serous atrophy, and apparently no deposition of fat either within or between the muscular fibres.

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[37] *Loc. cit.*

[38] Case XXIX.

[1] Concluded from page 163.

The morbid changes were the following: —

First, loss of transverse striation, limited in extent. sometimes occupying only a small part of a fibre, the appearance presented being that of fine granulation, sometimes with traces of transverse striation here and there in the midst of the altered substance.

Second, marked infiltration of cells in the connective tissue and around the vessels.

Third, a localized increase in number of the muscle nuclei, which sometimes. but not always, appeared to be more marked at the place where the transverse striation was wanting.

Fourth. the intramuscular nerves, as far as could be judged from the few which appeared in the sections, were almost entirely destroyed.

Out of the whole number of fibres making up a small nerve bundle, one or two atrophied axis-cylinders might be seen, as dark, shining points, in picrocarmine sections. the rest of the bundles being represented by altered fragments of myeline with numerous, granular, round cells lying amongst them.

Fragments of the diaphragm were examined, fresh and with osmic acid, and granular fibres without transverse striation were here and there noted.

Of the central nerve system, the medulla and spinal cord were examined. The brain was preserved, but has not been examined.

In the medulla and spinal cord the following changes were observed. First, in the membranes and in many of the nerve-roots, both anterior and posterior, there was an infiltration of round cells both around the vessels and amongst the fibres, and in other respects the nerve-roots were more or less changed, the degree of alteration being less than in the peripheral nerves.

This infiltration was rather greater in the lower dorsal region of the cord than in the lumbar or cervical region, or most parts of the medulla.

The blood-vessels, both of the membranes and of the central axis, were everywhere crowded with blood. This I take to have been, in part, the result of the asphyxia with which the patient died; in part the sign of an inflammatory process.

Within the substance of the cord the vessels were surrounded here and there with a moderate number of cells contained in the perivascular sheath, and the central canal was filled with similar cells.

The nerve-cells, so far as I could judge, were essentially normal. Here and there was one with a shrunken or otherwise altered nucleus; but there was nothing, in my opinion, that might not be accounted for by post-mortem changes. The only other pathological appearance in the cord was that here and there at the periphery, especially in the lateral column near the post. cornua, and in the ant. column in the nerve-root zone, greatly enlarged axis-cylinders staining feebly with carmine.

The condition of the medulla was carefully examined, in the hope of finding a satisfactory cause for the multiple pulmonary hæmorrhages. There was a general filling of the vessels, large and small, and here and there an accumulation of lymphoid cells in the perivascular sheaths, and occasional slight hæmorrhages from the capillaries and smaller vessels.

These disturbances of circulation were, in most of my sections, more marked in and near the sensory nucleus of the vagus and glossopharyngeus than elsewhere, and the hæmorrhages were in fact only seen in this neighborhood. It could not be asserted, however, that the nucleus appeared to have been materially injured.

The vagus nerve roots were affected in varying degrees, and one section shows a more excessive infiltration than perhaps any other nerve-root that I have seen.

It is easy to arrange this case in its proper pathological position up to a certain point. It evidently belongs with such cases as were reported by Eichhorst in Virchow's Arch., vol. 69, 1876, and Rosenheim in the Arch. f. Psych., vol. 18, which the latter has discussed so ably; and with the other acute fatal cases of multiple neuritis, none of which, I think, have been of shorter duration than this.

In Rosenheim's and Eichhorst's cases, to be sure, hæmorrhoids existed in the nerves, visible to the naked eye, indicating a more intensely active process than here. On the other hand, nothing could be more intense than the congestion in this case; and the evidences of minute hæmorrhages and cellular infiltration were more extensively present than in most of the other cases, involving the muscles, spinal roots, membranes, and even the central nervous axis to a certain extent, as well as the nerves.

It would be interesting to know whether, if the patient had not died, the spinal changes would have assumed a greater prominence, and a poliomyelitis or a diffuse myelitis have developed itself. Certainly the topography of the lesions suggests this possibility; but it is to be noted, as regards the question of poliomyelitis, that the posterior nerve-roots were quite as much affected as the anterior. The facts that the changes in the white columns (enlargement of axis-cylinders) were mainly confined to the periphery, and more marked in the neighborhood of the nerve-roots than elsewhere, but they did not seem to occur in the posterior columns. The amount of accumulation of lymphoid cells in the perivascular sheaths of the central gray matter was perhaps not great enough to count as the first step in an inflammatory process, though it may have been of that character; but, to say the least, one can hardly doubt that it would have taken little more to precipitate such an event, especially in view of the fact that in the medulla minute hæmorrhages had actually occurred.

The questions of chief importance in connection with this case are, first, as to its etiology, and especially if we can gain through it any light upon the supposed toxic origin of generalized neuritis; next, as to whether these acute, fatal cases exhibit clinical features which will enable us to detect them at their onset.

With regard to the first point, the reasoning, as clearly expressed by Rosenheim, and indorsed by

Leyden in his recent address before the Militärärtzliche Gesellschaft of Berlin, is that the great majority of these cases are truly of toxic origin, the source of the poison being the bacteria of tuberculosis or other constitutional disease, or some mineral or other poison. The bacteria are, however, not supposed to themselves be present in the nerve, but only the poisonous substances to which their growth gives rise.

In this way the distinctly infectious cases are brought into a parallel with the cases due to metallic poisoning.

Strümpell, moreover, in a recent paper upon degenerative changes in the spinal cord, although not speaking especially of neuritis, suggests another method in which these processes of poisoning may be started or propagated, namely, through the action of the products of decomposition of the nervous tissues themselves. Dr. Spitzka suggested last year a similar cause for the outbreak of delirium grave.

In Rosenheim's case it was believed that the primary source of the infection was tuberculosis, with which the patient was affected, although at the time of his attack in good nutrition; and he further remarks that, in his opinion, scarcely a case of multiple neuritis has been observed in which no infectious constitutional disease was present. With this view I cannot wholly agree; nor is it maintained, so far as I can see, by Leyden, who himself reports the onset in one of his rapidly fatal cases as being apparently due solely to a condition of exposure and fatigue.

In my case the patient was not the subject of any contagious disease, so far as could be ascertained, and the wetting to which he was exposed was the only cause which could be discovered. Nevertheless, the pathological signs of infection are even stronger in my case than in Rosenheim's and others. In them those signs consisted almost solely in the acute onset and generalized character of the disease, together with the fact that hæmorrhages were present in the nerves. In my case, a marked hyperplasia of the spleen was also present, such as has been observed in several cases of Landry's disease, but not often and never to this extent, so far as I know, in cases of multiple neuritis. In Rosenheim's case the spleen was reported as measuring twelve centimeters in length, and being soft in consistency.

To what cause to attribute the multiple and nodular hæmorrhages scattered through both lungs, in the present case, I am unable to decide. In view of the absence of hæmorrhages in other regions of the body it would be hardly probable that those were due to the local action of the toxic agent, although this is not to be set aside. It seems more probable that they were of the same origin with the multiple hæmorrhages described originally by Brown-Séquard as due to certain injuries of the medulla, and probably of vaso-motor origin. It is possible that the neuritis of the vagus nerve may have given rise to them, although, so far as I know, such a result has not previously been demonstrated.[2]

It is noteworthy that in this, as in other important cases of similar kind, the toxic agent, whatever its character, has not given sign of its presence in a diffuse way, but only here and there in foci of limited extent. This is very likely due to the fact that the means of examination at our command do not enable us to detect the first signs of toxic influence. Even if we had any such evidence as that afforded by the examination in Landry's disease, which seems to be universally considered as most probably of infectious origin, to show that loss of function may precede noticeable alteration in structure, yet we should still, from abundance of facts, be ready to consider that this was possible.

The fact that such a large proportion of the nerve fibres in the affected districts preserved a healthy appearance cannot be taken as a proof that they were performing their functions in a normal manner.

It would not be out of place, before leaving the subject of infection and its possible sources, to refer to the group of symptoms characterized as a new infectious disease and described recently by Weil and others in the Deutsches Arch. f. Klin. Med., 1887, 1888.

Taken as a whole, this is not to be confounded for a moment with neuritis, the high temperature and the jaundice characterizing it as belonging in a different category. It is, however, noticeable that in several of the cases, severe muscular pain and other signs of alteration of the peripheral nervous system were present.

As regards the clinical aspects of the case, I would only mention one or two points.

In the first place, the absence of fever throughout the sickness is noteworthy. This was also noted in Rosenheim's case, and referred to by him as being sometimes present and sometimes absent in the other cases that he describes.

The mode of death seems to have been by respiratory rather than cardiac paralysis. At any rate, the respiratory symptoms were the striking ones; and although shortly before death the pulse had risen to 120, it is reported by Dr. Morris as having been full and regular, while the respiration was scarcely perceptible.

The distribution of the muscular symptoms deserves a moment's comment. Pierson has advanced the opinion that the paralysis of the cranial nerves is characteristic of the acute cases. This, however, is not indorsed by Rosenheim, who points out, very properly, that these paralyses are seen also in chronic cases, and not necessarily in acute cases only, although when present they indicate a wide generalization of the disease, and may be of bad import. In the present case, the signs of paralysis of the cranial nerves which were noticed, consisted in the difficulty in swallowing and the tenderness over both facial nerves.

The fact that the left shoulder muscles were so early and so severely affected was to me of special interest, because I have been recently collecting cases in order to test the diagnostic value of this distribution of symptoms. There seems to be no doubt that although the extremities are usually the first to be involved, in the multiple neuritis of every cause, yet the larger muscles uniting the limbs and trunk are sometimes affected very early.

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[2] Otto Dees (Arh. fur Psych., etc., 1888, p. 97), the latest writer on the anatomy and physiology of the vagus nuclei, mentions incidentally as his opinion that the large "dorsal" nucleus is vaso-motor in function. It cannot, unfortunately, be stated whether in the present case the fibres and ganglia of the sympathetic system were healthy or diseased.

Finally, I will call attention to a point which should, perhaps, have guided us to the recognition of the serious import of the case, which was early presented, namely, the restless, anxious, and agitated mental condition of the patient, which seemed at first out of proportion to the severity of his symptoms.

THE VALUE OF MERCURIC CHLORIDE AS A PRACTICAL DISINFECTANT.

A REPLY TO DR. V. C. VAUGHAN.

BY WILLIAM B. HILLS, M.D.,
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THE Committee on Disinfectants of the American Public Health Association, in their report published in 1885, recommended, among other substances, mercuric chloride as a suitable agent for certain processes of disinfection. As a result of their conclusions this substance has since occupied a prominent place in the list of disinfectants employed in this country, replacing to a large extent all others for certain purposes. At the annual meeting of the Massachusetts Medical Society, held in June last, I presented, under the above title, a paper which subsequently appeared in the pages of the JOURNAL,[1] in which I called attention to certain chemical properties of mercuric chloride which had been disregarded by the committee in their investigations: properties which were likely to render this substance unreliable for some of the purposes for which it had been recommended by this committee: and I further characterized the report of the committee as contradictory, obscure, and, in general, unscientific, so far as it related to mercuric chloride. In my paper I suggested that the failure to take into consideration the chemical changes this substance undergoes when it is added to the material to be disinfected was due to ignorance regarding any such changes or to forgetfulness arising from hasty investigation. But a recent article[2] by Dr. V. C. Vaughan, of Ann Arbor, Mich., a member of the committee, in which he criticises my paper, and defends the conclusions reached by the committee, suggests very strongly that, while ignorance or forgetfulness were probably in part responsible for their omissions, there may have been in addition a willingness to suppress or misrepresent such facts as might have an unfavorable bearing on the conclusions published by them. I am well aware that this is a severe criticism. To show that it is a just one, I propose to notice the points raised by Dr. Vaughan in his paper, considering them as nearly in their order as possible.

In my paper I stated that corrosive sublimate "undergoes chemical changes, when brought into contact with organic matter. It is immediately converted by albumen to the insoluble albuminate of mercury. For this reason, albumen is recognized as the most efficient antidote in cases of poisoning by corrosive sublimate." These statements Dr. Vaughan denies. He maintains first, that the albuminate of mercury *is* soluble in solutions containing organic matters. "I endeavored," he says, "to show in the report, which Dr. Hills criticises, that the albuminate of mercury *is* soluble in solutions containing organic matter," and he then states that I place my opinion regarding this question against his (Dr. Vaughan's) experience. I have looked carefully through the report of the committee in search of the experience which Dr. Vaughan refers to, and find that it comprises *one* experiment in which he shook up mercuric oxide with albumen, filtered, and detected mercury in the filtrate. This is all very well so far as it goes. Dr. Vaughan does not however, tell us *how much* mercury the filtrate contains; but as he says a little later that the albuminate is freely soluble in an excess of albumen, he evidently intends his readers to infer that the amount was large. If Dr. Vaughan will investigate this matter quantitatively he will find that the amount of albuminate of mercury thus dissolved in albumen is comparatively small. Dr. Vaughan says that the albuminate of mercury in solution is diffusible. Very likely, so long as it undergoes no change: but as I said in my first paper, it is likely, in masses of decomposing excreta, to be at once converted to the insoluble sulphide of mercury by the sulphuretted hydrogen present. This last statement, which Dr. Vaughan also denies, I shall refer to later.

Dr Vaughan then quotes Merck, and Nothnagel and Rossbach, and gives the formula of Filehne's preparation to support his own statement that the albuminate is soluble in an excess of albumen. Filehne's solution is not, however, a solution in an excess of proteids. The albuminate in this is held in solution chiefly by ammonium chloride, in which it *is* soluble. Dr. Vaughan says "Filehne's solution contains more than two and a half drachms of the bichloride. This amount would hardly be called very small." These statements, which are well calculated to deceive the careless reader, furnish a good illustration of the peculiar methods employed by Dr. Vaughan in the discussion of this subject. Why does not Dr. Vaughan complete the statement, instead of leaving it in such a form that it may create a misunderstanding in the minds of his readers, — and say that Filehne's solution contains two and a half drachms *in each* 2250–4500 *cubic centimeters*, approximately (assuming that he gives the strength correctly), and that it is a solution of albuminate in ammonium chloride essentially? Evidently because these facts, when fairly stated, do not support his assertion that the albuminate is freely soluble in an excess of albumen. That they may *appear* to do so he suppresses a part of the truth, trusting apparently that such suppression may escape the reader's notice. Such methods, other instances of which appear in Dr. Vaughan's article, do not appear well in the discussion of scientific questions. Dr. Vaughan says: "When Dr. Hills says that albumen is recognized as the most efficient antidote in cases of poisoning by corrosive sublimate, *on account of the insolubility of the albuminate of mercury*, he teaches a doctrine which, I must admit, is wholly new to me." Dr. Vaughan has, presumably, never investigated the solubility of the albuminate of mercury himself, but has accepted the statement of Nothnagel and Rossbach without any question. This idea that the albuminate of mercury is freely soluble in excess of albumen is one the origin of which I am not quite certain of. Christison, Tardieu, Wharton, and Stillé, and Taylor all accept it, but they give no authority for it. Orfila has been quoted by some writers as an authority. But what Orfila says is this: "It dissolves slowly and *in small quantity* in albumen."[3] In Storer's "Dictionary of Solubilities," Melsens is quoted as the authority. Melsens says,[4] "This precipitate" (referring to the albuminate of mercury) "is soluble in albumen, etc." It is not quite clear whether he bases this statement on his own experiments or not, but apparently not. The idea is evidently one which originated many years ago, and which has been accepted by a few more recent writers without investigation. But Dr. Vaughan will doubtless admit that very many of the statements made by the chemists of forty or more years ago have failed to stand the test of more recent investigations. Examples are so numerous and the fact so well known that it is unnecessary to particularize any further than to say for the information of our readers that the statement that the albuminate of mercury is freely soluble in albumen belongs in this class. In my own investigations I have never found the albuminate more than slightly soluble in an excess of albumen. Possibly Dr. Vaughan may not be disposed to accept my conclusions. As he has given considerable prominence to the question in his criticism of my paper, I will call his attention to a few authorities. Woodman and Tidy[5] say that their experiments do not confirm the opinion that the albuminate is soluble in excess of albumen.

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[1] August 25th, 1888.
[2] Boston Medical and Surgical Journal, January 3, 1889.

Van Hasselt[6] says albumen occupies the first place as an antidote, since it forms with corrosive sublimate an insoluble albuminate; and further, that the quantity of albumen need not be limited, since the albuminate is not so easily and quickly dissolved as has been supposed. Mulder[7] says that a solution of the albuminate of mercury by albumen alone cannot be effected. Husemann[8] says albumen is the most important antidote on account of forming an insoluble precipitate with corrosive sublimate. Miller[9] says that the compound which albumen forms with corrosive sublimate is a sparingly soluble compound, and that it is for this reason that the white of eggs is the best antidote in cases of poisoning with corrosive sublimate. Wormley[10] says: "Of the various antidotes that have been proposed in poisoning by corrosive sublimate, albumen in the form of white of egg seems to be much the most efficient." "It should be given in large quantity." "The solid coagulum resulting from the precipitation of the poison with albumen, *which is one of the most insoluble compounds of this kind,* etc."[11] Dr. Vaughan will hardly question these authorities. If now he will investigate the subject for himself, he will doubtless find occasion to modify his present views somewhat, and will perhaps be willing to acknowledge that the well-known value of albumen as an antidote in cases of poisoning by corrosive sublimate *is* based on the comparative insolubility of the albuminate of mercury.

Dr. Vaughan says that I (Dr. Hills) have suggested the idea that the albuminate of mercury is not absorbed by the stomach, and then proceeds to criticise this assumed suggestion. In fact I did not refer in any way to the question of its absorption, and there is no statement in my paper which can in any manner be interpreted as referring to it. I said that albumen is the antidote to corrosive sublimate in the way of illustration, and Dr. Vaughan doubtless so understood it. The after-treatment in cases of poisoning by corrosive sublimate, as well as the manner of absorption of mercurials, are wholly foreign to the question under discussion.

Dr. Vaughan next takes exception to the statement made by me in my first paper that whatever albuminate of mercury is dissolved is likely to be converted at once to the inert sulphide by the sulphuretted hydrogen present. He says: "Here Dr. Hills is again wrong. *Sulphuretted hydrogen does not decompose the albuminate of mercury*" (italics mine). "Every toxicologist knows this, and destroys the organic matter before he attempts to precipitate mercury from solutions containing proteids. In the report of the committee, where I show that the albuminate of mercury is soluble, I state that the organic matter was destroyed by potassium chlorate and hydrochloric acid, *after which* the mercury was precipitated with sulphuretted hydrogen. Nothnagel and Rossbach say that from the albuminate of mercury one cannot precipitate the metal with sulphuretted hydrogen until the organic matter has been destroyed. If sulphuretted hydrogen precipitates mercury from proteid solutions the mercury so precipitated is not combined with albumen, and the occurrence of such a precipitation shows that the mercury exists in excess above that taken up in the formation of the albuminate. The albuminate of mercury is not easily decomposed." Dr. Vaughan is altogether wrong in his statement that sulphuretted hydrogen does not decompose the albuminate of mercury. It is true that the toxicologist destroys the organic matter of tissues and fluids before he attempts to precipitate metallic poisons with sulphuretted hydrogen. But it is equally true that organic matter does not necessarily interfere with the precipitation of mercury as sulphide. Christison, for instance, says that in mixed organic fluids the action of sulphuretted hydrogen in precipitating mercury is not liable to be prevented. Reichardt says it is unnecessary in testing the urine for certain poisons, mercury included, to destroy the organic matter before precipitating with sulphuretted hydrogen. In his own single experiment which he refers to, Dr. Vaughan could just as easily and much more quickly have detected mercury without destroying the organic matter. For the simple purpose of detecting the presence of mercury the destruction of organic matter was not necessary. The albuminate of mercury *is* immediately decomposed by sulphuretted hydrogen or ammonium sulphide. I have repeatedly subjected to the action of sulphuretted hydrogen pure albuminate of mercury suspended in water, a dilute solution in excess of albumen, prepared as Dr. Vaughan prepared his solution, by shaking mercuric oxide with albumen, and Merck's solution. In every case the decomposition was almost instantaneous. The last two solutions, it will be observed, are the same solutions which Dr. Vaughan has referred to in his paper as solutions of albuminate of mercury.

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[3] Traité des Poisons, 3rd edition, 1827, page 245.
[4] Annales de Chimie et de Physique, 1851, page 180.
[5] Forensic Medicine and Toxicology, page 202.
[6] Handbuch der Giftlehre, page 300.
[7] Quoted by Van Hasselt and Husemann.
[8] Handbuch der Toxikologie, page 883.
[9] Inorganic Chemistry.
[10] Micro-Chemistry of Poisons, 2nd edition, page 336.
[11] Ibid., page 355. Italics mine.

If he will subject them to the action of sulphuretted hydrogen or ammonium sulphide, he will find the results very convincing, though possibly not altogether satisfactory from *his* point of view.

"Again," to quote Dr. Vaughan, "Dr. Hills thinks that the alkalies in decomposing matter would precipitate the mercury." My statements with reference to this point were the following: "But such decomposing masses (referring to excreta) are constantly disengaging ammonia and sulphuretted hydrogen, both of which convert corrosive sublimate into insoluble compounds, etc.," and "decomposing excreta also contain alkaline carbonates, phosphates, urea, and doubtless many other substances which react with corrosive sublimate, and destroy its efficiency; for there is no reason for believing that any of the resulting compounds have any disinfecting power;" and "the excess, if any (referring to corrosive sublimate), is in turn converted to inert compounds by the albuminous material, ammonia, sulphuretted hydrogen, or other substances, etc." Dr. Vaughan does not, and cannot deny, the truth of these statements. They are well-established facts, which have been known for years. But to admit them would be to admit the existence of serious objections to the efficiency of corrosive sublimate. He therefore very ingeniously says "if common salt be added to an alkaline solution of albumen, mercuric chloride will then fail to produce any precipitate." That is, he endeavors to convey the idea that I made a statement wholly different from those actually made by me, and then criticises this assumed statement. The most amusing fact regarding this criticism is, that Dr. Vaughan assumes that fecal masses contain a comparatively large amount of an alkaline solution of albumen; while in the next paragraphs, in order to criticise me on another point, he quotes analyses to show that fæces contain but small amount of proteids. Dr. Vaughan evidently intends to stand by corrosive sublimate even at the expense of consistency. We will give another instance of this peculiarity of his. In the report of the committee for 1885, Dr. Vaughan states that the fear that mercuric chloride may filter through the soil, when used as a disinfectant in privy vaults and cesspools, into wells, is groundless; for the soil, he claims, has great power of fixing the mercury, on account, probably, of the inorganic salts it contains; and yet he goes to the extent of denying chemical facts, in order to claim that excreta, which contain not only the same inorganic salts, but also organic matters and products of decomposition capable of decomposing corrosive sublimate, are not at all likely to injure its efficiency as a disinfectant.

Dr. Vaughan thinks I base my condemnation of the committee's biological tests solely upon the incompatibility of mercuric chloride with albumen. This is a mere assumption on his part. As he chooses to misunderstand my remarks on this point, I will restate my criticism. "If we examine the experimental evidence upon which corrosive sublimate is recommended as an efficient agent for the disinfection of solid excreta, we find that it comprises ten or twelve biological tests made with pure cultures of micro-organisms, or with broken-down beef-tea, or with semi-solid fæces. Some of these were successful, others were failures. It does not appear to have occurred to the committee that the *nature* of the material acted upon had any influence on the result in the unsuccessful experiments, or that any further investigation was desirable for the purpose of discovering the cause of the failures. But it was assumed that the *quantity* of material was too great for the amount of disinfectant employed, and that if the latter had been added in larger quantity, or if the time of exposure had been longer, the experiment would have been successful. A liberal allowance was therefore made on the side of safety, and a recommendation made accordingly. The evidence upon which corrosive sublimate is recommended for disinfection of liquid discharges is the following: 'The liquid discharges from the bowels of patients with cholera, typhoid fever, advanced tuberculosis, septic diarrhœa, etc, may be fairly compared with our broken-down beef-tea. as regards physical and biological characters.' The amount required to sterilize a certain quantity of broken-down beef-tea was therefore determined, multiplied by two, and the product recommended as efficient for the sterilization of an equal amount of liquid fecal discharge. A recommendation based upon experimental work of this amount and character is not creditable to a committee of the leading sanitary association of this country, and is not entitled to the favor with which the one in question has been received."

In a word, the experiments of the committee were too few in number to warrant *any* conclusions regarding corrosive sublimate. Their methods of arriving at the quantity of the disinfectant to be used were wholly unscientific. The committee neglected altogether to take into account the chemical action of the material to be disinfected on the disinfectant. They should have from the first admitted that corrosive sublimate is a substance which has a long list of chemical incompatibles, and should have made investigations to determine just what changes it undergoes when added to material to be disinfected; if such changes are likely to injure its efficiency as a disinfectant; and if so, whether the injurious effect of such changes can in any way be overcome.

Dr. Vaughan, it will be observed, chooses to believe that my statement, in the paragraph just quoted, regarding the nature of the material to be disinfected, relates solely to albumen. A reference to my original paper will show that albumen is only one of a number of incompatibles of corrosive sublimate which I mentioned as having been disregarded by the committee. "In the latest report (1888)" Dr. Vaughan says, "carbolic acid has been given the second place, and mercuric chloride has not been recommended for this purpose. This change was made *because the carbolic acid was believed to be sufficient, and not because the mercuric chloride was believed to be inefficient.*"[12] I will quote from the report of 1888 the reasons given *there* for not recommending corrosive sublimate. The reader can judge for himself whether this statement of Dr. Vaughan's is a correct one. On page 160 we find the following: "We would, however, give the preference to the chloride of lime solution for the disinfection of excreta, *not only on account of the neutralizing action of albuminous mate-*

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[12] Italics mine.

rials, but for the reasons, etc." On page 164: "The presence of ten per cent. of gelatine, or of ten per cent. of egg-albumen, in the material to be disinfected, has no marked influence upon the germicide power of this agent (carbolic acid), and gives it, *therefore*, a decided advantage over mercuric chloride or sulphate of copper for the disinfection of albuminous material." On page 166: "A consideration of the experimental data above given leads the writer to believe that carbolic acid possesses a decided advantage over mercuric chloride," etc. "*The fact that it is not decomposed or neutralized by putrefying material, and that it will exercise its antiseptic action throughout the mass, etc., gives it a decided advantage.*"[13] In a word, the first and chief reason given by the committee for not recommending corrosive sublimate is that it is decomposed by albuminous material and not likely to diffuse. The committee even as late as the date of their last report had not apparently discovered that excreta contain other constituents than albumen which will decompose mercuric chloride. Still they have learned something since their report of 1885, and in their report of 1888 they distinctly admit, as the above quotations show, that mercuric chloride is inefficient for the disinfection of excreta. It is with some surprise that we now find Dr. Vaughan practically denying the statements made by the committee of which he was a member.

Dr. Vaughan assumes throughout his paper that I have had no practical experience with the chemistry of corrosive sublimate, but that I merely express opinions founded upon what I deem to be well-established facts. I do not imagine that much importance will be attached by the readers of the Journal to this criticism. I may be pardoned, however, for saying that my experience with corrosive sublimate has been in one way and another an extensive one, and that any statements made by me relative to its chemistry are based upon my own observation. Reference to the literature of the subject will show whether or not they may be regarded as "well-established facts."

I desire no further controversy with Dr. Vaughan on this subject. In fact, none is necessary. The albuminate of mercury is freely soluble in an excess of albumen, or it is not. It is decomposed by sulphuretted hydrogen, or it is not. Mercuric chloride has a long list of incompatibles, some of which are important constituents of excreta, or it has not. These are the only questions under discussion. Any one who is still in doubt regarding these can easily have his doubts removed by consulting standard authorities, or by the performance of a few simple tests, and without any further controversy between Dr. Vaughan and me.

REPORT ON PROGRESS IN THORACIC DISEASE.

BY F. C. SHATTUCK, M.D., AND G. G. SEARS, M.D.

DIAGNOSIS OF EARLY PHTHISIS BY THE MICROSCOPE.[1]

Troup emphasizes the diagnostic value of elastic fibres in cases of suspected phthisis, and says that "in no case will they be missed if sought for with sufficient patience. They are to be found very early in the disease and in the most innocent-looking sputum. They will be discovered before stethoscopic or percussion sounds, even when listened to by skilled ears and interpreted by skilled brains, give any other than uncertain information as to what is going on." They may precede the bacillus often for a considerable time, and unlike it are never temporarily absent. They are not, however, pathognomonic, but if seen the supposition is strong that we are dealing with phthisis, and a supplementary search for the bacillus will complete the diagnosis. Conversely their absence will enable us to assert with confidence that cases are not phthisis, where signs and symptoms point strongly to a contrary opinion.

CONTRAINDICATION TO THE TREATMENT OF PHTHISIS BY HIGH ALTITUDES.

Sir Andrew Clark,[2] in a brief communication, states as a result of his experience that phthisical patients with albuminuria should not be sent to the high stations; and that, if albuminuria develops while there, they should be sent away immediately. As it were incidentally, he also says: "I am as sure as I can be about anything at present incapable of actual demonstration, that the recoveries from phthisis, judiciously treated at high altitudes, are much more numerous and much more lasting than those treated by any other method at any other place."

THE VALUE OF INHALATIONS IN THE TREATMENT OF LUNG DISEASE.[3]

A limited number of experiments made by the author on phthisical patients tend to show that inhalations of iodine, whether vaporized by the steam or the hand-ball atomizer, have no deep penetration, inasmuch as the iodine cannot be detected in the urine after the inhalation. Turpentine, on the other hand, when inhaled, imparts its characteristic odor to the urine, thus showing that it is absorbed into the blood. This may explain its efficacy in checking hæmoptysis.

The conclusions are as follows: —

1. That the success of inhalations as a mode of medication depends principally on the easy convertibility into gas or vapor of such substances as are clearly desirable for the purpose.
2. That, consequently, bodies which are volatilized at ordinary temperatures are more readily absorbed by the lungs than bodies which have to undergo combustion before conversion into gases.
3. That all moist inhalations, where steam, watery vapor, or spray is the vehicle of medication, are but slowly absorbed by the lungs, and enter the circulation in small quantities, and in some cases not at all, the slow rate of pulmonary absorption contrasting strongly with the rate of gastric absorption of the same medicines when swallowed, as proved by their detection in the urine.
4. That medicinal inhalations are more useful in diseased conditions of the pharynx, larynx, and larger bronchi than in those of the alveoli and lung parenchyma.
5. That in pulmonary disease the antiseptic respirators, while they lessen cough, and reduce ex-

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[13] Italics in these quotations mine. The last quotation refers to the disinfection of *masses* of material.

[1] Edin. Med. Jour., 1888, July.

[2] Lancet, 1889, i. p. 8.

[3] C. Theodore Williams, Lancet, 1888, ii. p. 700.

pectoration, exercise no lasting remedial influence on the diseased condition of the lungs, and often seriously interfere with the freedom of respiratory effort, which is so desirable in the treatment of such affections.

HOT MOIST INHALATIONS IN PHTHISIS.

Krull[4] describes a new method of treatment in phthisis by means of inhalation of hot moist air from a special apparatus which he has devised. He employed a temperature of from 40° to 50° C., but obtained the best results between 43° to 45°, as he found that one over 46° was liable to cause dyspnœa. One or at most two sittings a day were given of from thirty to forty-five minutes' duration, and, in cases attended by fever, either early in the morning before the temperature began to rise, or late in the afternoon, after it had reached its highest point. Further treatment was simply hygienic and dietetic. The object was to increase the local blood-supply without increasing the pulse-rate, by causing dilatation of the vessels in the lungs. More complete oxygenation of the blood is thus secured, and nutrition of the healthy portions of the lungs is improved, whereby they may be better able to resist the further encroachment of the bacilli, while in the diseased portions more favorable conditions are produced for the absorption and resolution of the lowly organized products. It is also conceivable that the activity of the bacilli may be considerably limited by a temperature of 42° C. or over. In the advanced stages, complicated by syphilis, either past or present, or accompanied by albuminuria or tuberculous ulcerations in the intestine, the method proved useless, and its continuance is contraindicated by progressive loss of weight with fever, and an excessive amount of expectoration. His reported cases are all those of phthisis in the later stages, and the results were so satisfactory as to insure a further trial. In the earlier stages he looks forward to greater success.

HOT-AIR INHALATIONS IN PHTHISIS.

Working in the same line with Krull, but apparently independently of each other, two other observers in Germany, Weigert[5] and Halter,[6] have been experimenting with inhalations of hot dry air. They were administered several times daily at a temperature of 120° to 190° C. The general effects were shown by a gain in appetite and strength, while the physical signs showed decided improvement and the bacilli rapidly diminished in number. (We are now trying the method at the House of the Good Samaritan, and will later publish our results. — Rep.)

RELAPSE IN PNEUMONIA.[7]

The author defines a relapse in pneumonia as a new infiltration of the same or of another lobe occurring with all characteristic appearances, both local and general, after the patient is thoroughly convalescent, as shown by complete defervescence by either lysis or crisis and a return of the lung to its normal condition. The interval between the attacks would therefore vary between three days and several weeks. Judged by such a standard, a true relapse is extremely rare, and resembles in its mild character and short duration those of typhoid. In 1100 cases of pneumonia which have been treated in the clinic at Leipsic during the past ten years, but three undoubted instances have been observed. In the first case the temperature reached normal on the 2nd; and on the 11th, the sixteenth day of the disease, the relapse began and lasted till the 18th, the left lower lobe being at first involved, and later the right upper. In the second case the temperature returned to normal by lysis on February 24th, the relapse returned on March 9th and lasted five days; the right upper lobe being attacked in both instances. In the third the disease manifested itself each time in the same lobe: crisis occurred in December 22nd, with relapse from January 6th to 9th. He also recalls a fourth case which he saw fifteen years ago, in which four days intervened between the two attacks.

THE CONTAGIOUSNESS OF PNEUMONIA.

In a long article on this subject Netter[8] reviews the epidemics of pneumonia which have been recorded, and adds a few other instances which have come within his own experience. His most important conclusions are as follows: —

1. Pneumonia is a contagious disease of parasitic origin, and is transmissible either directly or by the intervention of a third person, or by inanimate objects, such as wearing apparel, etc.

2. The pneumococci are not destroyed by desiccation, and are diffusible through the air, but not to great distances, at most the interval between three hospital beds. They maintain their virulence for a period which has not yet been definitely determined, but probably never more than three years.

3. Contagion is possible during the entire course of the disease and even after recovery.

4. The period of incubation averages from five to seven days, but may vary between one and twenty.

5. Patients who have passed through a pneumonia are dangerous both to themselves and their neighbors as living micrococci may be found in their saliva many years after. Thence in part the epidemic appearance of the disease in certain families during long periods, and also its frequent recurrence in certain individuals who have once survived it.

6. Rigid quarantine of the patients seems unnecessary, but other patients and healthy persons should not be brought into too intimate relations with them. The sick-room must be kept well ventilated and clean, the sputum disinfected, and the cocci lurking in the mouth destroyed so far as possible.

RECURRENT PNEUMOTHORAX.

Two instances have been recently recorded in the *British Medical Journal*, both of which occurred upon the right side and in apparently healthy individuals. In the first case,[9] a lady, æt. fifty-six, was primarily attacked twelve years ago while striving to reach some article of dress on the top shelf of a high wardrobe. As the air was absorbed, evidences of pleurisy developed, but the condition was so completely recovered from, that no signs of former pulmonary trouble could be discovered on the most careful examination. She subsequently suffered from three other attacks which were much less severe, probably from the lung becoming partially adherent.

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[4] Berl. klin. Wochschft., 1888, Bd. 39.

[5] N. Y. Med. Rec., xxxiv. p. 693, 1888.

[6] Berl. klin. Woch., 1888, xxv, Bd. 36-38.

[7] F. Wagner. Deut. Arch. f. klin. Med., xliii. 405, 1888.

[8] Arch. Gén. de Méd., 1888, May-July.

[9] Gabb. Brit. Med. Jour., July 28, 1888.

The second case[10] occurred in a healthy-looking young man, twenty-two years old, who stated that the attack came on without apparent cause, on getting out of bed one morning in December, 1887. The only complaint was of shortness of breath. He gradually recovered, and when discharged six weeks later the only abnormal signs were somewhat less expansion, and a little more resonant percussion note on the right side of the chest, with a little fine crepitation, probably pleuritic, in the axillary region. The following August, while walking quietly, he was seized with sudden pain above the right clavicle, and felt a bubbling sensation in the right side, accompanied by dyspnœa and violent cough. He kept at work, however, by avoiding all hurry and exertion, and a fortnight later appeared to get well. Again in November, the morning after a hard game of football, he became short of breath, which lasted for a month, when recovery once more took place. He remained well for three weeks, when a fourth attack occurred, for which he sought hospital aid, though the dyspnœa was so slight that he grumbled at being put to bed.

THE TREATMENT OF VALVULAR DISEASES OF THE HEART.

Da Costa[11] in the course of a valuable and suggestive paper says: "From adonidine I have witnessed, in one-tenth to one-fifth of a grain doses three times a day, some admirable results; but more in cases of functional than of valvular diseases of the heart. Yet even here I have known it to act as an excellent heart regulator." Chloride of barium he finds both a general and a cardiac tonic, a remedy that increases the tone in the blood-vessels, a fairly good diuretic, and one that can be taken for a long time without disordering the stomach. He usually gives it in doses of one-tenth of a grain three or four times daily; overdoses are apt to produce diarrhœa. It seems also to lessen cardiac pain.

He finally says: "I must not bring this paper to a conclusion without mentioning a point of which I know the great value, — to make periodical examinations of persons affected with valvular disease. I am not speaking of those in whom serious symptoms call for constant supervision; rather of those who, under our advice, take little or no medicine. In them, too, it is true that the heart of to-day may not be the heart of a month hence. Yet they are the ones chiefly in whom beginning changes can be most readily met, and whose lives, with the aid of treatment when necessary, can be greatly prolonged. Let them be made aware of the importance of skilled supervision. It will not mean needless interference; it will mean judgment as to when interference is really helpful."

PURULENT PERICARDITIS SUCCESSFULLY TREATED BY INCISION AND DRAINAGE.

Dr. Dickinson[12] reports a successful case which occurred in a boy ten years old. On admission to St. George's Hospital there was evidence of effusion in the left pleura and in the pericardium. Between January 18th and 28th the pleura was aspirated four times. The fluid rapidly accumulated, and on June 30th the pericardium was punctured by Mr. Rouse, and an ounce of creamy pus evacuated. This was repeated on July 8th, when twelve ounces were withdrawn, and again on the 15th, when nineteen ounces were obtained. The needle was introduced in each instance in the fifth right interspace close to the sternum, the heart being drawn over to the left by a previous evacuation of the pleura. On July 22nd the pericardium had become as full as ever, and the general symptoms (dyspnœa, cyanosis, and irregularity of the pulse) were so distressing that a permanent opening was made and a drainage-tube inserted. The operation was followed by some faintness but by great relief. Three subsequent aspirations of the pleura were required, making twelve in all. Recovery was complete.

CYANOSIS OF CONGENITAL HEART DISEASE.

In a recent number of the *Marseille Médicale* Dr. A. Fallon[13] gives the results of his researches in this condition, and arrives at the following conclusions.

1st. That cyanosis in the adult is the result of a small number of perfectly determined lesions, of which one surpasses all others in its frequency, being found in 47% of his observations.

2nd. This malformation constitutes a fine anatomo-pathological type, represented by the following four conditions: narrowing of the pulmonary artery, interventricular communication, deviation to the right of the origin of the aorta, hypertrophy, usually concentric, of the right ventricle, to which may sometimes be added failure of obliteration of the foramen ovale, but only as an accessory cause.

3rd. To attribute cyanosis to the persistence of the foramen ovale is not sanctioned by the great majority of observed facts. Communication between the two auricles, when it exists alone, without any accompanying cardiac lesion, does not produce cyanosis.

A PIN IN A WOMAN'S HEART.

Peabody[14] reports a case which is of interest chiefly as a pathological curiosity. The patient had suffered for four months from dyspnœa, palpitation, vertigo, muscæ volitantes, tinnitus aurium, morning nausea and vomiting, and general anasarca, and died a half-hour after the onset of an attack of great præcordial pain, distress, and intense dyspnœa. At the autopsy a black or blackened pin, apparently eroded, was found piercing one of the papillary muscles attached to the anterior segment of the mitral valve, and penetrating the wall of the ventricle to the depth of three centimeters. The top of the head was free in the left ventricle, while the point was five millimeters from the external surface of the heart. The pericardium was normal. The heart was slightly increased in size, the wall of the left ventricle was somewhat thickened, as were the cusps of the mitral valve, and there was perceptible stenosis of the mitral orifice.

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[10] S. West. Brit. Med. Jour., Jan. 12, 1889.

[11] Am. Journal of the Med. Sciences, Nov., 1888.

[12] Brit. Med. Jour., Dec. 1, 1888.

[13] Rev. de. Ther., Dec. 15, 1888.

[14] N. Y. Med. Jour., Dec. 29, 1888.

A large effusion was found in both pleural cavities, and the kidneys, stomach, and liver showed evidences of fatty degeneration. The pin had been apparently in its position for a long time, and in all probability had entered by the mouth. Whether it was the cause of the heart lesions and secondarily of those of the kidneys, etc., is a matter of conjecture owing to the indefiniteness of the history.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING, FEBRUARY 6, 1889.

A STATED meeting of the Councillors was held at the Medical Library, Boston, on Wednesday, 6th inst.

The meeting was called to order at 11 A.M., by the President, DR. DAVID W. CHEEVER. Eighty-two councillors indicated their presence by signing the roll.

The following delegates to other State Medical Societies were appointed: —

Maine: Drs. A. Millet, of East Bridgewater; E. D. Hill, of Plymouth.

New Hampshire: Drs. M. D. Clarke, of Haverhill; C. W. Spring, of Fitchburg.

Rhode Island: Drs. O. S. Lovejoy, of Haverhill; J. R. Bronson, of Attleboro'.

Connecticut: Drs. G. H. Lyman, of Boston; I. R. Sanford, of Sheffield.

New Jersey: Drs. H. W. Williams, of Boston; W. M. Trow, of Northampton.

The Committee on Membership and Finances reported names of Fellows to be allowed to resign, to retire, to have dues remitted, and also to be dropped for non-payment of dues, and their recommendations were adopted.

Committees were appointed: —

To Audit the Treasurer's Accounts: Drs. S. J. Mixter, J. S. Greene.

To Examine the By-Laws of District Societies: Drs. S. D. Presbrey, J. C. White, F. W. Chapin.

In accordance with the recommendation of the Committee on Publications it was voted that the Shattuck Lecture be postponed to the year 1890, and that the change in the hour of the annual meeting of the Council be deferred to the same time.

A communication from the Committee of Revision of the U.S. Pharmacopœia was presented, requesting action regarding the system of weights and measures to be used in constructing the working formulas of the Pharmacopœia.

It was voted that the matter be referred to Drs. E. S. Wood, B. F. Davenport, and F. H. Williams, as a committee with full powers to act for the society, and that they also represent the society in the Pharmacopœial Convention in 1890.

THE PRESIDENT called attention to the fact that since the last meeting three former vice-presidents of the Society had died, viz., Drs. Joseph Sargent, of Worcester; Ira Russell, of Winchendon; and William G. Breck, of Springfield; and he paid a fitting tribute to their memories.

THE NEW YORK ACADEMY OF MEDICINE.

STATED meeting, January 17, 1889.

DR. PAUL GIBIER, of Paris, read a paper on

YELLOW FEVER: EXPERIMENTAL RESEARCHES INSTITUTED IN FLORIDA, UNDER THE DIRECTION OF THE FRENCH REPUBLIC.

He said that in September, 1888, in consequence of his previous researches in yellow fever at Havana, the French Government sent him on a mission to Florida, to prosecute still farther his study of the disease. When he reached Jacksonville the epidemic had begun to diminish; but, through the courtesy of Surgeon-general Hamilton and Dr. Porter, chief of the Bureau of Medical Relief, he was able to examine as thoroughly as possible several of the subjects who died there.

Before presenting the details of the cases he observed, he thought it well to take up the question whether the disease in Florida last year was veritable yellow fever or not; concerning which the relatively small number of deaths, and the fact that there were proportionately more cases among the blacks than the whites, had caused some physicians to entertain doubts. It was a fact, however, that while in the West Indies the blacks were considered as having immunity from yellow fever, in previous epidemics in the United States the disease had been observed among them as well as the white population. Moreover, in Jacksonville, most of the white families left the town a few days after the outbreak of the epidemic, leaving few but negroes remaining. Still, it was remarked that, as a general rule, the symptoms were less grave and the mortality of the disease less considerable among the latter than among the whites. He believed it was necessary to examine, *first,* if it was really yellow fever at Jacksonville; *second,* in case of a negative reply, if it was a new disease; *third,* if all the cases registered were genuine (in other words, if there were not existing at the same time several kinds of fevers, such as dengue, bilious or malarial fevers); and, *fourth,* if yellow fever might not have assumed, at least in a certain proportion of cases, a kind of hybrid character, owing to the malarious nature of the country.

In answer, he could say that many cases of genuine yellow fever were observed in Jacksonville, and that he personally saw some cases which were absolutely characteristic, judged both by the symptoms and the anatomo-pathological lesions. But it was not irrational to admit that a concomitant epidemic of bilious fever and many cases of malarial poisoning existed simultaneously with the yellow fever. In illustration of this hypothesis, he referred to the case of a negro upon whom he made an autopsy at St. Luke's Hospital, where the bowels were normal, the liver black, instead of presenting the special color, and the spleen hypertrophied; so that whatever else the patient might have had, it was certain that he did not have yellow fever. At the temporary hospital, Dr. Solace Mitchell showed him the thermometric charts of his patients, and it was noticeable, from the intermittent form assumed by the fever, that the paludal element had stamped, as it were, its mark upon it, and made it assume one of those hybrid forms to which Professor Verneuil, of Paris, had called attention. It was likely that the cases in the diagnosis of which the observer hesitated were found, not in the centre of the town, but in the suburbs and on the opposite side of the St. John's river (South Jacksonville), where the sanitary conditions were not calculated to preserve the residents from malarial fermentations. One of the cases studied by Dr. Gibier, and reported by him among the observations recorded in this paper, occurred precisely in one of these localities, and in his opinion belonged to the category of pernicious fevers.

As to the bacteriological observations that he made, while the cases were few in number, the result entirely confirmed the more numerous observations at Havana during 1887 and 1888. The *modus operandi* is described as follows. "The substances which have been planted in cultures have been taken with all precautions that are required; the liquids with sterilized Pasteur's pipettes and the solids (visceral matters) by means of a process I will briefly describe. I obtain matter from the interior of a viscus by the use of a curette analogous to those which are employed for scraping the cervical cavity of the womb, with the difference that my instrument is curved, instead of being straight. I cauterize with a heated wooden-handled spatula the viscus, recently removed from its natural cavity, at the point at which I shall introduce the instrument. After having passed the latter into the flame, I plunge it into the parenchyma, revolve it several times, and withdraw it filled with pulp, which is mixed with dissolved agar-agar or gelatine. The rest of the operation is executed as usual. If the post-mortem is performed far from the laboratory I dilute the pulp obtained by the scraping with sterilized water, which is afterwards used for the cultures on plates, or in Esmarch tubes, or Gibier's matrasses. A large quantity of tissue may be planted in this way, and if the organs contain cultivatable microbes it is almost impossible not to obtain a great number of colonies."

Dr. Gibier then proceeded to give an outline of the observations made by him on individual cases. The specimens taken from the first two became altered after death, owing to a delay of eight days in receiving his instruments. They presented, however, the characteristic lesions of yellow fever. In the third case, in which the autopsy was made immediately after death, the intestines did not contain the bacillus which he found in such large quantity in cases at Havana. In this connection he made the note that if this bacillus was really the cause of yellow fever we must admit that under influences as yet unknown it might disappear after having produced the special intoxication. The same phenomenon was observed to a large extent as regards the comma-bacillus of Koch in Asiatic cholera. As in his former observations, the blood did not contain any microbe. He added that the microscopical examinations of the blood, either in its fresh state or in desiccated or variously colored fresh preparations, did not show anything abnormal; and that this had been the case in all his observations, without any exception.

As to the different micro-organisms which developed in the cultures of the viscera, the number of the colonies was so small and their composition so various that it had to be admitted that an accidental infection took place during the manipulations. But with the cultures of solid media there was no reason to fear the same errors as with the liquids. Although he admitted the possibility of the introduction of micro-organisms into the viscera, owing to the alterations of the mucous membrane, he considered the cultures of the liver, spleen, and kidneys in this instance as having remained sterile.

In case number four he considered it very doubtful whether the patient died of yellow fever. The results of his cultures were as follows. Blood, sterile; urine: a few colonies of a micrococcus of medium size growing on the surface of the agar, small colonies, poor, irregular, not liquefying the gelatine; bile, rare colonies of a torula growing slowly; spleen: four colonies of a larger micrococcus and a colony of a mycelium (accidental infection); kidneys: sterile; liver: sterile; stomach and bowels: common micro-organisms do not liquefy the gelatine.

In the fifth case, a negro woman, the stomach and bowels contained a large amount of black liquid, acid in the stomach but decidedly alkaline in the small intestine, and neutral in the large. The kidneys, spleen, and liver contained a certain number of diplococci, the colonies of which spread quickly over the surface of the agar-agar, like a transparent cloud, and dissolved the gelatine very rapidly. This was the first time that Dr. Gibier had found this micro-organism, and it was also the first time that he ever found a microbe in the parenchyma of the viscera of subjects dead of yellow fever; but in this connection he called attention to the fact that the autopsy was performed eight hours after death, in a surrounding temperature relatively high, and while the interior of the subject was still warm; all conditions very favorable for the growth of the bacteria of decomposition. Some particles of the contents of the bowels, taken from different portions of the tract, were diluted with sterilized water, and with these he made cultures on gelatine in his matrasses. Notwithstanding the large dilution, the colonies were so numerous that after twenty hours the gelatine was entirely dissolved in the first two matrasses. In the third (fourth dilution) in one hundred and six colonies he counted ninety-eight which liquefied the gelatine. The important fact to which he wished to call especial attention was that all those liquefying colonies were formed by the microbe which he had isolated at Havana.

In the sixth case observed, a typical one of yellow fever, in a white male forty years of age, the cultures of the blood and the renal, splenic, and hepatic pulps remained absolutely sterile. Cultures of the urine contained some micrococci; but the patient had been catheterized several times during his residence at the hospital. The cultures of the contents of the bowels presented only common microbes. While this was unquestionably a case of yellow fever, the pathogenic bacilli had disappeared from the intestine by the time death supervened.

Case number seven was the one previously referred to as belonging to the category of pernicious fevers. It was that of a negro living in the swampy locality of South Jacksonville, and death occurred only twenty hours after the initial chill, which was very violent, and followed by a very high fever. The cultures of the blood, kidneys, spleen, and liver remained sterile. Those of the intestinal contents were strewn with colonies almost exclusively composed of large and long bacilli, which did not dissolve the gelatine. Dr. Gibier remarked that he was unable at present to say what was the significance of these long bacilli, which grew at the surface of the plates, with the aspect of a light pellicle more or less irregular, and in the interior of the medium of culture were regularly spheroidal. He reported the fact only, with the hope that it might be of service in guiding some further researches. He considered it a remarkable fact that out of the three undoubted cases of yellow fever in the above series, it was one in which death was most rapid (occurring after four days) that contained the black and characteristic matter in the intestines and presented in such an extraordinary abundance, and almost exclusively, the same bacillus which he had seen in several yellow fever subjects in Havana, and which Dr. George Sternberg also found afterwards in three cases of yellow fever in which he looked for it. In this connection he recalled the fact that he originally discovered this microbe in some Spanish soldiers who died of yellow fever in the Military Hospital at Havana. Several months afterwards he again found it in some foreign soldiers who died of the same disease in the Civil Hospital of that city, while it was absent in subjects who died from other diseases in the hospital; and now, after a year he found it again in great abundance and in the state of a pure culture, as it were, in a subject in Florida who presented the typical symptoms and lesions of genuine yellow fever.

He recalled also that the cultures of this bacillus exhaled an odor quite similar to that which he had remarked several times in black vomit, and that its biological qualities are entirely in accord with the physiology of yellow fever itself, while in certain conditions, as previously shown by him, it blackened bodies in contact with it to such an extent that some of the liquid cultures actually had the appearance of black vomit. He did not claim, however, that this last character, which did not always appear, was pathognomonic. On the whole, he thought that he was right in saying that the presumption that this bacillus was the cause of yellow fever was tending to become a certainty. The fact that in the cases in which the autopsy was made early after death, both at Havana and Jacksonville, the blood, liver, spleen, and kidneys had been constantly found free from microbes, added support to the theory that he had advocated that yellow fever is an intestinal infection, which must be treated from the very beginning with evacuants and disinfectants such as bichloride of mercury, naphthaline, and tannic acid.

Two objections had to be answered, viz. (1) How is it that the microbe supposed pathognomonic is not found in every case of yellow fever after death, and if it has disappeared, how shall we explain the persistence and the aggravation of the accidents? (2) If yellow fever is a disease the germ of which grows exclusively in the intestine, how shall we explain the albuminuria present?

We knew that when a micro-organism had saturated any medium, its growth ceased. If another microbe was introduced and grew in the medium transformed in that way, the first often disappeared. This would explain the possibility of the disappearance at any moment of the microbe of yellow fever. He proposed at the first opportunity that he could get to analyze the dejections of several patients from the first day to the last, and he said he should not be surprised to find his microbe only in the first period of the disease, at least in a certain number of cases. As to the persistence and eventual aggravation of the accidents, they very likely depended upon the more or less grave importance of the lesions. The latter were due to venomous products, ptomaines, secreted by the microbes and absorbed by the blood-vessels of the intestine, and more especially by the radicles of the vena porta. We know that the cultures showed the absence of bacteria in the liver. This gland, into which the blood of the vena porta first flowed, underwent nevertheless a fatty degeneration analogous to that observed in certain cases of poisoning *per ingesta*. The spleen, on the contrary, was of normal appearance, unless there was a malarial complication or secondary infection. If the kidneys were congested, and allowed the escape of albumen, it did not follow that they were directly attacked by the bacteria. In typhoid fever, for instance, which might be considered as an infection primarily intestinal, albuminuria was observed without there being found in the urine, at least in the beginning, the specific bacillus of the disease. Certain kinds of poisons also produced albuminuria, such as lead, phosphorus, cantharides, etc.

Having remarked that in his examinations he had ascertained that the contents of the intestines were either alkaline or neutral, he remarked that the experiments which he had made on his bacillus had already given the explanation of the fact that yellow fever remains endemically on the seashore of the hot countries, and not in interior regions. Also of this other fact, that an infected vessel may hibernate in glacial regions without losing the ability to communicate yellow fever when she returns to a hot climate. Other experiments which he intended to publish later induced him, he said in conclusion, to think that if the bacillus in question was really the cause of yellow fever, it would not be impossible to protect against that terrible disease the populations of countries exposed to epidemics of it.

— A fire broke out in the Military Hospital in Madrid recently. There were four hundred and thirty patients in the building and they became panic stricken. Many of the patients were unable to help themselves in any way, but the nurses and doctors bravely and successfully devoted themselves to the task of removing them from the burning structure.

The governor of Madrid himself carried several men who were suffering from contagious diseases to the barracks situated near the hospital. One wing of the hospital was totally destroyed. No deaths resulted from the fire.

THE BOSTON
Medical and Surgical Journal.
THURSDAY, FEBRUARY 21, 1889.

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CUPPLES AND HURD,
94 Boylston Street, Boston, Mass.

ANNUAL REPORT OF THE INSPECTOR OF MILK AND VINEGAR OF BOSTON.

The thirtieth annual report of the Inspector of Milk and Vinegar for the city of Boston contains the usual information concerning the operations of the department for the year just past. Naturally that portion which deals with the condition of the milk supply of the city more directly concerns the medical profession. It appears that the quantity of milk sold in 1888 shows an increase of 915,867 gallons over the quantity sold in the preceding year, and an increase over the year 1886 of 1,689,311 gallons. This increase in the demand is directly traceable, according to the inspector, to the work of his department, which, he claims, has resulted in a progressive diminution of the percentage of samples below the standard, from 60, in 1883, to the surprisingly low figure, 8.49, in 1888. It appears from the diagram on page 11 of the report that the percentage of samples below the standard was in

1883	60.00	per cent.
1884	40.00	"
1885	30.64	"
1886	18.55	"
1887	12.54	"
1888	8.49	"

The inspector thereupon claims that in no large city in the world is the adulteration of milk reduced to the low point which now prevails in Boston.

The percentages above quoted for 1883 and 1884 are taken from the annual reports of the Massachusetts State Board of Health, no exact percentage record of poor samples having been kept by the city inspector's office previous to 1885. A reference to the report of the State Board of Health for the purpose of learning if the results obtained by that office confirm the claim made by the city inspector relative to the purity of the milk-supply of Boston reveals some striking differences in the percentages obtained by the two departments. According to the reports of the State Board of Health the percentage of samples of milk sold in Boston below the standard was in

1884-5	63.76	per cent.
1885-6 (14 months)	50.00	"
1886	37.50[1]	"
1887	52.31	"

The percentage for 1888 has not yet been published.

These figures suggest the query, why it is that the State inspectors find essentially fifty per cent. of the samples below the standard each year, with no diminution since 1885, save for a short time during which the standard was lowered, while the city inspector, covering the same territory, reports a progressive diminution, reaching as low as 8.49 in 1888. These two series of examinations need to be reconciled before we can feel perfectly satisfied with the purity of the milk-supply of Boston.

It is true that during one year, and it is so stated in the report for that year (1884–5), it was the custom of the State inspectors to collect the greater part of the samples for analysis from persons who were suspected of dealing in adulterated milks. But this custom, we are informed, has not prevailed since. It does not therefore account for the large percentage of adulterated samples found by the State analysts in subsequent years. For the purpose of learning, if possible, which set of figures more accurately represents the true condition of things, we have caused to be collected and submitted to a competent chemist for analysis a number of samples of milk taken from various parts of the city; namely, Back Bay, South End, Roxbury, Dorchester, South Boston, Charlestown, and West End. In all, 120 samples were taken. Of these, 80, or 66.66 per cent., were below the legal standard. The number of samples extensively adulterated was 21, or 17.50 per cent. That is, the percentage of extensively adulterated samples was more than two times the percentage of all samples reported by the city inspector as below the legal standard in 1888. It is not of course claimed that an average obtained from 120 samples is entitled to quite the same weight as one obtained from over 9000 samples. But on the other hand it may be stated that the frequency with which the collectors were asked if they were "new inspectors," or where the old inspectors were, indicates that the samples were taken from localities which the State or city inspectors were accustomed to visit, and presumably therefore from dealers who were desirous of keeping for sale milk of standard quality. Under these circumstances, the figures obtained are entitled to some consideration. Their close proximity to those given by the State Board of Health, and the wide variation of the two from those given by the city inspector, certainly suggest that milk adulteration is not a matter which the physician can calmly dismiss from his mind as settled.

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[1] Figures for four months, during two of which the standard was by law 12 per cent. total solids, instead of 13.

MEDICAL NOTES.

— Major George M. Sternberg, surgeon, has been ordered to proceed to the Island of Cuba, on temporary duty in connection with the study of epidemic diseases, and upon his return to submit a report to the president.

— It is said by the opponents of State regulation of medical practice that one consequence of the medical bill recently passed in Kentucky is an advertisement observed in Kentucky newspapers, announcing that applicants for license must pass an examination, and that they can be fitted for it on the lowest terms and in the quickest time by the —— Medical College. It means that "cramming" classes will be formed, after the manner of the "cramming" classes for the British civil service.

NEW YORK.

The statement made by Dr. Loomis in his recent inaugural address as president of the New York Academy of Medicine, that "to-day hospitals and dispensaries so far exceed the needs of the city that there is actually a premium on patients to fill their wards," has made a considerable stir in hospital circles; and Mr. Frederick F. Cook, general agent of the Hospital Saturday and Sunday Association, has come out with an elaborate reply in defence of these institutions. "Obviously," he says, "if what the president of the New York Academy says about our hospitals is anywhere near the truth, there is not only no *raison d'être* for any such an instrumentality for hospital support as the Hospital Saturday and Sunday Association, but it is even permissible to charge it with seeking the gifts of the public under false pretences."

He then goes on to say that the duties of his position bring him into intimate relations with at least twenty-eight of the (about) forty hospitals and homes for convalescents and incurables of the city; and inasmuch as patients are admitted to them in certain contingencies on his own recommendation, it is very necessary to a proper discharge of his duties that he should keep advised as to their ability to receive patients so recommended at any given time. During the past year, although he had in an almost literal sense twenty-eight hospitals at his service, he has frequently found great difficulty in placing a patient, trying first here and then there; and this, too, with cases falling into ordinary medical or surgical practice. But, not wishing that the case of the hospitals in a matter which he considers of such supreme importance to their future welfare should rest upon the statement of any single individual, however trustworthy or well informed, he has been to the pains of procuring the evidence of six or more of the leading hospitals of the city; and this he proceeds to cite.

The superintendent of the New York Hospital said: "This hospital was built to accommodate one hundred and fifty patients. Lately we have had as high as one hundred and ninety-two. Ten years ago the average length of stay per patient was twenty-three days. The average is now reduced to fourteen days. This is much less than it should be, but when it becomes a question between a man able to be about, though not in a condition to return to work, and another whose very existence depends on instant admission to hospital treatment, the choice is clearly made for us by compelling circumstances." The superintendent of the Mount Sinai Hospital stated that of 3912 applications last year, only 1892, less than one-half, could be admitted, on account of the lack of accommodations. The superintendent of the German Hospital said that during the past year over 500 proper hospital cases had to be refused admission.

Having quoted similar statements from the superintendents of St. Luke's, Roosevelt, St. Francis, and the Woman's Hospital, Mr. Cook concludes as follows: "The above survey of the situation covers considerably more than half of the entire field in amount of service. With three or four exceptions, all the rest are hospitals (and most of them of limited capacity) devoted to some specialty, and I speak from a wide experience when I affirm that it is far more difficult to secure admission to them than to the larger general hospitals. In one of these specialty hospitals, or homes, I know to a certainty that there has not been a vacancy for two months, and that there is little prospect that there will be one in the next two or three months to come. Not above four of the twenty-eight hospitals in the Association are fairly provided for by endowment or otherwise; the remaining twenty-four are more or less dependent on the gifts of the public from year to year, and at least half a dozen of this number have really no permanent income from any source whatever.

— A report of the sanitary condition of the wharves and docks of the city was presented to the mayor February 14th. During the epidemic of yellow fever in Florida last autumn the Dock Commissioners, fearing that if the disease should reach New York its germs would find lodgment and breeding places in the filthy docks, applied, in order to secure better information in regard to their condition, to the president of the Board of Health to have a careful inspection made. Dr. Moreau Morris was appointed to this duty, and his report covers the inspection of all the docks along the Hudson river from the Battery to 56th street. It points out that, excepting where new piers and stone bulkheads have been built by the Dock Commissioners, the wharves are constructed of wooden piles and flooring, which obstruct the flow of water and make eddies in the docks in which all sorts of refuse swirl until they finally sink to the river bottom. Many of the sewers run only to the old bulkhead line, and there discharge their contents, either to fall at once to the bottom or to float out into the eddies with the same result. Dr. Morris has found that men working on the piers are subject to colic and to various forms of fever, and he himself was twice prostrated by sickness while making his investigations. In his opinion the gases and vapors from the rotten timbers and the filthy river bed are a constant source of malarial poisoning, and consumptive tendencies are also increased by them. He believes that the construction of new piers and stone bulkheads, in accordance with the plan already partially carried out, would remedy the evil, but as there are serious impediments to the speedy completion of the new dock system, he thinks that the Dock Commissioners should use their power to compel the docks to be dredged and cleaned. He proposes also that all sewers shall be carried out beyond the bulkhead line, and that the broken sewer boxes under the piers be repaired at once. In the report, the docks and piers that require the most prompt attention are pointed out, and a very large proportion of the whole number is included in this category.

Correspondence.

Boston, Feb. 12, 1889.

Editor Medical Journal,

Dear Sir, — A short time since the *Sunday Herald* requested permission to visit the Massachusetts Charitable Eye and Ear Infirmary, and give the public an account of the institution. No objection was raised by the authorities, and the result was a very excellent and appreciative report, which recently appeared and was doubtless read by many of the profession. To our consternation we have this day received the accompanying postal from a certain town in a New England State. With the single exception of a change in the names I give the document as it was sent.

Surgeon.

2. 11. '89.
Smithville, Me.

Seeing your ad. in *Herald* take liberty to write you to send your catalogue or circular to Mrs. James Brown, Mr. William Jones, Mrs. J. Y. Dusenberry, Mr. Calvin Belcher, all troubled with cataracts growing over eyes, some most blind now.

ON THE HOSPITAL BARRACKS AND MEDICAL SCHOOLS OF RUSSIA.

Paris, France, Jan. 30, 1889.

Mr. Editor, — In two previous letters I described the barrack hospitals and medical schools of Russia. In a third and last letter I shall consider whether what I have said indicates any improvement which we may profitably adopt.

As for the hospitals, we have, I believe, in the barrack hospitals models which, from the standpoint of good hygienic common sense, we would do well to imitate in all future hospital constructions. Already our hospitals have greatly profited by the introduction of barracks which have been steadily undergoing improvement, without yet attaining the perfection of the Russian barrack hospitals, as may be seen by comparing the barracks of Cochin hospital with those of Broussais.

At Cochin there are two varieties of barracks, the one constructed in 1870, at the time of the siege, the other built six years ago. The first are low, inconvenient, badly lighted; the second much higher, better ventilated, and if they were raised above the ground and better covered they would do very well. These desiderata have been in part met at the Hospital Broussais.

The fault of all these barracks consists chiefly in this, that their interior surface is not smooth; the boards that constitute their walls are so dovetailed together as to jut out at their joints, offering convenient nests for bed-bugs, and preventing minute cleansing of the apartment, and consequently the rigorous application of antisepsis and disinfection. The walls of these wards should be perfectly smooth, and painted and varnished like the interior of our ships, in order that they may be properly flooded and cleaned. It is also desirable to have double windows in these barracks.

As for the roofing, a change here is also desirable, and the bituminous paper heretofore in use should be replaced by zinc or slate. Moreover, there should be several scuttles on the roofs, with movable lids to permit free ventilation of the wards, without the necessity of opening the windows. The floor of these barracks should also be modified; it should be made impermeable, with a sufficient slope to allow free flooding with water.

As for the number of beds which these barracks should contain, it would be best to limit them to twenty. Where there are only twelve to each pavilion, as at the Alexander Hospital, too large a retinue of attendants is necessary; an increase is thus entailed in the cost of the management. But it appears to me indispensable that each pavilion should be isolated, and have no communication with the others. When the Alexander Hospital was being built, this question was long discussed, and the majority were in favor of the isolation of each pavilion.

I believe, in fact, that by virtue of this isolation, the propagation of infectious diseases is much less easy. I would also suppress the corridors which in most of our barracks connect the various pavilions and bring them into communication with each other. For, in spite of all you can do, these corridors become a place of rendezvous for the patients of the different wards, and if they present a certain advantage in facilitating the hospital service, they have this evil, that they allow the commingling of the patients.

I think it also desirable that each isolated pavilion should be provided with a common hall which shall serve as a place of reunion for the vigorous patients of each ward, and especially with a dining-room. It is bad hygiene for patients who are able to be up and dressed to take their meals in bed. I think we may also profit by other points in the Russian hospital management, namely, the mode of reception of patients, and the wards for surgical dressings.

Before the patient enters the wards he takes a bath and puts on the uniform of the hospital, while his garments are carried to the disinfecting chamber. We should adopt the same practice, and disinfect the patient before allowing him to enter our wards. As for the ward for surgical dressings, this seems to me to be absolutely necessary; apart from the operating room, there should be special rooms furnished with hot and cold water and tubing, enabling those in charge to irrigate and cleanse the walls of the rooms where the dressings are performed.

It is important that the number of barracks should be greater than the present need of the patients, so that there may always be barracks unoccupied; this gives an opportunity to practise complete disinfection of the wards every two or three months. The disinfection service should be confided to some one expert in the business and thoroughly reliable, as is done in the Russian hospitals.

Hospitals of this kind may and ought to be constructed and managed on an economical basis. It is important not to exceed, per year, the sum of 2000 to 3000 francs per bed ($400 to $600). It would be well to see if it might not be an advantage for us to substitute brick for wood as being more durable; at any rate, what we should aim at is to minimize the expense as much as possible, at the same time that we should endeavor to give these hospitals good, healthy locations with ample grounds, and especially make the modes of disinfection and the dietetic arrangements as perfect as possible.

While we may never go so far as to have cow-stables in connection with these hospitals (the Alexander Hospital has a very good one), it must be admitted that, from an alimentary point of view, our hospitals have still great progress to make. We must abandon the old notion of broth as an aliment; to-day everybody knows that broth is a peptogenous aliment, very little nutritious; and it is toward the preparation of this broth (certainly of very excellent quality), that the *cuisines* of the hospitals have directed all their efforts. We should now reform this abuse, give our patients roast and broiled meats, and only use meats under this form, also allowing thin soups for their peptogenic effects. I cannot speak but in condemnation of the stews, often badly prepared, which are so frequently served to patients.

As for the medical teaching, it seems to me that we may derive valuable hints from some parts of the Russian system, and I shall call your attention particularly to two points which I regard as admirable,— the establishment of a superior grade in medicine, and the institution of "propedeutic" clinics.

To create a school of higher grade for perfecting our young physicians who are ambitious to compete for an honorable position in the hospitals, in the Faculties of Medicine, in Paris or in the provinces, would be a good undertaking. We could then render the teaching of the Faculty more practical, and demand, for instance, of the professors that they shall not divide up their course and prolong it over too great a number of years. Thus, both External and Internal Pathology, as taught at present by the Faculty, require five or six years; we see, in fact, professors devote to pneumonia a dozen lectures. A method of teaching like this, which would be very useful in a post-graduate school for superior training, is not essential to make practitioners of medicine. For this superior kind of instruction might be reserved courses of a higher scientific character, in which would be discussed the great problems which modern science calls forth and which are of interest to us both from a medical point of view and that of the accessory sciences.

In this manner we might institute *doctors of medical sciences*, like the "doctors of letters" or "doctors of sciences," and we might require, as is done in Russia, apart from the special test examinations, a thesis embodying original work, to be publicly defended, like the graduating theses in many colleges of to-day. This title of "doctor of medical sciences" should be obligatory on all those who would compete for the hospitals, or for membership in the faculties. I have said in a previous article that in Russia the students never follow the hospital clinics till after the fifth year, and they are even then always under the surveillance of the professors or their assistants. No responsibility is allowed them, they never enter the wards but with a professor, and leave when he leaves: the hospitals have no undergraduate attendants, and their internes are all physicians. I think that in this respect our mode of teaching is more just and practical; the student should very early in his studies be brought in contact with patients and taught self-reliance by giving him some responsibility in the management of cases. In practice, this habit of self-reliance, which leads to presence of mind in emergencies, is very necessary.

It must, however, be admitted that their system of medical assistants is superior to ours of internes, from the point of view of both patients and students. Our method of choosing our internes from the brightest and smartest of the young students, if it presents great advantages as far as these students are concerned, does not offer the same advantage as to the performance of the service, especially in surgery, and it is just at the moment when the interne has mastered the method of his chief and is fitted to render him efficient service, that he drifts away to another hospital. I think that this part of our system demands modification.

But the "propedeutic clinics," in prosecuting which the pupil takes a year in learning physical diagnosis and the various means of examining patients, appear to me to be a useful feature. It seems desirable that there should be special services where, by trained experts, students shall be drilled in percussion and auscultation, in reporting cases, and in mastering all the means of diagnosis.

It often happens that the student when he has arrived at the termination of his studies knows neither how to report a case nor how to examine a patient.

I would also remark with a feeling of personal satisfaction that there are courses of clinical therapeutics in Russia, and since my first lectures on this subject at the St. Antoine Hospital, ten years ago, there has been great progress in this department of medical study in various countries of Europe. We see, in fact, in Italy, Germany, and Russia, professorships of clinical therapeutics established. The exigencies of medical teaching have brought about this change, by which instruction in therapeutics has undergone a double differentiation. In the one department, the student is taught pharmacology and materia medica, at the amphitheatre or laboratory; in the other, he is taught clinical therapeutics, or the application of medicaments to diseased conditions, at the bedside.

Such are the brief considerations which I desired to present relative to the Russian hospitals, and medical schools. I think that I have stated some points which we in France, as well as our confrères across the ocean, may profitably imitate; the ideal not having yet been attained by us either in our method of making physicians, or in our nosocomial arrangements.

Yours truly,
Dujardin-Beaumetz.

REPORTED MORTALITY FOR THE WEEK ENDING FEBRUARY 9, 1889.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diph. and Croup.	Scarlet Fever.	Measles.
New York	1,526,081	818	353	20.64	16.20	7.56	6.48	3.12
Philadelphia	1,016,758	408	139	15.50	11.50	4.75	2.75	—
Brooklyn	751,432	315	144	24.96	18.56	12.80	3.20	3.52
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	165	64	20.74	21.96	9.15	1.22	3.66
Baltimore	437,155	140	51	6.15	17.04	2.13	—	.71
Boston	407,024	182	63	6.05	11.55	1.10	—	.55
Cincinnati	225,000	96	—	10.42	9.36	6.24	1.04	—
New Orleans	248,000	112	22	8.92	9.79	4.45	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	80	24	7.50	13.75	2.50	—	—
Pittsburg	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	11	10	72.72	27.27	27.27	9.09	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	37	10	—	—	—	—	—
Portland	40,000	13	1	—	15.38	—	—	—
Worcester	76,328	—	—	—	—	—	—	—
Lowell	69,530	32	9	18.78	15.65	3.13	—	—
Cambridge	64,079	—	—	—	—	—	—	—
Fall River	61,203	22	11	22.75	13.65	—	.10	13.65
Lynn	51,467	25	—	16.00	8.00	4.00	—	—
Lawrence	40,175	20	3	—	5.00	—	—	—
Springfield	39,952	9	5	44.44	33.33	33.33	—	—
New Bedford	36.298	8	1	—	—	—	—	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	12	2	16.66	16.66	8.33	—	—
Chelsea	27,552	8	2	—	50.00	—	—	—
Haverhill	24,979	4	1	25.00	—	—	—	—
Taunton	24,796	7	1	42.84	—	42.84	—	—
Brockton	24,784	—	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	8	2	12.50	—	12.50	—	—
Malden	18,932	4	—	75.00	—	—	—	—
Fitchburg	17,534	3	1	—	—	—	—	—
Waltham	16,651	1	—	—	—	—	—	—
Newburyport	13,839	8	1	—	37.50	—	—	—
Northampton	13,419	—	—	—	—	—	—	—
Quincy	13,728	3	—	—	—	—	—	—

Deaths reported 2551; under five years of age 920; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 453, acute lung diseases 380, consumption 345, diphtheria and croup 168, measles 49, scarlet fever 81, typhoid fever 35, diarrhœal diseases 32, whooping-cough 31, malarial fever 17, erysipelas 13, cerebro-spinal meningitis 6. From typhoid fever, Philadelphia 18, Lowell 4, Brooklyn and Lynn three each, New York two, St. Louis, Baltimore, Boston, Cincinnati, and Haverhill one each. From diarrhœal diseases, New York and St. Louis 4, Baltimore Boston, and Malden three each, Philadelphia, Brooklyn, New Orleans, and Washington two each, Charleston, Lowell, and Salem one each. From whooping-cough, New York 10, Brooklyn 7, Philadelphia 5, Boston 3, Baltimore and Washington two each. From malarial fever, St. Louis 6, New York, Brooklyn, and New Orleans three each, Baltimore and New Haven one each. From erysipelas, Philadelphia 6, New York 4, Boston, Cincinnati, and New Haven one each. From cerebro-spinal meningitis, New York and New Haven two each, Cincinnati and Springfield one each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending January 26th, the death-rate was 20.6. Deaths reported 3775: infants under one year of age, 807; acute diseases of the respiratory organs (London) 456, measles 217, whooping-cough 99, diphtheria 52, scarlet fever 50, diarrhœa 40, fever 30, small-pox (Bradford) one.

The death-rates ranged from 12.2 in Derby to 28.0 in Preston; Birmingham 24.9; Bradford 15.8; Hull 14.5; Leeds 18.1; Leicester 19.8; Liverpool 24.9; London 19.4; Manchester 26.9; Nottingham 18.9; Portsmouth 15.9; Sheffield 25.5; Sunderland 20.2.

In Edinburgh 17.4; Glasgow 25.2; Dublin 27.5.

The meteorological record for the week ending February 9, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Feb. 9, 1889.	Barometer.	Thermometer			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches
Feb. 3	29.75	27.5	42.0	22.6	56	87		72.0	S. W.	N W		10	16		O.	C.		1.35	T.
" 4	30.00	18 5	28.0	8.2	80	72		76.0	N. W.	S. E.		9	6		C.	O.			.00
" 5	29.65	39.5	49.0	25.9	74	92		83.0	S. E.	S. E.		5	9		F.	O.		8.25	40
" 6	29.47	27.0	45.0	12 5	92	63		77.0	S. W.	W.		17	25		O.	C.		3.15	.02
" 7	29.74	16.0	22.0	8.2	75	65		70.0	S. W.	S. W.		20	15		C.	C.			.00
" 8	30.13	22.5	30.0	15.0	70	95		82.0	S. W.	S.		12	8		F.	O.			.00
" 9	29.96	30.0	35.0	24.8	94	80		87.0	N.	W.		4	6		N.	T.		14.10	.12
Means for the Week																			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 16, 1889.

BERTOLETTE, D. N., surgeon, detached from the "Thetis" and wait orders.

HENNEBERGE, L. G., passed assistant surgeon, detached from "Minnesota" and to the "Thetis."

MARMION, R. A., surgeon, detached from "Juniata" and wait orders.

OGDEN, F. N., assistant surgeon, detached from "Juniata" and wait orders.

STOKES, CHAS. F., assistant surgeon, ordered to the "Minnesota."

WILSON, GEO. B., assistant surgeon, ordered to the Navy Yard, Mare Island, Cal.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S ARMY, FROM FEBRUARY 9, 1889, TO FEBRUARY 15, 1889.

The Medical Director will proceed to Fort Buford, Dak., on public business connected with the Medical Department, and upon completion of duty will rejoin his station. Par. 8, S. O. 14, Hdqrs. Dept. of Dak., St. Paul, Minn., February 5, 1889.

By direction of the Secretary of War, the leave of absence on surgeon's certificate of disability granted Major **LEONARD Y. LORING**, surgeon, in S. O. No 6, January 18, 1887, Department of Arizona, is extended six months on account of disability. Par. 23, S.O. No. 35, A. G. O., Washington, February 11, 1889.

By direction of the Secretary of War, Captain **ROBERT W. SHUFELDT**, assistant surgeon, having appeared before the Army Retiring Board at Fort Leavenworth, Kansas, in compliance with paragraph 1, S. O. No. 4, January 5, 1889, from this office, will repair to this city to assist action on the proceedings in his case. Par. 12, S. O. 32, A. G. O., Washington, D. C., February 7, 1889.

KILBOURNE, HENRY S., captain, assistant surgeon, having complied with paragraph 2, S. O. No. 6, Department of the Columbia, will return to his station, Vancouver Barracks, W. T. Par. 1, S. O. G., Hdqrs. Div. of the Pacific, San Francisco, Cal., February 2, 1889.

MEARNS, EDGAR A., captain, assistant surgeon, is relieved from temporary duty at Fort Pembina, Dak., and will rejoin his station, Fort Snelling, Minn., without delay. Par. 4. S. O. 14, Hdqrs. Dept. of Dakota, Saint Paul, Minn., February 5, 1889.

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. — A meeting for Scientific Improvement will be held at the Hall of the Roxbury City Guard, 67 Warren St., Roxbury, February 26, 1889, at 7.45 P.M. Communications: I Some Extracts from my Note Book, J. W. Starbird, M.D. II Some Clinical Observations upon Hysteria, C. F. Withington, M.D.

S. ALLEN POTTER, M.D., *Secretary.*

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, February 25th, at the Medical Library, at 7.45 P.M Readers: Drs. Philip C Knapp and E H Bradford Subject: A Case of Tumor of the Brain: Removal; Death.

F. B. HARRINGTON, M D., *Secretary.*

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — There will be a regular meeting of this society at 19 Boylston Place, on Monday evening, March 4th, at 8 o'clock. Readers: Dr. F. W. Page. "A Bussey Bridge Accident Case. A Review and a Criticism." Dr. F Orne Green. "Malignant Disease of the Ear. Parotid Tumors due to suppuration of the Tympanum."

T. F. SHERMAN, M.D.
Secretary.

APPOINTMENT.

DR. E. G. CUTLER has been elected a Visiting Physician of the Massachusetts General Hospital.

DEATH.

Died in East Cambridge, Mass., February 15, 1889, **JOHN BUNKER TAYLOR**, M.D., M.M.S.S., aged sixty-seven years.

OBITUARY.

ALMON M. ORCUTT, M.D.

Dr. Almoa M. Orcutt, aged sixty-four, of Hardwick, Mass., died February 11th, at his residence, of lung disease complicated with diabetes. He was born at Cummington, and taught school at Lee, and in the spring of 1845 he moved to Ware to study medicine with Dr. D. W. Miner. He remained there three years, teaching school one term at Ware Centre. He graduated from the College of Physicians and Surgeons at New York in 1849, and then practised a few months in Lee before the death of Dr. Stone, of Hardwick, in 1869, whom he then succeeded. He married Mary Ann Knight, of Hardwick, who survives him with three daughters. Dr. Orcutt frequently held public office, and at his death was town treasurer and a member of the school committee. He served as a representative in the legislature in 1847, and was a member of the committee on charitable institutions. He was a member of the American Medical Association, and of the Massachusetts Medical Society.

MARY HENDERSON STINSON, M.D.

Dr. Mary Henderson Stinson, who was resident physician in the woman's department of the State Lunatic Asylum at Worcester from 1869 to 1875, being the first woman ever appointed to such an office, died in Norristown, Pa., on Monday, aged seventy. She was one of the first graduates of the Woman's Medical College of Pennsylvania, and was a leading member of the Pennsylvania State Medical Society.

BOOKS AND PAMPHLETS RECEIVED.

The Electrolytic Decomposition of Organic Tissues. By George H. Rohé, M.D., Professor of Dermatology and Hygiene in the College of Physicians and Surgeons, Baltimore. Reprint. 1888.

Report of the Committee on Ophthalmology and Otology. By Seth S. Bishop, M.D., of Chicago. Reprinted from the Transactions of the Thirty-Seventh Annual Meeting of the Illinois State Medical Society, held in Rock Island, May 17, 1888.

Twentieth Annual Report of the Children's Hospital, Huntington Avenue, near West Chester Park, from December 28, 1887, to December 28, 1888. Boston, 1889.

Ninth Annual Report of the president of the Johns Hopkins University, Baltimore, Maryland 1884.

Angina and Pneumonia before 1857 and since; with the Pathology of Diphtheria in its Various Phases. By William Henry Thayer, M.D., Brooklyn, N. Y. Reprint, 1889.

Biennial Message of Richard J. Oglesby, Governor of Illinois, to the Thirty-Sixth General Assembly. January 9, 1889. Springfield, Ill., 1889.

Medical Monographs. No 1. The Diagnosis and Medical Treatment of Acute Intestinal Obstruction. By R. H. Fitz, M.D Cupples & Hurd

Food versus Bacilli in Consumption (Opus 286). An open letter from Ephraim Cutter, M.D, LL.D, to his son John Ashburton Cutter, M D., B.Sc With Answer. Reprint.

Obstetric Aphorisms for the use of students commencing Midwifery Practice. By Joseph Griffiths Swayne, M.D., Consulting Physician-Accoucheur to the Bristol General Hospital, etc. Ninth edition. Philadelphia P. Blakiston, Son & Co. 1888.

Lecture.

ACUTE PANCREATITIS.

A CONSIDERATION OF PANCREATIC HEMORRHAGE, HEMORRHAGIC, SUPPURATIVE, AND GANGRENOUS PANCREATITIS, AND OF DISSEMINATED FAT-NECROSIS.[1]

THE MIDDLETON GOLDSMITH LECTURE FOR 1887.

BY REGINALD H. FITZ, M.D.,

Shattuck Professor of Pathological Anatomy in Harvard University and Physician to the Massachusetts General Hospital.

SUPPURATIVE PANCREATITIS.

In order to more fully appreciate the relation which hemorrhagic pancreatitis may bear to pancreatic inflammation and hemorrhage, it becomes necessary to consider the evidence in favor of other varieties of acute pancreatitis. Although the authorities of the present day make but little mention of a suppurative inflammation, Lieutaud[39] in the last century alludes to cases of pancreatic abscess reported by Bartholinus, Tulpius, Aubert, and Patin.

Of twenty-one patients, seventeen were males and four were females; all were adults, whenever ages were mentioned, and in eighteen cases the age was given as follows: —

Years of age.	Number of cases.
From 20-25	3
" 25-30	4
" 30-35	2
" 35-40	2
" 40-45	3
" 45-50	0
" 50-55	1
" 55-60	1
" 60-65	1
" 65-74	1

Previous attacks of indigestion of greater or less frequency and severity were present in about one-fourth of the cases. These attacks were usually regarded as gastric or bilious. One patient suffered from sick-headache while another was subject to diarrhœa during his drinking-bouts. Three were distinctly intemperate, two might be regarded as gluttonous, and one was exposed to hard work and extra hours.

The immediate attack was precipitated in two instances by errors in diet, in the one case a probably putrid sausage having been eaten. The attack was greatly aggravated in a third case by a dinner of roast goose and cabbage. Two weeks of catarrhal symptoms with great debility were the antecedents of another case.

A striking feature in the history of these cases of suppurative pancreatitis is the tendency of this affection to become chronic. Of fourteen cases six were fatal in the first month, three during the second month, and five at various periods between four and eleven months. Death might take place at the end of the first week and even the more chronic cases often began with distinctly acute symptoms.

It is therefore desirable in the consideration of this series of cases to group them with particular reference to the rapidity of their course.

The cases of acute, suppurative pancreatitis usually began suddenly, with severe, generally intense, gastric, epigastric or abdominal pain, vomiting, and sometimes great prostration. The vomiting might be incessant and distressing, or it might give temporary relief to the pain. The ejected fluid was sometimes stringy and brown. The bowels were usually constipated, although diarrhœa might occur within the first twenty-four hours. This latter symptom was not infrequent at a later date of the disease.

Fever, usually slight, was the next conspicuous symptom, being manifested about the third day. At the same time the upper abdomen, especially the epigastrium, was likely to become distended, tympanitic, and sensitive. Hiccough, sometimes quite obstinate, was not infrequent at this stage, and occasional chills were to be met with. The abdomen, in general, then became moderately swollen, tense, and tympanitic.

With the violent onset and persistence of these symptoms death might occur, perhaps in the course of a week or more.[40] The pancreas then was markedly enlarged, reddened, and studded with hundreds of small abscesses, many of which had burst into the peritoneum. The associated fibrino-purulent peritonitis was most marked in the upper abdomen, In the second case,[41] where death resulted in eleven days, the attack was apparently recurrent in a corpulent person who had suffered for a year from symptoms which might be attributed to pancreatic disease. There were found in the pancreas numerous small, yellowish-white prominences, alone and in groups, with soft, pap-like contents. They were present on section as well as superficially. The contents were fatty-degenerated cells and detritus. The wall of the smallest cavities was infiltrated with round cells while that of the others was smooth. A group of these prominences were grayish discolored, gangrenous, the superficial peritoneum being perforated and shreddy. Similar nodules were found in the mesentery and in the transverse meso-colon. In the latter was a circumscribed necrosis with floating shreds and fresh, peritonitic adhesions. The pancreas was irregularly traversed by narrow and broad bands and by a diffused development of fat-tissue. Not only does the clinical history of this case suggest a recurrent and finally fatal attack, but the pancreatic lesions also point to a long-standing process. Fibrous bands, fatty-degenerated cells and smooth-walled cavities filled with detritus favor this view. The description of these nodules suggests that many of them were probably foci of fat-necrosis, with gangrenous sloughing of the superjacent peritoneum.

An acute, suppurative pancreatitis, however, very rarely terminates at this early date. The symptoms already described may persist for three or four weeks, with progressive emaciation and debility, and death occur from exhaustion. Under such circumstances the single abscess has been found surrounded with adhesions.

In another series of cases, beginning equally violently, there may be frequent chills and irregular, atypical, often high, fever, the maximum temperature being 105.8°. Slight jaundice may be associated. The pains extend into the hypochondria and may spread from this point downwards.

The liver, perhaps the spleen, may be palpably enlarged — the symptoms are conspicuously those of blood-poisoning, and the patient dies collapsed in the sixth or seventh week. An abscess as large as a hen's egg, filled with greenish-yellow pus, may then be found in the pancreas. Death at the end of seven weeks may result from the extension of the pancreatic abscess to the parapancreatic fat-tissue, with the production of multiple nodules of fat-necrosis.[42] In this case the symptoms of epigastric pain, vomiting, constipation, and swelling were interrupted by a period of several weeks of comparative comfort, to be followed by marked prostration, incessant vomiting, severe epigastric pain, and fever.

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[1] Continued from page 187.

[39] *Op. cit.*, i. 244.

[40] Case XLVI.

[41] Case XLIX.

Another event in the history of acute, suppurative pancreatitis is to be found in the course of the third or fourth week of the tense and swollen, painful and sensitive, upper abdomen which follows the pain, vomiting, constipation, and fever. A diarrhœa then becomes conspicuous, perhaps preceded by violent paroxysms of lancinating pain shooting laterally in the epigastrium, producing temporary collapse.

The loose stools may be thin, yellow, and feculent at the outset and then become profuse and watery. This symptom may then subside, with a lowering of the fever and a general improvement, to recur after a few weeks with fever and abdominal distention, progressive emaciation and increasing weakness, ending in death in the tenth week.

Several small abscesses have then been found in the enlarged and firm pancreas, with sclerosed peripancreatic tissue. Communicating sinuses unite these abscesses and open into the adherent stomach and duodenum. A splenic thrombo-phlebitis and a hepatic abscess may be associated, also a fibrinous peritonitis especially marked in the upper abdomen.[43]

The early symptoms may be less severe and the disease be announced by progressing weakness and emaciation. Loss of appetite, slight jaundice, perhaps diarrhœa, may occur. There may be neither fever nor pain, or there may be obscure symptoms of peritonitis. Finally, anasarca or ascites becomes apparent, and death occurs from exhaustion, perhaps at the end of five months. The pancreas may then contain a diffused abscess, following the course of the ducts and opening into the cavity of the lesser omentum, which was filled with pus, and in its turn emptying into the duodenum through a sinus in the mesentery, these conditions being associated with a fibrino-serous peritonitis. The pancreatic abscess may extend, at an earlier date even, to the omental cavity, thus forming a great pus-cavity extending as low as the lowermost coils of the ileum, and walled in by adherent intestines and stomach. The greater part of the pancreas may be destroyed. The common duct may open abruptly into the abscess of the pancreas, and leave it at the hepatic end. There may be an associated thrombosis of the portal vein continued into its primary sources, and the pancreatico-duodenal artery may be eroded, with hemorrhage into the cavity of the abscess. A recent peritonitis may be associated, and in one of these, somewhat protracted, cases with extension to the omental cavity, a bronzed skin was present.

Finally, there are the most chronic cases, which extended over a period of nearly a year. As a rule no severe pain occurs at the outset, but the patient gradually becomes weak and thin, vomiting may be frequent, and a sense of distention of the stomach after meals or of epigastric pain be complained of. There may be little or no fever, or periods when chills and fever occur. The stools may be consistent, not colored with bile, and very fetid, or later they may be very offensive and mixed with blood. There may be a free communication between the pancreatic abscess and the duodenum, or the latter may break into pultaceous shreds when handled. The entire pancreas may be converted into a trabeculated cavity filled with creamy pus and cheesy masses, or it may be indurated and infiltrated with pus. In one of these protracted cases[44] diabetes appeared after the third month.

Noteworthy in these cases of suppurative pancreatitis is the rarity with which a circumscribed tumor is to be found. A swollen, tympanitic epigastrium is the rule, and very rarely a circumscribed resistant spot was to be felt above the navel, to the left of the median line.

Jaundice occurred in less than one-fourth of the cases. It was then usually slight. Its intensity in one case was connected with abscesses in the liver and dilated bile-ducts.

Another fact of considerable importance is the, usually, small size of the spleen. The rule was that no enlargement was noticeable even in those cases in which the thrombotic obstruction of the splenic or portal vein was recorded. The small spleen was usually of normal density.

From the above consideration it is evident that there are cases, few in number, of acute, suppurative pancreatitis, which run a course similar to that described in connection with hemorrhagic inflammation. They may begin with equal suddenness, present the same grouping of symptoms, but are not so early fatal. They are more rarely associated with evidences of fat-necrosis, which were present in but two instances.

Although Klebs[45] regarded pancreatic abscesses, not arising from a peripancreatitis or from suppurating cysts, as of doubtful existence, it is apparent that this view is opposed by the evidence here recorded. It is also evident that the extension of an abscess from the neighboring lymph-glands to the pancreas is of extreme rarity. The only evidence in favor of this view is that offered by Portal[46] and in the case[47] reported by Smith. The possibility that a pancreatic abscess may be due to inflammation of the appendix is evident from Moore's case, although the connection between the two may have been through a mesenteric thrombo-phlebitis, arterial embolism, or through the coexistence of acute pancreatitis and appendicular inflammation.

The possibility that a pancreatic inflammation may be excited by the passage of a lumbricus into the pancreatic duct is admitted in connection with the appearances in Case XLVIII. It is still more probable, however, that the worm entered the pancreas after the establishment of the inflammation. Its presence there might be merely accidental, even taking place after death, as is likely to have been the fact in Case XL.

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[42] Case LV.

[43] Case XL.

[44] Case XLV.

[45] P. 21.

[46] P. 207.

[47] Case XLIII.

GANGRENOUS PANCREATITIS.

But the subject of acute pancreatitis deserves attention from another event, viz., its possible termination in gangrene.

The earlier medical writings contain occasional references to gangrene of the pancreas, but the evidence presented is so slightly objective as to make them of but little value for present needs.

Grisellius,[48] for instance, has been generally considered to have first called attention to this matter.

His patient, a man forty-two years of age, suffered from frequent colic, which was easily relieved. He was suddenly, without cause, seized with a chill and severe colic and died quietly in the course of eighteen or nineteen hours. The post-mortem examination showed an extreme quantity of abdominal fat. The pancreas was found sphacelated, in a large mass of fat. "In whose absence nature had supplied another like round mass, on the right towards the liver and attached to the sphacelated part. Veins ran through the middle, like Wirsungian ducts, but without order. This sphacelated pancreas distributed a like contagion, penetrating not only adjacent parts, but even the diaphragm, consuming the left lobe of the lung as in phthisis."

The liver is said to have resembled grumous blood, in color and in substance. There were several calculi in the gall-bladder.

"Other membranes were adherent at the bottom of the gall-bladder and held another stone larger than all."

Although the evidence does not permit an exact diagnosis to be made, it would seem as if the sufferings and death of this individual were rather attributable to biliary calculi than to pancreatic disease. The penetration of the diaphragm and the consumption of the left lung suggest that post-mortem softening of the stomach may have aided in producing the described appearances. The clinical history, brief as it is, affords quite a different picture from that to be presented as connected with pancreatic gangrene.

Bonetus[49] credits Barbette with stating that in a case of obstinate vomiting the pancreas was found wholly putrid, rather sphacelated. Again[50] he refers to the statement of Verzaschka that Glaserus found a semi-putrid pancreas in a case of dropsy.

Bonetus himself[51] records a case of dropsy in a boy in whom the pancreas is stated to have been semi-putrid.

In Lieutaud[52] there is extracted the case of a woman with obstinate vomiting, severe renal symptoms and pubic pain, in which the pancreas was semi-putrid, almost destroyed.

Also[53] that of a girl with swollen abdomen, hypogastric pain, purulent urine, and diarrhœa. The omentum and a large part of the mesentery were rotten. The liver filled almost the entire abdominal cavity. The pancreas was putrid and the whole left kidney purulent.

Again,[54] in an infant with dropsy, there was found a putrid omentum and pancreas. He reports[55] that Helvigius found a sphacelated pancreas, omentum and mesentery, also a shrivelled and putrescent liver, with a gall-bladder containing more than a hundred calculi, in a man sixty years of age, who was seized with gastric pain, obstruction of the liver, and dyspnœa; there was black jaundice and œdema of the legs.

He also[56] refers to a case of extreme dilatation of the bile-duct, where the head of the pancreas was swollen, dense, scirrhous, and pressed upon the opening of the cystic duct. The left portion of the pancreas was putrid. Finally, he credits[57] Bonetus with reporting a case of oft-recurring, obstinate, tertian fever, in which the pancreas and mesentery were found somewhat corrupted and sanious.

Schmidtmann[58] speaks of finding induration of the pancreas with appearances of inflammation and beginning gangrene in a case of chronic, suppurative nephritis with destruction of the bladder.

The case reported by Portal[59] is perhaps the first which demands recognition as illustrating the relation of pancreatic gangrene to hemorrhagic pancreatitis. He writes as follows: —

"Gangrene of the pancreas is the frequent result of inflammation. I have found it in several corpses, and especially in that of a merchant of St. Denis street, who during a period of more than two years suffered from severe attacks of colic. They were deep-seated, below the navel, and were often preceded or followed by nausea or vomiting. There was neither swelling nor induration of the lower abdomen; no dryness of the tongue nor thirst. He became much emaciated, the pains increased, the pulse quickened, the heat of the skin became acrid and very strong. The slightest touch of the lower abdomen became very painful. The urine was scanty and red. This state lasted some twenty days, when the patient died unexpectedly. I was present at the autopsy.

"The pancreas was violet-red and soft, a black moisture escaped from its surface, it was almost wholly gangrenous. The stomach and the duodenum appeared inflamed in places."

Although the above case is probably one of the disease now under consideration, the lack of detail in the clinical statement and account of the anatomical appearances makes its value rather historical than useful in determining the relations of the hemorrhage to the gangrenous affections of the pancreas.

Gendrin[60] reports a case which is likely to belong to the series, but which is deprived of a considerable part of its possible value by the lack of sufficient details, clinical as well as anatomical. He states: "We have seen a vast cavity in the region of the pancreas communicating with the jejunum, which was perforated an inch from its origin. The pancreatic tissue was lost in a dense, friable, reddish mass which formed the wall of the cavity, which was filled with a grayish, very fetid pus. The surrounding cellular tissue and the intestinal walls united in forming this suppurating tumor.

(To be concluded.)

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[48] Misc. cur. Med. phys. Acad., etc., 1681, Ann. iii. 65.
[49] Sepulchretum, 1700, lib. iii. sect. viii. obs. 54, vol. ii. 113.
[50] *Op. cit.*, ii. lib. iii. 478.
[51] *Op. cit.*, ii. liv. iii. 415.
[52] *Op. cit.*, i. 34.
[53] *Op. cit.*, i. 62.
[54] *Op. cit.*, i. 64.
[55] *Op. cit.*, i. 183.
[56] *Op. cit.*, i. 236.
[57] *Op. cit.*, i. 246.
[58] Hufeland's Journ. d. pr. Arzneykde, 1799, vii. 4te St. 16,
[59] Anat. Med., 1803, v. 353.
[60] Hist. Anat. des Inflam., 1826, ii, 239.

Original Articles.

THE TREATMENT OF POST-NASAL CATARRH BY THE REMOVAL OF NASAL OBSTRUCTIONS.

WITH AN ANALYSIS OF ONE HUNDRED AND TEN CASES.[1]

BY EDWARD REYNOLDS, M.D., AND ROBERT W. LOVETT, M.D.

In the latter part of last spring a very active discussion was going on in the medical journals as to the benefit derived from the removal of nasal obstruction in all sorts of cases of throat trouble, many of the writers claiming the most wonderful results for this treatment. At that time we were fortunate enough to secure for the summer months the very excellent throat clinic at the Boston Dispensary, having in view the possibility of deciding for ourselves what might be the grounds for the extravagant claims made in favor of this treatment, and hoping, perhaps, to formulate the results of our experimentation in order to present them to others; and this paper is presented rather in the hope of provoking discussion than because the results are in any way unusual.

This method of treatment is based upon the belief that it is the function of the nasal mucous membrane to alter the inspired air to a standard temperature and degree of moisture before it comes into contact with the mucous membranes of the pharynx, larynx, and trachea, and that if this function has been lost or seriously diminished, the consequent exposure of the upper air passages to untempered air necessarily results in an inflammation of their mucous membranes.

The theory does not deny that there may be, and are, other causes for these inflammations, but merely affirms that they are often associated with obstructive pathological conditions in the nose, and that when this is the case, prompt relief may be expected as soon as the obstruction to nasal respiration has been removed.

The importance of a proper nasal respiration has been experimentally demonstrated by Aschenbrandt in a paper on "The Function of the Nose," in which he shows that whatever the conditions of the outside air may be, it always enters the pharynx, after its passage through a normal nose, at a temperature of 30° C. (86° F.) and saturated with moisture.

This modification of the inspired air to constant conditions is effected by its intimate contact in the nose with broad sheets of mucous membrane, which are themselves kept at a constant temperature by the free circulation of the blood beneath them, and which are covered with a thin secretion, the fluidity of which is always maintained, in spite of its evaporation, by exosmosis of the blood serum into it.

This is the condition of the normal nose, but the vascularity which makes this mechanism efficient renders it also peculiarly liable to inflammatory swelling from comparatively slight causes; and the distance between the opposed mucous surfaces is normally so slight that a very moderate amount of swelling brings them into contact and, in whole or part, obliterates the lumen of the nose, a condition which is familiar to every one as the "stuffed-up stage" of a "cold in the head;" and it is a clinical fact that a series of such inflammations frequently produces a condition of chronic swelling by which the calibre of the nose is permanently diminished.

This condition renders it difficult to draw a sufficient quantity of air through the nose, the habit of supplementary mouth-breathing is at once set up, and from that time on, during the progress of the disease, the pharynx is exposed to direct contact with all the changes of the outside air.

The degree of nasal obstruction which must be present before mouth-breathing becomes necessary, and the amount of mouth-breathing which can be endured before pharyngitis appears, are matters in which different individuals vary greatly; but when pharyngitis is found in connection with nasal obstruction, it is now generally believed that it may fairly be considered to be dependent upon this, and that removal of the nasal obstruction will generally result in the disappearance of the pharyngitis; but whether or no such treatment is indicated in an individual case must always depend on the amount of discomfort complained of as compared with the severity of the treatment necessary for the removal of the nasal obstruction, which varies greatly with the cause of the stenosis.

Stenosis of the nose is produced by a variety of conditions, of which, setting aside adenoids, polypi, and other new growths, the most important and common are these hypertrophies of the submucous tissues over the turbinated bones, and the various forms of irregularity of the septum.

Of these the removal of new growths is well understood, as necessary for other reasons; and though the subject of the removal of deflections or exostoses of the septum for the treatment of post-nasal conditions is of great interest, our experience with it was so small that we desire to limit ourselves as far as possible to the consideration of the benefit to be derived from the much simpler process of removal of the hypertrophies of the external wall.

If the importance of the regulatory function of the nose is granted, it is evident that any process by which these hypertrophies are to be reduced should be one which produces contraction of the swollen submucous tissue without permanently destroying the all-important nasal mucous membrane.

The method which we pursued is detailed here, not as the only, or even the best, technique, but merely as a simple and ready method which requires but little apparatus and was found to be satisfactory during three months of daily use.

In the absence of a compressed-air tank, a couple of hand atomizers answer perfectly well, one to be used for cocaine, the other for Dobell's solution; beyond these, a nasal speculum, a probe, and a flattened piece of copper wire are all the instruments that are necessary.

The only reagents necessary are a 4% solution of cocaine, a little powdered cocaine, a supply of Dobell's solution, and a little Merck's chromic acid deliquesced to a tarry consistence by exposure to the air.

A cauterization having been decided upon, if the nose was so much obstructed that it could not be thoroughly cleared of mucus by blowing it forcibly, it was cleansed with a spray of Dobell's solution, and the Dobell's washed out with a spray of water before applying the cocaine (Dobell's solution precipitates cocaine); if it could be cleared by the patient a 4% solution of cocaine was sprayed in without the preliminary washing: After waiting from four to five minutes to obtain the full effect of the cocaine, a probe was passed in to test sensation: if the presence of the probe caused no pain, the chromic acid was applied at once, but in a large number of cases a stronger application of cocaine was necessary.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, January 2, 1889.

After some experimentation we found that complete anæsthesia could be obtained with a less dose of the alkaloid, by placing a little powdered cocaine on the spot to be cauterized than by spraying in a strong solution. The powdered cocaine was then applied, when necessary, by means of a copper applicator, such as was used for the chromic acid.

After waiting till complete anæsthesia was obtained, a little of the deliquesced chromic acid was smeared upon the applicator with a brush or bit of wood, and the nostril being held well open by a speculum, the applicator was made to apply the acid to the whole of both surfaces of the lower turbinated bone, unless the hypertrophy was very large, in which case only the anterior half was covered at the first sitting. It was necessary to be careful that the acid was not so thin as to drop from the applicator or turbinated body into the floor of the nose, in which case it produced unnecessary, though perhaps harmless, eschars.

The nose was next sprayed out with Dobell's solution until this returned uncolored, care being taken to incline the nose forward at this time, to insure the return of the solution through the anterior nares, and thus to avoid, as far as possible, the metallic taste and slight pharyngitis which were usually produced if the chromic acid was washed into the throat.

When the Dobell's solution returned clear, a small plug of cotton was placed in the nostrils, and the patient was directed to retain it for some hours if possible, and to return in a week.

If there was work to be done in both nostrils, the second was attacked as soon as the inflammatory swelling of the first had subsided. This sometimes occurred within a few days, almost always within a week.

If but one nostril needed treatment, it was not retouched until the surface had cleaned up after the separation of the first slough.

The treatment was continued by successive burnings until the turbinated bodies appeared to be of normal size from front to back.

It is claimed that after this use of chromic acid the hypertrophies are reduced by submucous cicatrization under the eschars more than by actual loss of substance, because the eschar made by this acid is so superficial that the mucous membrane is not completely destroyed, and is able to reproduce itself.

This claim was certainly confirmed by the appearance of the nose in those cases which we were able to examine some time after treatment was concluded. It was uniformly difficult or impossible to detect any evidence of the cauterization.

The following analysis of cases is the result of our summer's work presented plainly, partly as the results were recorded by us at the end of our service, but in the majority of cases based on a recent inquiry just made by means of postal cards, sent out to patients two or three months after treatment was ended. At the beginning of our service the method of investigation that we decided to pursue was to cauterize the mucous membrane covering the turbinated bones in every case of chronic pharyngitis where there was any hypertrophy, and by successive burnings to open the nasal passage freely, and to note the result. At the same time it seemed best to keep a certain number of similar cases under conservative treatment, by sprays and astringent applications to the throat, as a check to our observations, and finally to compare the results of treatment by the two methods.

Inasmuch as our experience in the diagnosis of diseases of the throat had been very limited, we did not attempt to subdivide the cases of chronic pharyngitis into classes, but we soon came to recognize that several conditions were constantly associated with nasal hypertrophy. These were, a chronic follicular condition of the mucous membrane of the pharynx, which was thickened and injected, a congested and irritable state of the throat, and, more rarely, a dry, whitened, and shining condition of the mucous membrane. All of these conditions were accompanied by the well-known symptoms of discomfort in the throat, a tendency to hawk and raise phlegm, and a certain amount of coryza. These were the cases that we classed as post-nasal catarrh and treated by the removal of hypertrophies.

Our records comprise the results in one hundred and ten consecutive cases taken as they came to the clinic without any selection on our part. They were in no way different from the ordinary dispensary patients. Every case which showed hypertrophy of the turbinated bones, whether it was enough to occlude the nose or not, was taken note of, and treated by chromic acid, or else kept as a control case under conservative treatment, and so far as possible similar cases were chosen for the two methods.

Of these one hundred and ten cases, seventy-five were treated by the removal of hypertrophied turbinated bones, thirty-three were kept under conservative treatment as a check, while in five, obstructing exostoses were removed by the saw.

The conservative cases were treated in the routine way, by a spray of Dobell's solution to the throat followed by a spray of zinc sulphate, or iodoform and ether, or by a topical application of glycerite of tannin or iodine and glycerine. Treatment was given three times a week, and the patients were encouraged to come regularly and also to take as good care as possible of their general condition. The results were most discouraging: a slight temporary relief followed in many cases, but it was not very marked or very lasting, and ordinarily, after coming a little while, the patients discontinued treatment of their own accord, and a recent enquiry addressed to these thirty-three patients brought out only twelve replies. Seven had been improved by the treatment, while five had received no benefit whatever. In short, our experience with conservative treatment tallied entirely with what we had been led to expect from the books on the subject.

Three cases are especially worthy of notice: they had been kept for some weeks on conservative treatment without being improved at all, and they were finally burned to see if that would have any favorable effect, and all three were benefited even by the first application of the acid.

Seventy-five cases were burned with chromic acid, and we have the end result in all but nineteen cases, obtained for the most part recently by sending a circular to the patients asking them to fill out an enclosed postal card and mail it to us. These cards speak for themselves, and they are all submitted unselected for your inspection.

Of the 75 cases, 16 were cured, 38 much improved, and 2 not benefited; 19 were not reported on.

Sixteen were burned only once: 4 of these were cured, 11 much improved, and 1 not helped; 18 were burned twice: 2 were cured, 16 much improved, and 1 not helped.

Twelve were burned three times: 5 were cured, and 7 much benefited, and 9 are entered as having been burned several times, of whom 5 were cured and 4 much helped. That is, of all the cases reported only 2 failed to be benefited. As a rule improvement began after the first treatment: we never burned more than one nostril at a time, and for several days there was a discharge like a cold in the head from that side, and occasionally a little sore throat, but as a rule the discomfort was very slight, only a sense of uneasiness being felt on that side. The slough separated in about ten days on the average, and then the side was ready to be burned again. One application of chromic acid was never enough to wholly remove any obstruction of much size, and sometimes it required three and four applications of the caustic to open the nasal passage sufficiently.

Sometimes when the speculum was introduced a great fold of hypertrophied mucous membrane as large as the end of one's finger was seen obstructing the passage completely; at other times the hypertrophy was considerable, but left a slit between itself and the septum through which the air passed, but not freely; while in a third class of cases the hypertrophy was slight, and seemed to offer only a relative obstruction. Sometimes the hypertrophy was in front near the nostril and at other times well back and almost out of sight, while more rarely the whole ridge from behind forward was much enlarged; with the largest hypertrophies, exostoses were apt to be found.

In general the patients did not complain of the nasal obstruction, nor did they often recognize its existence even in the severer cases.

In general the best results were obtained with the least discomfort where the hypertrophied turbinated bone was well in the front part of the nostril. The further back it was the more apt the burning was to be uncomfortable and the less pronounced were the results.

In many cases we were made able to see the results in the throats for ourselves; not only did the hawking and spitting grow decidedly less, but the mucous membrane of the throat assumed a more healthy appearance. In none of the cases where the noses were burned did we make topical applications to the throat.

In five cases we have the record that obstructing exostoses were removed by the nasal saw: one was cured, two were much improved, one was not helped at all, and one was not heard from. Our records in that respect are too few to draw any conclusions from, except to mention our only mishap, in noting that one woman had so severe a hæmorrhage from the bone some hours after leaving the Dispensary that she had to be admitted to the City Hospital, when it was easily stopped with appropriate treatment. This discouraged us from the removal of exostoses in out-patient cases, which accounts for the small number that we report.

Several of the cases which we burned once or twice, but had not completed by any means, write on their postals that the trouble is returning, although they were much helped at the time. Such a result was of course to be expected in those who had to leave town or for any reason discontinue treatment when it was only half finished.

We really treated a larger number of cases than we have been able to report here, because in the latter weeks of our service the clinic became so large that we failed to keep record of all the cases, but in unrecorded cases our experience was not in any way different from those already reported.

Considering the class of cases that we had to work upon, routine dispensary catarrh patients, mostly of long standing, the results are certainly remarkable. No one was more surprised than we were ourselves at the improvement. Again and again cases which had been treated by sprays and all sorts of methods off and on for years yielded almost at once to this treatment.

The indications which would lead one to adopt this treatment for the relief of chronic pharyngitis would be the presence of turbinated bodies large enough to cause obstruction to the free passage of air through the nostrils. A simple inspection with any sort of a speculum will determine that point.

In the middle degrees of hypertrophy our experience would lead us to regard cauterization as a useful resource in cases where other methods of treatment had failed to give relief.

— The board of censors of the Erie County New York Medical Societies have decided to proceed against all persons practising in Buffalo who are not members of one of the county medical societies. The movement is directly aimed against the various institutes which have been established in the city within the last few years. There is also some talk of proceeding against the Christian Science and faith-cure practitioners It is intimated that an effort will be made to change the existing law so that they can be reached.

Attention has been especially drawn to this latter subject by the case of a woman in that city, who, having pleuro-pneumonia, passed from the care of a regular physician into that of a Christian Scientist. For twelve days she was under his treatment and rapidly grew worse. She was then removed to a hospital where an operation for empyæma was successfully performed. The moral of the story is unfortunately somewhat marred by the reporter's account of the woman's condition. "She had empymia, followed by pyemia." "To enable the pleural cavity to heal, probably five or six ribs will have to be removed, making what is known as the Estlander operations. If the woman recovers at all, which would be almost miraculous, her right shoulder joint will probably have to be resecated."

IS STAPHYLORRHAPHY PREFERABLE[1] TO MECHANICAL APPLIANCE FOR CLEFT PALATE?

BY CHARLES B. PORTER, M.D.,

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For a great many years the operation upon cleft palate has been rarely done in this vicinity, and the cases have been referred to the dentist, to fit with a mechanical appliance. The operation of staphylorrhaphy is now as rare to see as a case of hospital gangrene. It seems to me that the time has come when surgeons should review the subject and try to arrive afresh at a conclusion as to whether a mechanical appliance, a thing which must be removed often to preserve cleanliness and occasionally renewed, is a worthy substitute for staphylorrhaphy in all or the majority of cases. Certainly among the poor, who can ill afford the expense of an obturator, an operation is desirable if successful only so far as to close the cleft and save the nasal fossæ from invasion by particles of food three or more times each day.

If I may be allowed to turn the discussion into definite channels I will present four points for consideration.

1. Is operation preferable to mechanical appliance? In what cases?
2. At what age should it be done?
3. Method of operation.
4. The after-training of the voice.

IS OPERATION PREFERABLE TO MECHANICAL APPLIANCE, AND IN WHAT CASES?

M. Trélat says operate in all cases except those *inoperable* from extent of the cleft, those *inoperable* from previous failures, those where the parents refuse a cutting operation. He gives two cases operated upon with great satisfaction to the patients, who had previously worn obturators.

Salter says a large number of the congenital clefts can be radically cured by means of a surgical operation, which is always preferable when practicable.

Many writers do not mention obturators, but by the number of reported operations indicate their preference.

AT WHAT AGE SHOULD OPERATION BE DONE.

Roux gives minimum 16 years; Dieffenbach, Sedillot, Fergusson, 12 years; Norton 2½ to 3 years (25 cases: 14 completely successful, 10 partly so, 1 failed on first attempt, but was successful at a later); Trélat 7 years; Langenbeck 7 years; Thomas Smith 4 years; Ehrmann some months; Billroth 4 weeks; Simon 15 days; Roye of Lausanne 8 days.

It seems to me that operation should be done as soon as there are teeth enough in the jaws to which a diaphragm may be fastened to protect the wound from the pressure of the tongue in swallowing, which is often the cause of failure.

METHOD OF OPERATION.

Operation consists in a thorough and almost generous refreshing of the edges of the cleft.

Detaching the soft parts from the under surface of the hard palate by means of a periosteum elevator, or curved scissors.

Placing of sutures about a quarter of an inch apart.

If there is any tension of the flaps of velum, parallel incisions must be made on each side, to such an extent as to relieve all tension; a gag must be used to separate the jaws during operation, and a diaphragm should have been previously fitted that it may be immediately introduced, and great care must be taken that it does not press upon the wound.

The operation should be done under ether, and it is possible that in some cases cocaine might be substituted.

The kind of suture is various, some using silk, variously prepared, some silver wire.

Children should be carefully watched during convalescence lest they introduce their fingers or solid food into their mouths and break down the union before it is firm.

A number of writers lay great stress upon necessity of relief from all tension of the flaps.

Edward Owen says "the relief of the dragging of the tensor and levator palati is rarely accomplished by simple transfixion of each half of the soft palate and making an incision through it forwards and backwards with a tenotomy knife. Success depends on the boldness with which these lateral incisions are made, and freely as I make them now I have no experience of sloughing of the parts."

THE SUBSEQUENT TRAINING

is most important, and without it no case is successful in benefited speech. Some go as far as to say that ignorant, uneducated persons and those careless about their speech are benefited neither by operation nor obturator.

Trélat says all belonging to the better classes and educated, operated between seven and twenty-four, are considerably benefited. Benefit according to age, previous and subsequent education, and the degree of *amour propre.* He gives two interesting cases bearing on this point — two foreigners, Portuguese and Roumanian, sixteen and seventeen years old, operated, weak in their original speech, but perfect in the French learned after the operation. Another, a girl operated at ten years, usually speaks well, but when at play she puts her feminine diplomacy to one side — or is angered — the good speech disappears and the bad returns.

I ought to say a word as to the danger. Statistics of infants and adults in favor of adults. If those over two years are taken the difference in favor of adults lessens and the number of successes in children increases. The principal danger is from shock, though one writer mentions a fatal case from inflammation spreading from the wound.

I have recently operated two cases: — 1. James A., aged fourteen months. Cleft of uvula, soft palate, and about a half inch of hard palate. The edges of the cleft were refreshed, the muco-periosteum raised from the bone, the stitches introduced with a curved, round needle held in a long needle-holder. Two lateral incisions parallel to the wound made. Stitches tied. Three days later the wound was covered with thick, pasty-white material, thrush-like in character. Syringed with a solut. hydrarg. bichloride, 1:2000, t.i.d.; on the next day wound looked better, but there was the same appearance over one of the lateral wounds. Wound apparently healed except at the site of the first stitch opposite hard palate.

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[1] Read at a meeting of the Surgical Section of the Suffolk District Medical Society, January 2nd, 1889.

At the visit the next morning, six days after operation, the wound was found torn open throughout its whole extent except the tip of the uvula. Upon inquiry as to cause, it was ascertained that the mother, a stupid woman, had given the baby a hard crust of bread from her own plate and not discovered by the nurse till the mischief had been done. The stitches were removed and the mother was recommended to bring the child when older for another operation.

Case 2. Maud I., aged sixteen. Congenital cleft palate extending nearly an inch into the hard palate. Patient desired operation on account of a catarrh which was troublesome and increasing, and which she felt was due to the irritation of food in the nares. Operation same as the preceding; wound closed by nine sutures. Fed for two days by nutritive enemata, on the third day a gutta-percha diaphragm was fitted to the roof of mouth to protect the wound from tongue pressure, and patient allowed to eat fluids and soft solids. Stitches removed on the seventh day. On the next day it was found that one stitch at the apex of wound had buried itself in the soft parts and been overlooked, this was removed, there was a tiny hole which closed in a few days. There was very little difficulty in the technique of the operation. The hemorrhage was a little troublesome. The operation was done with the patient in the sitting posture. Ether was not pushed to profound anæsthesia, but to the point of unconsciousness of pain.

THE MECHANICAL TREATMENT FOR CONGENITAL CLEFT PALATE.[1]

BY HENRY A. BAKER, D.D.S.

My experience with artificial appliances leads me to believe that if soft vulcanized rubber for an artificial velum could resist the fluids of the mouth and not go through a process of decay and roll out of shape, in short if it could be made permanent, it would be all that could be desired. Since this is impossible, I do not hesitate to say that it is a very objectionable material, and I have been led to long and careful meditation regarding it.

The Seurson appliance is made of a permanent material, and had it been made movable so as to be controlled by the levator muscles there would have been no need of further investigation beyond this appliance. Proving the faults of these two, I was induced to make the attempt to combine the main points of each, and after a few experiments was satisfied beyond a doubt that it would be a success. My chief aim was to select a permanent material and carry out the Stearns principle, whereby I could utilize the levator muscles to control the movement of the appliance. Of course it is impossible to give to a piece of mechanism muscular power, but it should be made movable so as to be acted upon by, and be under perfect control of, the muscles surrounding it.

In studying the mechanism of speech, we learn that more than three-fourths of the sounds of articulate language depend upon the integrity of the soft palate for their perfect enunciation. This being the fact, articulation with a rigid obturator must be extremely difficult to acquire.

If three-fourths of the sounds depend upon the free movement of the natural palate, it seems to me a sufficient reason why we should provide for that movement in an artificial one.

Dr. Kingsley says that with a yielding appliance the levators of the palate contribute largely to correct speech.

My studies and experiments have induced me to settle upon the following device, which consists of a gold or hard-rubber plate, covering the roof of the mouth down to the junction of the hard and soft palates; from this point the artificial velum extends back and downward, restoring the symmetry of the palatal surface by bridging across and lying upon the muscles of each side.

The distal surface, or that portion coming in contact with the pharyngeal wall, is quite broad and so constructed as to articulate perfectly with this surface, while the constrictor muscle contracts and closes around it on a semicircle.

This is the Seurson principle, and the main ideas I take from that appliance.

The velum is of hard rubber, gold, or platinum, and much resembles a chestnut in form. It is attached to the plate with a hinge joint, thus giving free movement at the junction of the hard and soft palates. At this point there is a stop which prevents any downward pressure upon the muscles when in a relaxed condition. The bulb-like form of the velum necessitated a thickness which would naturally have made it quite heavy, and as the resultant weight would be a serious objection, I was of course desirous of overcoming the difficulty. A suggestion happily came to my relief in this way; while in a drug-store I accidentally took up a hard rubber truss made by a Philadelphia firm, discovering that the pad was made hollow.

I thereupon wrote to the manufacturers, asking them if they would inform me how they prepared the rubber in that way.

In their reply I found the method was quite simple. It is as follows:—

Take the vulcanite rubber in the soft state and cut the sheets so that when joined together the desired form is given. Then a little water is dropped into the cavity, the edges are sealed, and the piece vulcanized in the usual way: the steam produced by the water inside creates sufficient pressure to keep the walls distended.

By this method the appliance was made so light that it would float when put in water.

The surrounding muscles have control over my appliance in the following way:—The artificial velum bridges across the opening and lies upon the muscles of either side. With all sounds requiring the closure of the nasal passage it is thrown up by the levator muscles, there being no resistance. The thickness of the velum brings its distal surface in close apposition with the superior constrictor muscle and thereby affords in the pronunciation of the gutturals a firmer resistance to the pressure of the tongue than can be obtained with a thin obturator. By the pressure of the hinge the above movements are rendered so free and easy that there is no tendency to any displacement of the plate, such as occurs with a rigid appliance.

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[1] Read at the meeting of the Surgical Section of the Suffolk District Medical Society, January 2, 1889.

If a nasal sound immediately follows a guttural, the descent of the velum is rendered certain by its own weight.

To accomplish the above with a material that would be permanent was a problem very difficult of solution.

I claim the following advantages for my appliance.

First, That it is made of a permanent material.

Second, That articulation can be learned with it more readily than with any other appliance.

Third, That it is much easier to make. For a soft-rubber appliance perfect models of both the hard and soft palates are required, as well as of the nasal portion of the soft palate; also metal moulds are essential to vulcanize each case.

I have inserted this appliance for the last eight years exclusively, and have seen no reasons why I should retract my claim or change for any other method. Whether I have succeeded or not I will leave for the audience to judge, after having presented two of my patients who are present this evening.

THE TREATMENT OF CONGENITAL PALATE FISSURES.[1]

BY G. F. GRANT, D.M.D.

It seems to me quite important that the treatment for palatal defects, if by apparatus, should begin at an early age.

This early treatment is of the greatest benefit in the development of speech, and fully compensates for the extra trouble and expense of readjustment which is made necessary by later changes in the size of the dental arch. If an artificial palate is inserted at the age of seven, it can generally be worn until twelve or even fourteen before a permanent readjustment is necessary.

It would seem that the changes in the arch and palate brought about by development of these parts in the growth of the child would affect the articulation unfavorably, but fortunately no such result follows. Nothing is needed in the way of treatment for fissure of the hard palate but a simple plate which restores the arch.

I quite agree with those who believe that simplicity of construction should be the characteristic of all such appliances, but in this matter much has already been accomplished.

At the meeting of the British Dental Association held in Dublin last August, I had the pleasure of demonstrating the practicability of an appliance which, while meeting every requirement of such cases, was of simple construction and could be easily repaired or readjusted by any fairly competent dentist.

Several other forms of artificial palates were exhibited there, though most of them, while showing improvement as to simplicity of construction, were still open to some objection in that respect.

A careful study of the normal palate, particularly in those persons who have trained their voices for singing or oratory, will convince any one that the purity of tone and flexibility of such voices depends in a great degree upon the mobility of the soft palate.

We notice that the normal palate does not move upwards from a fixed point like a hinge, but that it rises by two distinct arches and is always concave, though in the act of swallowing the posterior portion is nearly vertical. In the production of tones of very high pitch, like C and E above the staff, it is stretched nearly flat across the pharynx.

As appliances for the simple purpose of articulation, rigid or hinged semi-rigid obturators have been long successfully applied.

My observations respecting the comparative success to be expected in treating two classes of cases (namely, those which have been partly joined by surgical means and those in which there has been no interference) leads me to deprecate such interference unless the present state of medical science can provide for the introduction of sufficient new tissue into the fissure to ensure the entire closing of the cleft.

It is very probable that in the event of a grafting process being attempted, protection for the lingual surface could be afforded by a properly constructed appliance, and there are many cases of partial cleft of the soft palate where such a plan seems feasible.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

THE ANGLE BETWEEN THE MANUBRIUM AND THE BODY OF THE STERNUM.[1]

The following description of Louis' angle is from Hyrtl's "Topographical Anatomy." "The manubrium of the sternum is usually joined to the body of the bone by a fibro-cartilage which becomes ossified only at a ripe age. This cartilage allows a slight motion between the two bones, which is sometimes very clearly seen in narrow-chested children when they take a long breath. When the upper circumference of the chest is diminished in consequence of cicatricial contraction of the apex of the lung, such as occurs when tubercular deposits break down, the manubrium assumes a more oblique position, and forms a more or less prominent forward angle with the body of the bone. Louis was the first to call attention to the significance of this angle, and was rewarded for this happy thought by F. Conradi calling it *angulus Ludovici*." This angle is often referred to by German clinical teachers. Rühle,[2] describing the appearance of the consumptive chest says: "The *manubrium sterni* is bent backwards, and forms at the insertion of the second ribs the well known *angulus Ludovici*." In this country, however, we hear little or nothing of Louis' angle — which clinicians justly consider as of very slight significance. Prof. Braune has written a paper on this angle which is of value from the light it throws on some points of the mechanics of the thorax. In the first place, the theory of the formation of this angle presupposes that the walls of the chest adapt themselves to the surface of the lung, in support of which proposition he gives some frozen sections from Pirogoff through thoraces with pathological conditions. He then states that this angle does not always occur in phthisical patients, which none of our readers will dispute. He next goes to work to produce the angle artificially on the cadaver, and this is to us the most interesting part of the paper. He divided the sternum into a number of pieces by transverse cuts between the insertions of the costal cartilages, which were left undisturbed, and found that the sternum could be raised much higher than before and the capacity of the thorax much more increased. It appeared also that it was easy to form the sternal angle by raising the ribs excessively, and that it was less easy to obtain it by depressing the first piece of the sternum. Thus it is clear that the sternum restricts the limits of motion of the ribs, and it is not difficult to see that conversely at least some of the ribs restrict the motion of the sternum. In a number of the cases the following experiment was performed. A pipe was put in the trachea and the lungs inflated. It was noticed that as the breast-bone rose, the first piece tilted its lower end upward, forming the angle in question. The manubrium was then divided just above the second cartilage, the pleuræ being unopened. On repeating the inflation the manubrium moved much more freely; it formed a greater angle with the second piece from which it was separated.

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[1] Read at the meeting of the Surgical Section of the Suffolk District Medical Society, January 2, 1889.

[1] Archiv für Anatomie und Physiologie (Anat.), 1888.

[2] Ziemssen's Cyclopædia, vol. v. p. 532.

Braune concludes that Louis' angle depends essentially on strong inspiratory movements of the chest while the joint in the sternum is still soft and yielding, and that an emphysema of some duration in a young person would cause it. Thus it seems to be a characteristic of that form of chest which may be called the over-inspiratory, the direct opposite of the consumptive chest of which it is decribed as a sign. Braune thinks, however, that it is not impossible that the angle should appear in rare cases of extensive but well-localized shrinking of the apices of the lungs, which might cause a depression of the manubrium.[3]

THE ANGLE OF THE NECK OF THE FEMUR AND THE CAUSE OF THE SHAPE OF THE BONES.

It is still, we believe, commonly taught, at least in England and America, that the angle of the neck of the femur with the shaft is smaller (that is, nearer to a right angle) in women than in men, and that it also diminishes in old age. The former theory has been pretty effectually demolished ten years or more ago by Mieulicz, who from the study of large numbers of bones concluded that this angle was no guide to the sex of a femur, excepting perhaps that the very highest angles, which are only exceptionally seen, do not occur in the female.

Prof. Humphry touches on the question of sex incidentally, but gives particular attention to the question of the alleged change in the aged. He first measured thirty adult thigh-bones of unknown sex and age. The average length was eighteen and a half inches, and the average angle 124°, but there was much variation. On the whole the angle was less in short bones, most of which might be assumed to be female, and greater in the longer ones, most of which might be assumed to be male. The average angle of those less than eighteen inches long was 122.5° and in the others 125°. This proves nothing concerning the sex, for as Prof. Humphry points out, it "is to be expected, because the elevation of the pelvis above the knee, together with the narrowness of the pelvis, opens up, as it were, the angle of the neck of the thigh-bone with the shaft." He adds that greater deviations occur than might be expected.

He then took the angles of fourteen femora from persons above seventy, and found the average 123.7°. In one of these the angle was as low as 109°, but as there was a fracture and extreme fatty degeneration, it must be considered an exceptional case. On the other hand, two reached 131° and one 137°. He measured also the same bone in fœtuses and young persons. Among the former there is a tolerably clear diminution of the angle as growth progresses; among the latter it is not clear, and it must be said that this series, of only eight individuals from three and a half years to twenty, is far too small to be of much use.

His conclusions are as follows: —

1. "That the angle formed by the neck of the thigh-bone with the shaft varies considerably in different persons at any given period of life.

2. That it is smaller in short bones than in long bones; and that it is also most likely to be small when the pelvis is wide; the combination of these two conditions rendering it usually smaller in women than in men.

3. That the angle decreases during the period of growth; but that after growth has been completed it does not usually undergo any change, even if life be continued to extreme old age. Some changes may take place in exceptional cases, but as a rule the angle remains the same from the adult period till death, at whatever age that may occur.

4. That if during growth the limb be relieved of the weight of the body, as in the bedridden state, in paralysis, or in a stump, the angle of the neck with the shaft usually retains the open form of early life, or may even become wider."

We have said nothing of that part of the paper which leads up to the last conclusion, reserving it till after the mention of the paper read at Glasgow before the British Medical Association by Mr. W. Arbuthnot Lane on the result produced upon the muscles and ligaments by the habitual exercise of excessive strain[5] We alluded in our last report to this observer's theories. He is inclined to look on prominences of bone at the attachment of muscles as not necessarily in direct ratio to the development of those muscles, but to that of the strain these muscles or their tendinous portions undergo. He is inclined to look for the cause of the shape of the bones essentially in their statics and mechanics. He further believes that in old age prominences, no longer subjected to the strain that developed them, recede, and instances the atrophy of the tuberosities of the humerus in the aged. Prof. Humphry, when expressing his doubts that the angle of the neck of the femur is diminished in old age, declares that he does not know of a similar change occurring in any other part of the skeleton. The change of the angle of the jaw after the loss of the teeth is not a parallel case. He believes, however, that pressure has its effect in determining the angle of the neck of the femur. "Now, when the pelvis and hips are narrow,—as in early life, or in cases in which the thigh-bones are long, the weight falling in a considerable measure vertically upon the heads of the bones, or rather upon their outer parts, will give free scope to the inner parts of the epiphysial lines, and allow the development or persistence of a wide angle between the neck and the shaft. But when the pelvis widens, or in cases in which the thigh-bones are short, the weight falling more upon the inner parts of the epiphysial lines may tend to repress the growth of the neck in this situation, and lessen the angle between the neck and the shaft. This may account for the lessening of the angle during the approach to adolescence, when the pelvis is widening, and especially in women, in whom the pelvis widens most, and in whom the thigh-bone is short."

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[3] It is a curious fact that Prof. Braune tried in vain to find any allusion to this angle in Louis' writings, and that Prof. Thierfelder, of Rostock, whom he consulted, was also unsuccessful. The latter remembered, however, that Bock and Oppolzer taught that it was a sign of emphysema as well as of phthisis.

[4] British Medical Journal, Dec. 1, 1888.

We are tempted to ask what makes the female pelvis widen at puberty? According to Mr. Lane, if we understand him, it is the inherited effect of mechanical forces during pregnancy which determines the peculiarities of the female frame; but even if we accept the to us extraordinary theory that these causes are sufficient, we should be glad to know why the male does not inherit the tendency as well as the female.

It is high time, however, to return from this digression. Prof. Humphry goes on to give several instances in which the absence of pressure on the femur was shown by a large angle. One was a hydrocephalous child, aged about five, whose slender legs were evidently unequal to sustaining the great weight of the head. The angle on both sides was 148°. A striking case is that of a young man, who when quite young suffered an amputation of the thigh. The angle of the stump was 127°, and that of the sound femur 122°. In another case, however, of a man who had a thigh amputated in early life, the angle was 115° on both sides. This is one of the questions that will be finally settled, if ever, only by great series of observations of particular cases of which the history is known.

THE HYOID BONE AS A RACE-CHARACTER.

At the first meeting of the Association of American Anatomists held at Washington, in September, Dr. J. L. Wortman presented a paper in behalf of himself and Dr. H. ten Kate on the hyoid of some ancient Pueblo Indians.[5] They had examined ninety-seven bones from individuals of all ages, thirteen of whom were supposed to be very old. Three hyoids of the latter group were found with the left greater cornua joined to the body, and we are left to infer that in all the other cases the joint persisted.[6] This was apparently a remarkable similarity, and it was suggested that it might prove a characteristic of certain races, especially as German authorities generally taught that the horns are not united with the body, while French anatomists held the contrary. We believe this matter was brought up at the Convention of Americanists in Berlin last summer, and it is said that Prof. Virchow, and Prof. Flower, who was not present, but whose opinion was sought, expressed opposite views. At Washington there was apparently a good deal of uncertainty. One gentleman made the statement, which seems to us astonishing, that he had never seen perfect union between the body and the cornua. The whole question is a very interesting one, and we are glad to know that further investigations on the ossification of the hyoid are in progress.

THE CONSTRUCTION OF THE VENTRICLES OF THE MAMMALIAN HEART.[7]

Mr. Macdonald Brown read a paper on this subject in the Section of Anatomy of the British Medical Association, which is devoted chiefly to the right ventricle, and especially to the so-called moderator band. This structure, which is commonly described as of occasional occurrence in the human heart, he finds to be constant. Arising in common with the anterior papillary muscles near or at its base, it passes obliquely upwards and inwards, and becomes attached to about the middle of the septum rather nearer its anterior than its posterior aspect. Its size varies much. Moreover, its attachment to the septum is of uncertain situation and may be either simple or radiating, but it is always connected with the anterior papillary muscle. He found it in every one of one hundred human hearts, but in about fifteen of them it was attached so low on the septum as to appear almost like a simple trabecula. In every case it was muscular. Now, as the one described as of rare occurrence is said to be usually tendinous, we are not absolutely certain that it is the same structure which Mr. Brown describes as constant. We should mention that sometimes he finds a second smaller band near the apex, which may or may not blend with the larger. He found this band very common among mammals.

As to its function, he believes that the anterior papillary muscle counteracts over-distention of the right ventricle. It not only by its contraction pulls down the valves, but it also pulls up the wall of the ventricle, and by its trabecular structure acts on a considerable area. The moderator band not only pulls up the base of the papillary muscle but pulls it towards the septum. Mr. Brown has observed that at the beginning of pathological dilatation of the right ventricle the lesion is found behind the anterior papillary muscle and this band. There is one passage in Mr. Brown's paper which we find so contrary to all teaching that we question whether he has expressed himself as he means to. Speaking of the development of the heart he says: "By the rapid growth of the body of the fœtus, the left cavity is soon called upon to exercise much greater muscular power than the right; its walls therefore thicken much more than those of the latter cavity, until they reach the ordinary proportions of three to one." This would seem to imply that this proportion is reached during fœtal life, which is an entirely new doctrine. We should be glad to know on what authority it rests. Indeed, we do not understand the theory, for the ductus arteriosus is the direct continuation of the pulmonary artery.

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[5] The Medical Record, Sept. 22, 1888.

[6] From a paper on Science, Jan. 11th, 1889, we gather that they were ossified in some skeletons showing bone disease.

[7] Journal of Anatomy and Physiology, vol. xxiii., Jan., 1889.

ORIGIN OF SPINAL NERVES AND LOCALIZATIONS IN THE CERVICAL REGION OF THE SPINAL CORD.[8]

Mr. R. W. Reid read a paper before the Anatomical Society of Great Britain and Ireland on the relations of the superficial origins of the spinal nerves, that is to say, the points at which they appear on the surface of the cord, and the spinous processes of the vertebræ. As is well known, several authors have given tables showing these relations. It is to be borne in mind that there are two distinct reasons for discrepancies. One is the variations in the development of the spinous processes, and the other, variations in the cord itself. Mr. Reid thinks that on the whole the spinous processes are sufficiently definite landmarks. He found that the anterior and posterior roots of the nerves appear at the same level. He made six dissections to ascertain the positions of the origins of the nerves with mathematical accuracy. He found even in these few cases considerable variation. This is enough to prove that considerable reserve is necessary in applying the usual table to clinical data. The variation between the highest and the lowest point of origin of any given nerve is often that of two spinous processes and sometimes of three.

Dr. William Thorburn[9] reports a second series of very interesting cases of fractures and dislocations in the cervical region, some of them followed by autopsies, from which he attempts to locate the centres from the muscles of the arm.

He gives the following table.

Supra-spinatus	4th cervical nerve.
Infra-spinatus	
Teres minor (?)	
Biceps	5th " "
Brachialis anticus	
Deltoid	
Supinator longus	
Supinator brevis (?)	
Subscapularis	6th " "
Pronators	
Teres major	
Latissimus dorsi	
Pectoralis major	
Triceps	
Serratus magnus	
Extensors of the wrist —	7th " "
Flexors of the wrist —	8th " "
Interossei	1st dorsal nerve.
Other intrinsic muscles of hand	

Mr. Thorburn was not able to identify the centre for the brachialis, but, following Erb, assumes it to be near that for the biceps. In one very interesting case the cord was injured below the origin of the fifth cervical nerve without showing at first complete loss of the functions depending on those below it. A myelitis, however, soon destroyed them, and its course upwards was marked by the successive paralysis of muscles and groups of muscles. The intrinsic muscles of the hand and the flexors of the wrist were paralyzed from the start. The extensors of the wrist lost their power almost completely on the second day. The pectoralis major, latissimus, teres major, and the pronators went next, but the subscapularis held out longer than the muscles supplied by the fifth nerve. Another case of fracture and dislocation between the last cervical and the first dorsal vertebra, in which the patient lived ten days, showed a very similar sequence, though the subscapularis was paralyzed more in accordance with the table. It is to be hoped that many more such observations will be made.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

GEORGE H. MONKS, M.D., SECRETARY.

MEETING, Jan. 2, 1889, the Chairman, DR. E. H. BRADFORD, presiding.

The first subject for the evening was

THE TREATMENT OF FISSURES OF THE PALATE,

and DRS. G. F. GRANT[1] and H. A. BAKER[2] discussed the matter from the standpoint of the dentist. Diagrams and apparatus were shown and explained, and several patients with palatal clefts were introduced. As a rule, these patients were able to read and speak with great ease when the plate was in position; but their talk could scarcely be understood when it was removed.

PROF. BUTTERFIELD, who had for many years instructed patients with palatal fissures, in the art of speaking properly, made a few remarks, describing his method, the difficulties to be overcome, and the results usually obtained.

DR. C. B. PORTER then read a short paper on the

OPERATIVE TREATMENT OF CLEFT PALATE,[3]

and showed a little girl, upon whom he had operated with apparently the best of results not only as to the operation itself, but also in the subsequent ability of the patient to speak distinctly.

DR. J. C. WARREN gave some account of the history of the operation of staphylorrhaphy.[4] It was first attempted by Graefe, in 1817, and was first performed with success by Roux, 1819. About this time Dr. John C. Warren performed the operation in this country. These early operations were chiefly confined to the cases of fissure of the soft palate. Dr. J. Mason Warren first described his method of dealing with the more extensive fissures in the *New England Quarterly Journal* for 1843, in which article the dissection of the tissues for the hard palate is described. He also described an improvement in the operation on the soft palate, which "consisted in the relaxation of the tissues of the fissured velum by means of incisions made with strong curved scissors so as to divide the attachments of the soft palate to the tonsil and to the posterior pillar." . . . "The effect of this incision is at once seen in the almost complete relaxation of the parts so as to admit of their easy approximation and union by suture." Sir William Fergusson, of London, suggested and practised division of the levator palati muscles. The edges of the velum were also relaxed by lateral incision in the soft palate. Dr. Warren closed the cleft in the hard palate by dissecting of the coverings of the palate, from the edge of the fissure towards the alveolar processes, thus relaxing and bringing down to a horizontal plane the two halves of this portion of the cleft.

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[8] Journal of Anatomy and Physiology, vol. xxiii., Jan., 1889.
[9] Brain, October, 1888.

[1] See Journal, page 213.
[2] See Journal, page 212.
[3] See Journal, page 211.
[4] Surgical Observations, J. Mason Warren, M.D., 1867.

Langenbeck made lateral incisions near the alveolar processes, and introduced a periosteum elevator by means of which the soft parts were freed from the bone.

It has also been suggested to extend the plastic operation to the bone itself. but this has not been adopted, and probably will not be until a more accurate method of dividing the bone has been devised.

The dentists are entitled to great credit for the progress made in mechanical methods for relieving this deformity. How satisfactorily the speech has been improved by the surgical operation has not yet been demonstrated by tables of cases. When the obturator was introduced, it was claimed that in only 2% of the surgical cases was good speech obtained.

So far as can be determined in the light of present data, it would seem justifiable to attempt the surgical operation in the milder forms of fissure, where there are abundant soft parts to form a sufficient valve. The operation can also be employed for those whose circumstances do not enable them to purchase and keep in good order expensive apparatus.

Drs. R. W. Lovett and **Edward Reynolds** presented a communication on

THE TREATMENT OF POST-NASAL CATARRH BY THE REMOVAL OF NASAL OBSTRUCTION,[5]

and gave the results in 110 cases treated by themselves at the Boston Dispensary.

Dr. Vincent Y. Bowditch said he had listened to the paper by Drs. Lovett and Reynolds with great interest, especially as he had had the privilege of seeing some of their work at the Dispensary last summer. For the past year and a half he had been working in the same direction in his office practice, not only with chromic acid, but with the use of the nasal trephine invented by Dr. Holbrook Curtis, of New York, for the removal of exostoses, etc.

The results, as expressed verbally and by letter, have encouraged him to continue this method of treatment in all cases of laryngeal and nasal catarrh where obstruction to free nasal respiration occurs. He thought that until a comparatively recent period sufficient stress had not been laid upon the fact that the nose is the chief organ for respiration, rather than the mouth.

No one who has obtained relief, by means of removal of nasal obstructions, from the dry throat and tongue, frontal headache, and general malaise consequent upon a night of "mouth-breathing," can fail to recognize this fact.

As in all cases there is always danger of overestimating the value of a certain method of cure, so in this a certain amount of scepticism should be maintained when extravagant claims are made.

Dr. Bowditch believed that in many cases of asthma undoubted relief could be obtained by the removal of marked nasal obstruction, but felt very sceptical about the views held by some that all cases of asthma were dependent upon nasal abnormalities, and that every inequality of the septum as of the turbinated bones should be removed, whether there was absolute obstruction or not. In short, he believed that judicious and careful treatment of the nostrils, as described in this paper, marked a decided advance in the cure or improvement of catarrhal cases.

Dr. T. A. DeBlois said: I certainly must agree with the authors of the paper in their assertion that the turbinated bones form the greatest cause of the obstruction to nasal breathing. The obstructive hypertrophies appear to me to be situated at either the anterior or posterior extremities of these bodies. When situated anteriorly, it is my general custom to cauterize them with acetic or chromic acid; and in order to preserve as much as possible the integrity of the mucous membrane, I prefer to use a round rather than the flat applicator of Drs. Reynolds and Lovett, and I thus make a linear eschar along the hypertrophied surface, which in healing contracts and produces some loss of volume; then in repeating the cauterization I can either follow the old lines or make new ones.

Now, as to the posterior extremities of the hypertrophies, one is greatly struck with the difference in their size before and after the operation of removing them with the "snare;" by the traction of the wire they gradually part with their fluid before they are finally separated. For instance, this bottle of turbinated hypertrophies, which were each as large as the end of my finger, are now no larger than a large pea.

In conclusion, I must express how much I think we are indebted to Drs. Lovett and Reynolds for this very carefully prepared paper. It is seldom that we are able to keep so careful a record of dispensary patients, who are "here to-day and gone to-morrow, never to be found again."

Dr. H. L. Morse said: The series of cases reported by Drs. Lovett and Reynolds are particularly interesting to me, because, if I am not mistaken, a number of them were cases sent by me from the ear department, to have obstruction of the nose cleared away. In children especially, it is of the utmost importance, if the ears are to be treated, that the nares and posterior nares should be perfectly free, and treatment of the ears brings about only a temporary improvement to the hearing when the condition of the nose is neglected. Children have to be taught to keep the nose clear by the frequent use of the handkerchief, and to breathe through the nose whenever they are able to. When the posterior nares are blocked up by the pressure of adenoid vegetation, there is usually to be seen a dark-gray appearance of the membrana tympani, the membrana is much indrawn, the light reflex is small and broken, and the hearing is decidedly defective. Simply removing the adenoids without treating the ears at all often causes in children a most remarkable change: the hearing improves, the membrana regains its normal position, and the light reflex becomes normal in size and shape. I speak of these cases of removal of adenoid vegetations because they present a very striking picture of what may happen when the nose becomes blocked up, and is no longer used to breathe through. The same picture, more or less well-marked, is seen when the nares are obstructed by chronic thickening of the turbinated bones; and it is, in my opinion, so important for the ears that any obstruction in the nose should be removed, that while I am on duty in the ear department, many patients, particularly children, are sent to the throat department for treatment for their noses. I should like to ask whether, in the series of cases which they have reported, Drs. Lovett and Reynolds had any trouble after cauterization with adhesions, or found the nose become too patulous and too dry.

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[5] See Journal, page 208.

Dr. G. A. Leland: From almost nothing in my practice have I derived more satisfaction than from the expressions of patients for whom a free nasal respiration has been established, either by cauterizing enlarged and swollen turbinates, removing projecting spurs, or straightening deviated septums. But I have not dared to cauterize so freely as described by the gentlemen who have read the papers this evening. First, because of the danger of producing adhesions: and second, lest the normal erectility of the turbinated bodies be destroyed, and a dry, crusty, offensive catarrhus sicca be the result. The method of Bosworth, of New York, is pretty safe, viz., after blanching and constricting the mucous membranes as much as possible by cocaine, to apply to the most prominent parts, determined upon beforehand, a small bead of chromic acid fused on the end of a probe. This will cause enough condensation of the submucous tissue to "button down," as it were, this definite spot and will not injure the neighboring mucous membrane. For if the principal function of the nose is respiratory, to cleanse, moisten, and warm the inspired air, as has been rightly said in the paper of Dr. Reynolds, atrophic rhinitis wherein these functions are abolished should not be induced artificially. The danger of adhesions, mentioned by Dr. Morse, is a real one, having occurred in my hands once or twice when the patients have delayed presenting themselves beyond the specified time. These may be easily broken through by a probe at first, and applications made to induce healing, but if too old may require even the galvano-cautery knife, followed by a cotton plug, stiffened by a small splinter of wood and medicated to keep the surfaces apart.

The floor of the nostrils has been called the prolongation of the eustachian tubes, and when the effect of closure of the latter upon hearing is considered, the importance of free nasal respiration to the ears can hardly be overestimated. I have seen noted in English medical journals a state of collapse of the eustachian tubes, consequent on occluded nostrils because the sides of the pharynx were deprived of the stimulus of the currents of cool and warm air normally passing over them.

With regard to asthma, it is doubtless true that all cases are not dependent upon intranasal disease; but this is so frequently the case that in all cases the nose should be thoroughly examined. In a nostril more or less closed from the external air the mucous membrane covering the vomer and turbinated bones becomes engorged with blood, thickened, and irritable, and in certain cases a reflex asthma is produced. The cold air which should be applied to contract the blood-vessels of these surfaces and keep them in a normal condition enters by the mouth to induce chronic changes in the buccal pharynx,—a normal stimulus in the nose, it becomes an irritant in the throat. The restoration of the nasal air channels and a normal condition, including the destruction of their irritability, cures the asthma. I have in mind the case of an old lady, who in 1884 was suffering her twenty-third year of hay fever with asthma. The first symptoms came on invariably the latter part of August; the asthma began a month later, was at its height in November, and then gradually diminished till late in the spring, when only in April or May was she entirely free. During this time she could not sweep or dust, go out of doors in windy or snowy weather, or in the evening, or eat certain vegetables and fruits. She came to me first on September 10th. The second turbinates were engorged with blood, rough like a raspberry, tender, bleeding at touch, and exceedingly irritable, — the slightest manipulation of a probe causing asthmatic paroxysms. Cocaine was not then in use, and I had not made chromic, acetic, nor nitric acid a part of my armamentarium. The plucky old lady therefore allowed me to use a curette, with which at successive sittings, limited in duration by her grit and the amount of hemorrhage, I removed the diseased mucous membrane. Suffice it to say that in two or three weeks she began to lose her asthmatic symptoms, and by the end of October she was entirely free from it; nor has she sneezed, pathologically, since — about four years and a half. With present facilities such a result could be accomplished with almost no pain or discomfort either to patient or physician.

Drs. Reynolds and Lovett are to be congratulated upon the excellence of their results, and deserve the gratitude and commendation of the profession for the painstaking way in which they have pursued their inquiries among such an unsatisfactory class of patients as those of a dispensary usually are.

Dr. W. H. H. Hastings: I would like to call attention to two points. First, that the attendance in the throat room of the Boston Dispensary during the service of Drs. Reynolds and Lovett was larger than any previous corresponding quarter; and secondly, I should like to bear testimony to the satisfaction of the patients who received this method of treatment. I asked a number of them in regard to their condition, and they invariably reported that they had been very much benefited by what had been done for them.

Dr. C. B. Porter showed the urinary organs from a man, aged thirty-four, who died two days after admission to the hospital from what appeared to be the results of stricture of urethra, from which he had suffered for five years or more.

The specimen was particularly interesting as being one of

SURGICAL KIDNEY.

The diagnosis as made at the autopsy, so far as the urinary organs were concerned, was: chronic hydronephrosis, tuberculosis (?) of left kidney, dilatation of the ureter, hypertrophy of the bladder, diphtheritic cystitis, stricture of the urethra.

— A remarkable case of chronic hydrocephalus is reported from Hanover, N. H. When twenty-eight months old the child weighed fifty-two pounds, and the head was estimated to weigh forty to forty-five pounds.

NEW YORK ACADEMY OF MEDICINE. SECTION ON PÆDIATRICS.

Stated meeting, January 23, 1889. J. Lewis Smith, M.D., Chairman.

R. H. Chittenden, Ph.D., professor of Physiological Chemistry in Yale University, read a paper on

OBSERVATIONS ON THE DIGESTIVE FERMENTS.

It was divided into three sections, as follows: (1) The digestive ferments in normal digestion; (2) The conditions modifying their action; (3) Trypsin and pepsin as solvents of pseudo-membranes.

In recent years, he said, a marked development in our knowledge of the physiology of secretion, digestion, and absorption had taken place, and chemical science had thrown no little light on the composition and character of the digestive juices and on many hitherto obscure points in the metamorphism of the various food-stuffs, while at the same time it had taught us to appreciate its value in the study of scientific medicine. There was, he thought, no branch of medicine where an accurate knowledge of physiological processes was so necessary as in the pathology of digestion; and among the more recently acquired facts pertaining to digestion, none were of more importance than those relating to the digestive ferments, for without the action of these unorganized ferments the nutrition and life of the organism would be impossible.

The more important digestive ferments or enzymes were of two kinds, the amylolytic and the proteolytic. The ptyalin of the saliva, and the amylopsin of the pancreatic juice, and the diastatic ferment of the bile were examples of the former, and the pepsin of the gastric juice and the trypsin of the pancreatic fluid of the latter. With all our present knowledge we could not add much to the definition of a ferment current in the 14th century, viz., a force which without becoming weaker itself can produce great effects in other masses." While this was not strictly true, we could only wonder at the marvellous power often displayed by an infinitesimally small amount of a ferment, and endeavor to explain its method of action by the term catalytic, which clearly exposed our ignorance while it fostered our self-esteem.

The amylolytic and proteolytic ferments were alike in that they act only in the presence of water, that the products of their action contain as a rule more oxygen and hydrogen than the original matter, and that their action is most energetic at the body temperature. They differed, however, in the medium in which they act; the amylolytic ferments being most energetic in a neutral fluid and wholly inactive in the presence of free acid, while pepsin acted only when in combination with an acid. Trypsin, on the other hand, acted best in an alkaline medium, although active also in a neutral fluid. These ferments were extremely sensitive to the action of foreign matters, and the simple changes of reaction from acid to alkaline and *vice versa* met with in the alimentary tract were sufficient to destroy the different ferments as they were exposed to the changed conditions in their journey onward; so that it was no doubt true that only such escaped destruction as were absorbed and ultimately excreted through the kidneys.

In considering some of the conditions which modify the action of these unorganized ferments Prof. Chittenden said that on account of the many conflicting statements that had been made in regard to them he ventured, out of his experience in the laboratory, to present the results of his own observations, enlarged somewhat by those of others which seemed to him worthy of credence. It was to be always borne in mind, however, that the living alimentary tract was a somewhat different mechanism from a glass beaker, and that in the former we had to deal with a complication of conditions not met with in artificial digestions. In considering the action of the amylolytic ferments he took the ptyalin of saliva as an illustration of a normal digestive ferment, and the diastase of malt as a good example of a common remedial agent.

In spite of its normal reaction being alkaline, human saliva's power of digesting starch was far greater when the fluid was exactly neutral than when alkaline, a difference which showed still more distinctly the more the fluid was diluted. The ferment acted most energetically in a neutral fluid, and the same was true of diastase; while increasing the alkalinity of the fluid, either diastase or saliva, tended to retard the amylolytic action of the ferment in proportion to the amount of alkali carbonate present. Dilute alkalies not only hindered the action of these amylolytic ferments, but also destroyed them, especially at the body temperature, though their destructive power was not as great as their retarding action. Peptones and proteid matters in general, however, tended to diminish, and even prevent, in part, the retarding and destructive action of the dilute alkalies. Hence in the intestinal canal and elsewhere where the products of proteolytic action or the other forms of proteid matter were present, the amylolytic ferments might endure the presence of amounts of alkalies which alone would quickly lead to their destruction. Towards acids, both ptyalin and diastase were more sensitive even than towards alkalies.

It had been generally held hitherto, and even now was to some extent, that both these ferments regain their power of transforming starch into sugar when they reach the small intestine, where the contents are alkaline; this view assuming that in the stomach the activity of these ferments is simply suspended by the acidity of the gastric juice. He was quite convinced from his experiments, however, that the presence of a few thousandths of one per cent. of pure hydrochloric acid is sufficient to quickly stop all amylolytic action; though it was to be borne in mind that because a fluid reacts acid to test-papers it does not necessarily follow that it contains free acid. Hence the question of retardation and destruction of amylolytic ferments in the stomach needed further consideration. It was necessary to know how the presence of proteid matter affects the action of the acid of the gastric juice, and it was found by experiment that nearly all forms of albuminous matter prevent to a certain extent the destructive action of the acid. The acid-proteids formed, however, had more or less of a destructive action themselves, and when all the proteid matter present in a given mixture was completely saturated with acid (although no free acid might be present), the amylolytic ferments soon lost their power, and in a short time were completely destroyed. Hence it followed that while the proteids of the food probably protect for a time the ptyalin or other amylolytic ferments introduced, in a very short time, by combining with the hydrochloric acid as it is secreted, these must become saturated, and free acid be present; and as soon as free hydrochloric acid is present, or even before, a rapid destruction of the amylolytic ferments will take place. To this destruction would be added also the slower action of the acid-proteids. The length of time after the digestion of food before free acid makes its appearance in the stomach was variable; depending in great part upon the amount and character of the food taken.

There was, he thought, among many physiologists a growing impression that for from fifteen to thirty minutes after taking food an active digestion of starch goes on in the stomach. Ewald and Boas, however, had found that where starch paste was eaten free hydrochloric acid appeared in the stomach very quickly. In one case the ingestion of the starch-paste was followed by the appearance of free hydrochloric acid in ten minutes. In no case was lactic acid found in the ejected matter. These same investigations had also in part confirmed the statements of Prof. Chittenden regarding the action of acids on the amylolytic ferment of saliva by a series of interesting clinical experiments. The most important point in connection with these was the fact that such conversion of starch as did occur in the stomach under the circumstances noted took place during the first five minutes; the amount of sugar found in the ejected fluid being the same at the end of five minutes as at twenty minutes. Further, the amount found was quite small, indicating that the ferment was quickly stopped in its action by the acid present. He thought it could be safely concluded, therefore, that the action of the diastasic ferments can at the best continue only for a short time in the stomach, and that the cessation of amylolytic action is quickly followed by destruction of the ferment, through the action of the free and combined hydrochloric acid. Hence it was obvious that the administration of diastasic ferments, however active, by the mouth, with the intention of supplementing the pancreatic digestion of starch in the small intestine, can be of little value, since the ferment must inevitably be destroyed before reaching the seat of action.

The extreme sensitiveness of the amylolytic ferments towards acids was substantiated by their behavior towards many common therapeutic agents. Many of the so-called antiseptics and germicides likewise showed marked action on these ferments, even when present in very small quantities. The bichloride, iodide, and bromide of mercury all retarded the action of the amylolytic ferments, even when present in a few thousandths of 1%. Mercuric cyanide, however, appeared to increase their solvent action when present in small quantities; while large percentages of it retarded their action. Sulphate of copper had a very marked inhibitory action, but acetate of lead had a retarding action only when present to the extent of 2% or 3%. Arsenious oxide and ammonium arseniate in small fractions of 1%, both caused neutral saliva to convert a larger amount of starch into sugar than the saliva alone would do, while arsenic acid retarded the action of the ferment. Tartar emetic in small amounts had a marked stimulating influence, but larger amounts, as 50%, very noticeably diminished the amount of sugar found. Potassium chlorate in small quantities increased the action, while the presence of even 5% of the salt had only a slight retarding effect. Sodium chloride, likewise, had a slight stimulating action, and large percentages caused only a slight diminution in the amount of starch dissolved. Many of the alkaloid salts had a stimulating effect on the salivary ferment, notably the sulphates of morphia, quinia, cinchonine, cinchonidine, and atropia. Sulphate of strychnia, however, had a slight retarding effect, and the same was true of antipyrin and antifebrin. Methan in small fractions of 1% had a slight stimulating action, while larger amounts diminished the quantity of sugar found. Thallin sulphate in very small percentages had a noticeable stimulating action, while paraldehyde had a marked inhibitory effect. Of gases, oxygen and carbonic acid both decidedly increased the amount of sugar formed by neutral saliva, while hydrogen noticeably diminished the action of the ferment.

Pepsin, the best known of the proteolytic ferments, had been the subject of study for many years. Among the many facts connected with its action which it was important to remember was that the acidity of the gastric juice is mainly due to free hydrochloric acid. The elaborate experiments of Bidder and Schmidt still stood the test of criticism; and while at many times, especially in disordered conditions of the stomach, there were present in its contents lactic, butyric, acetic, and possibly other acids, these were to be looked upon as the products of various forms of fermentation, rather than as secretory products from the stomach cells. As to the quantity of hydrochloric acid in active gastric juice, 0.2% was usually taken as the average; but it could be easily shown by experiment that the strength of acid best fitted for digestion depends somewhat on the amount of ferment present and the character of the proteid to be digested. It was also to be remembered that while the proteolytic action of the ferment is most vigorous in the presence of hydrochloric acid, other acids will to a greater or less extent take its place, viz., phosphoric, nitric, sulphuric, oxalic, acetic, lactic, hydrobromic, hydriodic, etc. Whenever bromides and iodides were taken into the stomach they were supposed to be decomposed by the acid of the gastric juice, with the formation of hydrobromic and hydriodic acids respectively, by which the retarding action of these two salts on gastric digestion is produced. Hence, as a practical result, the bromides and iodides should be given from half an hour to an hour before meals.

There were, he believed, many diseased conditions where imperfect digestion is due as much to the want of the necessary acid as to lack of ferment. Thus, in fevers, as a rule, from whatever cause, a less active gastric juice than normal was secreted. The acidity was frequently diminished, and hence, as Ewald had remarked, there was some basis for the old habit of prescribing phosphoric or hydrochloric acid in fever mixtures.

In regard to the action of trypsin and pepsin as solvents of pseudo-membranes Prof. Chittenden thought this was a matter deserving the attention of the profession. He had found that both these ferments had this effect, but, as far as he was able to judge, pepsin was the more energetic agent of the two in dissolving such membranes.

Recent Literature.

Practical Anatomy: A Manual of Dissections. By Christopher Heath, F.R.C.S. Seventh edition. Revised by Rickman J. Godlee, F.R.C.S. With 24 colored plates, and 278 engravings on wood. Philadelphia: P. Blakiston & Co. 1888.

We cannot say that this book at all corresponds to our idea of what a "dissector" should be. There is no denying, however, that it is a success, as is proved by the demand for a new edition. An attractive feature is the reproduction of many of Maclise's plates with the arteries and veins colored. The new edition has, we believe, but few new features. We are glad to find four mediastina, and that the author agrees with Prof. Wood about the position of the arch of the aorta. The section on the brain has also been revised, but we think hardly sufficiently, and we must protest against the old division of the cranial nerves into nine pairs. We must also repeat our old criticism that a smattering of histology is quite out of place in a work of this kind.

La Mort par la Décapitation. Par le Dr. Paul Loye. Paris. 1888.

This book is a fascinating study upon a very grim subject. It illustrates French enthusiasm for thoroughness. Here are many pages devoted to a detailed description of the behavior of dogs when their heads and bodies part company by the act of decollation. Here, too, are many pages elaborately and minutely setting forth the phenomena which attend and follow decapitation of the human subject as they are illustrated in capital punishment on the guillotine. The entire motive of this curious work is to answer these questions: "Does consciousness survive decapitation? Can the head. suddenly severed from the body, still think, will, suffer? Does the unhappy convict, in the act of paying his debt to justice, feel the horrible wound which the executioner's axe inflicts?" Leaving aside all sentiment, and approaching his work in the same spirit with which he would undertake a chemical experiment, the author has studied the problem in its physiological and medico-legal relations, beheading dogs in large numbers and "assisting" at several judicial executions. And the conclusions are that the questions which the author set himself to answer are to be answered unequivocally in the negative; and that for judicial purposes death by the guillotine is in the highest degree to be preferred to any other method; being superior to hanging, strangling, shooting, and electric shocks, in that it causes immediate abolition of consciousness and renders impossible any restoration to life. In short, as a remedial agency directed by justice against crime, it fulfils its purpose, as we may infer from the author, "cito, tuto, et jucunde."

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A MEDICAL DEFENCE UNION.

In these days of actions for malpractice and threats of suits, the minds of medical men are often turned towards the possible means of protection. Nothing has yet been suggested that seems to meet the emergency, but in England there are means taken which may not be wholly inapplicable to our own country. English journals have recently reported the meeting of a Medical Defence Union, of which Mr. Lawson Tait is the president, and Dr. Granville Bantock the treasurer. The objects of this association must commend themselves to our medical men, as it attempts to protect individual members against vexatious proceedings and attempts at blackmail, and also to check irregular practice.

The annual report shows that the forces of the Union have not yet been called into play to defend an action at law brought against a member on professional grounds, but that the organization and funds of the Union will allow this to be done at any time. It is pointed out that the first important case of this description, which may occur at any time to any one, will at once and for all justify the existence of the Union in the eyes of even the most obtuse and improvident member of the profession, and we shall not be outraged by seeing in the columns of the medical journals the oft-repeated appeal to charity for funds to defend a medical man in trouble. Important cases of this class occur comparatively seldom, and the chief work of the Union has been in minor, though important, channels; but it may confidently be asserted that the existence of the Union alone has been the means of preventing more than one action being brought against medical men. The energy of the Union has also been directed to check irregular practice, but with only partial and unsatisfactory results. The chief and most notorious advertising quacks appear to have studied the law very carefully and know how far they may safely go. One piece of work mentioned as accomplished by the Union is, materially helping in securing the conviction of an allegal spiritualist and faith healer, with an American diploma, for assaulting a young girl under his care.

It is to be hoped that the experience gained by this English Union may at some time prove of service in the formation of an American Society with a similar object.

THE INFLUENCE OF BITTERS ON THE DIGESTION AND ASSIMILATION OF ALBUMINOID MATTERS.

Some experiments made by Leven[1] go to show that the ordinary bitters (extracts of cinchona, quassia amara, nux vomica, gentian, etc.) promote for a time digestion and assimilation; they are, however, soon followed by loss of appetite and dyspeptic troubles. According to Leven's interpretation, these medicaments excite the solar plexus and energize the activity of the gastric glands and muscular movements, but soon produce by exhaustion a diminution of this activity and an irritated and congested state of the gastric mucous membrane.

Several years ago Buchheim and Engel undertook a series of experiments to ascertain the influence of bitter substances on digestion, and concluded that "these substances have no action on the transformation of albumen into peptone, and they oppose fermentation." It is by virtue of this property, according to these physiologists, that bitters act so favorably in certain diseases of the digestive tube.

Since then, Tschelzoff, chief of Prof. Botkin's clinic, has taken up anew this interesting question of the influence of bitters on digestion and on the nutrition of the animal organism in general.[2] His conclusions are "that extracts of the so-called pure bitters which are usually prescribed with the view of stimulating the secretion of gastric juice, and of aiding digestion, so far from having any beneficial action of that kind, are absolutely injurious, in that they retard the digestive functions." He experimented with extracts of aurantium, gentian, trifolium, absinthium, columba, cascarilla, and quassia, on (1) gastric digestion and the secretion of gastric juice; (2) pancreatic digestion and the secretion of pancreatic juice; (3) the secretion of bile; (4) fermentation; and (5) nitrogenous metamorphosis. He arrived at the conclusion that bitter extracts, even in small doses, interfere with artificial gastric digestion, and also with the gastric digestion of animals, but not to so great an extent. Large doses of bitter extracts diminish the secretion of gastric juice, although small doses effect a slight and transitory increase of it, the digestive power of the fluid being, however, in all cases diminished. Bitter extracts have no effect on the secretion of pancreatic fluid, but they nevertheless retard hypogastric digestion. The action of bitter extracts on the secretion of bile is various: extract of absinthium, extract of trifolium, and large doses of extract cetrarin slightly increase it, while extract of quassia, extract of calumba, and small doses of extract cetrarin have no effect at all. Bitter extracts have no antifermentative effect, but rather hasten and promote fermentation, especially in large doses. The putrefaction of blood and urine is favored by the presence of pure bitters. With regard to the effect of bitters on nitrogenous metamorphoses, the Russian experimenter found that under their influence the quantity of waste nitrogen in the urine and fæces was increased; in other words disassimilation was accelerated, while on the other hand assimilation was diminished.

It would seem from these experiments that bitters are of very questionable utility in the treatment of digestive disorders. It will not do, however, to adopt this conclusion without considerable reservation; experiments made in test-tubes in the laboratory and experiments on animals should not be allowed to outweigh the results of clinical observation; and to quote the words of Lauder Brunton, "the evidence of clinical experience in regard to the utility of bitter extracts is so strong that it is plain, either that the experiments have been imperfectly conducted, or that we must look to some other organ than the stomach for an explanation of the beneficial action of bitters in dyspepsia.[3]

MEDICAL NOTES.

— The well-water in use in Omaha has been examined recently, and the city physician reports to the mayor that according to the ten tests made, the only pure water used in Omaha is that which comes from the pipes of the water-works company.

— "Medical science has made such progress," said the doctor when speaking of the profession, "that it is almost impossible for anybody to be buried alive now." Then he wondered why everybody laughed. — *Pittsburg Dispatch.*

— Connecticut is considering a bill requiring veterinary doctors to take out a license as a prerequisite to practising in that State. No similar precaution has yet been thought necessary for the protection of human beings.

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[1] La Nevrose, Paris, 1887, page 31.

[2] Bull. gen. de ther., t. cxl. p. 10. London Lancet, 1886, part 1, p 938.

[3] Pharmacology, Therapeutics, and Materia Medica. Am. Ed., p. 365.

— Among the States that are now considering the passage of laws regulating the practice of medicine are Massachusetts, Pennsylvania, Missouri, and Michigan. In the hearing before the judiciary committee of the Massachusetts legislature Ex-Governor Gaston represented the petitioners for the proposed law and C. J. Noyes, Geo. M. Stearns, and Drs. Buchanan and Moore appeared as the chief speakers for the remonstrants.

— An incorporated benevolent society of Cleveland, Ohio, known as the Good Samaritans, a branch of the spiritualistic lyceum, held an important meeting recently, in which resolutions against vaccination were passed. In presenting the resolutions to the press of the city, a prominent member of the society said to a reporter: "You may say for me," said he, "that I think the compulsory vaccination law is an outrage. As far as I am concerned I would as soon see my children in the coffin — what you term dead — as have them vaccinated."

— A story regarding a dream of President Lincoln just before his assassination was frequently related by the late Prof. Proctor, and has lately been repeated in a lecture on psychical phenomena by Dr. Drayton of New York.

It was at the Cabinet meeting the day before the fatal shot was fired. Lincoln said: "Gentlemen, something very extraordinary is going to happen, and shortly, too." He was asked why. "Don't know," he replied, "but I have had the same dream three times, once before Bull Run, once before another disastrous battle, and again last night." When asked its character he said: "Well, I am on a great river, and I am in a boat adrift — adrift. But this is not business." Next night he was shot.

— From a report laid before the Dominion Parliament, it appears that there are at present nineteen lepers confined in the Dominion lazaretto at Tracadie, New Brunswick — eight males and eleven females. During the year two new cases were admitted from the surrounding country. Last year one of the male lepers escaped from the institution to the United States, where he has been located by the Dominion officials.

— Mrs. Eddy, of Christian Science notoriety, recently lectured in New York. She said, among other things, as reported: "I have found by actual experiment that as the drug is attenuated its power is increased, until, when the drug is all gone and there is only mind, its greatest efficacy is reached."

— The statistical report of the New York Cancer Hospital, One Hundred and Sixth street and Eighth avenue, from December 7, 1887, the date of the opening of the institution for the reception of patients, up to January 1, 1889, shows that 278 patients were admitted during that period, 246 of whom have been discharged, leaving 32 still remaining in the institution; the average daily number of patients was 25.72; 148 were treated free of charge, the other 130 paying either full or part board.

The number of days of treatment has been 10,008, the number of days of gratuitous treatment being 6,072. The average time of each patient's treatment is 36 days. Not a death has occurred, and 93 persons were discharged as completely cured.

— The *Savannah News* asks, Should a physician ever whip his patient? and answers the question by saying that the matter was brought up for decision at a Berlin police court some time ago. A doctor was asked to prescribe for a boy four years of age, who was suffering from slight ailment, but the child screamed so violently that it was impossible to examine him. After trying for a long time to soothe the child, the physician resorted to the old-fashioned method of giving him something to cry for, and boxed his ears. The child's mother not only resented this, but showed her resentment in a practical manner by summoning the doctor for assault, but the court decided that the medical man had acted for the patient's good, and so acquitted him.

— The Homœopathic Mutual Life Insurance Company of New York is progressing in its proceedings for voluntary dissolution. The directors of the company represent that the stock, effects, and other property of the corporation are not sufficient to afford a reasonable security to those who may deal with it. The company has taken no new business for two years, and has devoted all its valuable assets to the liquidation of claims. It has now but little beyond the securities deposited according to law with the Insurance Department at Albany. There are outstanding three hundred and eighty-seven policies, amounting to $219,401. It is estimated the amount to be paid on these will be $78,548, which, with death claims now pending, will make a total due on policies $82,348. Total assets $104,576.88.

— An epidemic of the most virulent character is reported to have broken out among the Chippeway Indians in the Cold Lake district, north of Fort Pitt, Manitoba, where the great massacre took place in 1885. Messengers report that the redskins are daily dying off by hundreds. Exactly what the disease is cannot be ascertained, but from the description given by the messengers, medical men think it is either small-pox or scarlet fever of the most malignant type. Those persons who have come from the reserve declare, according to press reports, that if prompt action is not taken to prevent the spread of the contagion the whole tribe of Chippeways will soon be exterminated. This tribe is not included among the treaty Indians, and it has been noted as among the most thrifty and industrious of all Indians in the Canadian Northwest.

— At a recent hearing before a legislative committee in Boston on the proposed bill regulating medical practice, "Mrs. Dr. Drew," of Lowell, addressed the committee in support of her own rights as a natural healer. "I have no sheepskin parchment," she said, "but I have that which is grander, the signatures of hundreds of my patients." She then read sworn statements of several of her patients. One was of her removal of a "living reptile" from a lady's stomach by her clairvoyant and other powers. "Dr." J. D. Moore, of Boston, said: "The people of Boston are waking up to the fact that it is more in accordance with common sense to be cured by an irregular practitioner than to be killed by regulars with their poisonous drugs." Dr. Moore claims that he could have cured President Garfield, or Emperor Frederick.

— Vague rumors have been heard of late indicating the possibility of strained relations between Sir Morell Mackenzie and the Royal College of Physicians. These rumors gain in verisimilitude from the following letter from Sir Morell Mackenzie's secretary to Sir Henry Pittman, M.D., registrar of the Royal College of Physicians, which is given in cable dispatches: —

"No. 19 Harley Street,
"Cavendish Square, Feb. 4, 1889.

"Sir, — I am requested by Sir Morell Mackenzie to express his surprise that you should have written to him on behalf of the Royal College of Physicians. I am further instructed to inform you that Sir Morell Mackenzie takes no interest whatever in the proceedings or opinions of the College of Physicians, and to request that as the representative of that body you will do him the favor to desist from all further intrusion.

"I am, Sir, your obedient servant,
"Edward Nainby Nainby."

BOSTON.

At a late meeting of the Massachusetts Medico-Legal Society representatives of the daily press were present for a time before their presence was discovered, when they were requested to withdraw. The subject of the meeting was arsenical poisoning, especially as exemplified in the series of Robinson murders, and considerable stress was laid on the simulation of various medical diseases by chronic arsenical poisoning. The rejected reporters, in their chagrin at being excluded, published in their papers that it was shown at the meeting that doctors could not distinguish arsenical poisoning when they had it before them, and this evidence of the incompetence of the medical profession was at once taken as a text for editorials aimed at the proposed medical bill now being considered by the Judiciary Committee of the legislature.

— The jury returned a verdict in Boston recently of $150 for the plaintiff in the case of John Behan *vs.* James M. Daly et al. The action was brought to recover damages from the defendants, who are dentists, for extracting a sound instead of an unsound tooth.

NEW YORK.

— The New York Academy of Medicine has made a formal protest against the enactment of a bill that has been passed by the Assembly, but not by the State Senate, withdrawing all the indigent insane belonging to Madison county from the State asylums and returning them to the county institutions. This measure is in direct opposition to the State Charities Aid Association Bill providing for State care of the insane, similar to the one introduced into the legislature last year, the object of which, briefly stated, is to bring all the pauper and indigent insane, whether acute or chronic cases, under the care of the State, by transferring to State asylums the insane from the poorhouses of the eighteen so-called exempted counties, and by completing the system of State care for the insane. It is proposed to divide the State into as many districts as there are State asylums; to require the insane from each district to be sent to the asylum situated therein, to be maintained and treated at the expense of the State; and to erect additional, detached, inexpensive buildings on the grounds of the existing State asylums, at a cost not to exceed $400 per capita, adequate for the accommodation of the increased number of patients, and when such buildings have been completed, to prohibit the detention of the insane by county authorities. The recent report of the committee on the insane of the State Board of Charities shows the condition of the insane in the various counties where they are still retained in the poorhouses to be even worse than had been previously supposed.

Within the last fortnight six insane convicts were transferred from Clinton Prison and four from Auburn Prison to the State asylum for insane convicts at Auburn; and it is the opinion of the prison superintendents and keepers that the present enforced idleness of the convicts is the cause of the increase of cases which has recently been noticed.

There has been introduced in the legislature a bill authorizing the municipal authorities to establish and maintain a cheap public bath and wash-house in the premises now known as Essex Market. The free swimming baths being open, of course, only in the summer season, it is felt that the health of the city will be promoted by affording bathing facilities to the poor during the rest of the year.

Miscellany.

A STATISTICAL STUDY OF SLEEP AND DREAMS.

An interesting investigation upon the above subject has recently been made under the auspices of the University of Dorpat, Russia. Some five hundred circulars were sent out with a series of quite definite questions, which were answered with equal detail by one hundred and fifty-one students, one hundred and thirteen other males, and one hundred and forty-two females. The questions and answers, together with the conclusions drawn therefrom, are to be found in *Science* for February 1. For the former, though very interesting, we have not space. The latter we reproduce in substance.

The results for the two sexes were so different that they demanded separation, while the students formed a homogeneous class interesting as a special study. The first problem that was proposed was the relation between the frequency and the vividness of dreams. It appears that 62.5 per cent. of those who dream every night dream vividly, 60.5 per cent. of those who dream frequently, and only 26.8 per cent. of those who dream seldom, showing that the vividness of dreams increases very rapidly with their frequency.

Next, how is the intensity of sleep related to the frequency of dreams? Of the students who dream nightly, 68 per cent. have a light sleep (and only 28 per cent. a deep sleep); of those dreaming frequently, 40 per cent.; of those dreaming seldom, 32.8 per cent. Similar percentages for the other males are 68.8, 42.1 and 39.3; and for women, 72.4, 60, and 50 per cent. We conclude, then, that frequent dreams are a concomitant of light sleep, though the relation is far from universal.

As regards sex, women have 73 per cent. of their number dreaming nightly or frequently, while students have only 50 per cent., and the other males 48 per cent. Again, 63 per cent. of the women sleep lightly, and only 42 per cent. of students, and 44 per cent. of other males. We conclude, then, that women have a very much lighter sleep than men, and that their dreams are proportionately more frequent.

Another conclusion, the evidence of which is too detailed to present, is, that as we grow older, our dreams become less frequent, but our sleep becomes lighter; age affecting the intensity of sleep more than the frequency of dreams. The author regards the students as in the period of maximum dreaming (twenty to twenty-five years of age). The deep sleep of childhood (hostile to frequency of dreams) is then least counterbalanced by the lessening of dreams due to age. The vividness of dreams shows a similar relation to age and sex: the women dream most vividly; the students, being younger than the other men, have more vivid dreams. The power of remembering dreams is also dependent upon vividness and frequency of dreaming: it is accordingly greatest in women, and greater in students than in more mature men. The liveliness of the emotional nature, a prominent feature of women and youth, seems thus to be marked out as the causative agent in the production of dreams.

The duration of sleep should naturally be related to the habit of dreaming, but in the men no such relation can be discovered. In the women, however, it appears that those who dream frequently sleep nearly an hour longer than those who seldom dream. This difference is regarded as due to the fact that men are more under duty to break short their sleep, and thus vitiate the statistics. This is corroborated by the frequency with which the men who dream frequently declare themselves tired in the morning, indicating incomplete sleep. The need of sleep is greater in women than in men; the duration of sleep being longer, and the percentage of "tired morning and evening" and of "not tired" being 3 to 2 and 2 to 3 respectively as compared with the men. Students sleep longer and are less tired than other men.

The time needed to fall asleep is about the same in all three classes, — 20.8 minutes for the men, 17.1 minutes for students, and 21.2 minutes for the women. In each case, however, it takes longer for those who are frequent dreamers and light sleepers to fall asleep than persons of opposite characteristics. Eighty per cent. of students sleep uninterruptedly through the night, 70 per cent. of other men, and only 43 per cent. of women. Light sleep and frequent dreams increase the interruptedness of sleep.

The power of falling asleep at will is possessed by few. It is greater in youth than in age. Twenty-eight per cent. of men, 19 per cent. of students, and 20 per cent. of women sleep in the afternoon, indicating a making-up of insufficient sleep on the part of the men.

The effect of dream habits upon mental work is also evident. Those who dream seldom, or sleep deeply, are better disposed for work in the forenoon than light sleepers and frequent dreamers. The forenoon seems in general to be the preferred time of work.

The statistics regarding nervousness confirm the accepted fact that this is greater among women than men. It is greater among students than other men at large. It is, too, a concomitant of light sleep and frequent dreams. As to temperament, the phlegmatic people are quite constantly deep sleepers and infrequent dreamers.

Finally, a contrast between teachers and professors of the same average age shows the effect of the occupation. The teacher, with his daily toil, has a lighter sleep and more frequent dreams; while the professor, leading a comparatively congenial and worriless life, is a deeper sleeper and a less frequent dreamer.

ALLEGED ILL-TREATMENT OF AMERICAN DOCTORS IN CENTRAL AMERICA.

A story is reported by press despatches of the persecution visited upon two New York State physicians at Aspinwall, which ended in the death of

Dr. H. J. Purdy, of Seneca Falls. Dr. Purdy prescribed medicine for a patient in Panama, who died in two hours, and the authorities arrested Dr. Purdy and his partner, Dr. Charles H. Utter. Dr. Purdy, while in prison, was taken ill and died. Under date of January 9th Dr. Utter wrote a long letter to Dr. Lewis, of Auburn, in which he said: —

"On October 11th three men were brought to our office, all suffering from syphilitic rheumatism and blood-poisoning. Dr. Purdy examined them, gave them all the same kind of treatment, and they went away. On the morning of the 14th we were both arrested and taken before the Alcade. When I asked why I was detained, he said that there were charges preferred against us for poisoning a man. I saw a bottle of medicine on the Alcade's desk, and they said the medicine was poison, and asked me what I knew about it. I told them what was in the medicine and drank a little of it. After they had taken my evidence they put Dr. Purdy and myself in a room together, where we were locked up. The doctor's evidence was the same as my own, and he drank a portion of the medicine also. That satisfied the Alcade that there was no poison in the medicine, but they did not let us go.

"The next day they dug up the dead man and took his stomach, liver, and kidneys to the government chemist, together with the medicine. He found no poison. All he found in the medicine was a little iodia potassii, which the doctor swore he put up for the man. Then they said they did not know how much iodia potassii it took to kill a man, and I sent to my office and got Van Buren as an authority, and showed him where a man had taken nine hundred and sixty grains in twenty-four hours and no death occurred, whereas the patient was taking only about twenty-four grains. We were kept in prison about four weeks."

The letter goes on to say that Dr. Purdy came down with yellow fever in prison. He suffered there for five days, when he was taken to the hospital, where he died. Utter says he has as yet had no trial.

A DRAINAGE BILL BEFORE THE ILLINOIS LEGISLATURE.

An important bill is before the legislature of Illinois, drawn, we believe, by the officials of Chicago, but in the interest of the whole state. Its more important provisions are thus given by the *Chicago Herald*: —

The drainage bill in question provides that contiguous territory within a single county and containing two or more incorporated cities, towns, or villages may become incorporated as a sanitary district upon the petition of three thousand voters to the county judge and the adoption of the scheme at the November election following such petitioning. For the management of such district nine trustees shall be elected, to serve by threes for one, two, and three years, their terms to be determined by lot. Thereafter three trustees shall be elected each year. Such sanitary district is empowered to sue, hold real estate for corporate purposes, select officers and fix their compensation, pass rules and regulations for management of the district and the carrying out of its purposes; construct one or more channels for the disposal of the drainage and sewage of the district, together with such adjuncts as may be necessary to render them effective; establish and control docks along such channel, if navigable, and control any water-power incidentally created within the limits of such channel. The trustees are authorized to pay for improvements either by general taxation or by special assessments under certain restrictions. The district is made liable for real-estate damages caused by overflow or through construction. It is specified that any channel constructed to carry sewage beyond the limits of the district must be large enough to permit a continuous flow of water — at least 20,000 cubic feet of water per minute for each 100,000 population in the district; and the water must be kept inoffensive and not injurious to health, and all solids must be taken out of the sewage before it is allowed to go into the channel.

Correspondence.

Boston, Feb. 25, 1889.

Mr. Editor, — In your issue of February 21 certain figures are quoted from official reports as to the extent to which milk adulteration prevails in Boston, and you inquire "why it is that the State Inspectors find essentially 50% of the samples below the standard each year, with no diminution since 1885, etc."

The plain inference from your query and from the results of the special investigation which you claim to have made is, that the quality of milk sold in Boston has deteriorated since 1885, or at least, has not improved. To this I reply that *it is a matter of common knowledge that the reverse of this proposition is true.*

The percentage results which you quote from the reports of the State Board of Health are based on a very small number of samples — 69 in 1884–5, 118 in 1885–6, 16 in 1886, and 367 in 1887. The averages which are given in the reports of the Milk Inspector of the city of Boston are based upon tests of from 9,000 to 10,000 samples per annum — nearly 40,000 in all. All samples in the slightest degree below 13% of solids are by the State Board reported as "below the standard," a statement perfectly true, but one which, nevertheless, gives a very imperfect idea of the true state of facts. For example, if 100 specimens of milk were tested and every one gave 12.99% of solids on analysis, it would be reported that "100% were below the standard," while at the same time a more intelligible statement would be that they were all substantially good. If you will look at the report of the State Board of Health for 1886, pages 80 and 81, you will find the perfectly just claim made that there had been a great improvement in the milk supply of 1886 over 1884, particularly in certain cities, among them, Gloucester and Newburyport, and yet if you will examine the details of the figures as given by Dr. Harrington for these cities on page 169 of the Supplementary Report for 1884, and on pages 124 and 128 of the Report for 1886, you will find that, based on percentages, one would be led to the very erroneous conclusion that the milk of these cities had deteriorated.

	Gloucester.	Newburyport.
Percentage of samples below the standard, 1884	33.33	18.51
Percentage of samples below the standard, 1886	41.66	28.57

The inferences naturally to be drawn from your editorial appear to me to make a most unjust reflection on the work of the State Board, for it is certainly not true that after four years of their work in Boston there has been "no diminution since 1885" in milk adulteration.

JAMES F. BABCOCK.

[If we understand Professor Babcock, he says that the State Board has based its figures on a small number of samples, while the city inspector has based his figures on a very large number of samples; that the State Board reports as below the standard all samples below 13% solids, a method which gives an "imperfect idea of the true state of facts." To this second item of the methods of the State Board he does not oppose any statement of the methods of the city inspector, but the natural inference seems to be that the city official, in order to give a more perfect idea of the true state of facts, does *not* report as below the standard all samples below 13% solids. In other words, he leads us to infer that his report is based on the standard of *substantial goodness* of the milk-supply rather than on the legal standard. If such inference is the correct one it gives a perfectly comprehensible method of reconciling the results of the State Board and the city inspector. In that case the inspector's report would mean, not that eight and a fraction per cent. only are below the legal standard, as the report states, but that eight and a fraction per cent. were not "substantially good."]

REPORTED MORTALITY FOR THE WEEK ENDING FEBRUARY 16, 1889.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diph. and Croup.	Scarlet Fever.	Measles
New York	1,526,081	786	349	21.84	18.98	8.45	6.11	3.32
Philadelphia	1,016,758	—	—	—	—	—	—	—
Brooklyn	751,432	364	157	21.12	18.76	13.44	2.52	1.12
Chicago	760,000	242	116	17.22	18.04	11.48	1.23	2.05
St. Louis	449,160	167	71	25.20	15.60	13.80	—	2.40
Baltimore	437,155	155	58	9.10	9.75	5.85	—	—
Boston	407,024	185	56	14.58	16.74	8.06	—	2.04
Cincinnati	225,000	144	—	7.59	11.04	3.45	.69	—
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	108	31	11.04	23.92	3.68	.92	—
Pittsburg	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	31	7	12.92	6.46	6.46	—	—
Portland	40,000	17	—	—	29.60	—	—	—
Worcester	76,328	28	13	3.57	32.13	—	—	—
Lowell	69,530	40	17	5.00	25.00	—	—	—
Cambridge	64,079	22	7	13.65	—	4.55	4.55	—
Fall River	61,203	32	11	12.52	18.78	—	3.13	—
Lynn	51,467	13	—	—	7.69	—	—	—
Lawrence	40,175	11	5	18.18	—	9.09	—	—
Springfield	39,952	17	4	17.70	17.70	17.70	—	—
New Bedford	36,298	10	2	10.00	—	10.00	—	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	13	2	7.69	—	7.69	—	—
Chelsea	27,552	4	1	—	—	—	—	—
Haverhill	24,979	3	1	—	33.33	—	—	—
Taunton	24,796	8	1	12.50	—	12.50	—	—
Brockton	24,784	9	2	22.22	—	22.22	—	—
Gloucester	23,187	3	1	—	—	—	—	—
Newton	21,105	11	3	9.09	9.09	9.09	—	—
Malden	18,932	8	3	25.00	25.00	25.00	—	—
Fitchburg	17,534	5	3	20.00	10.00	—	—	—
Waltham	16,651	8	2	—	12.50	—	—	—
Newburyport	13,839	7	2	14.28	14.28	14.28	—	—
Northampton	13,419	—	—	—	—	—	—	—
Quincy	13,728	7	—	28.56	—	28.56	—	—

Deaths reported 2448; under five years of age 929; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 427, acute lung diseases 415 consumption 294, diphtheria and croup 220, scarlet fever 63, measles 41, diarrhœal diseases 31, whooping-cough 26, typhoid fever 24, malarial fever 9, erysipelas 7, cerebro-spinal meningitis 5, small-pox 1. From diarrhœal diseases, New York 12, St. Louis and Boston 4 each, Brooklyn and Baltimore 3 each, Washington and Lowell 2 each, Cincinnati 1. From typhoid fever, New York and Chicago 4 each, Cincinnati 3, St. Louis, Boston, Washington, and Charleston 2 each, Brooklyn, Baltimore, Worcester, Lawrence, and Fitchburg 1 each. From whooping-cough, New York and Brooklyn 10 each, Chicago and Washington 2 each, St. Louis and Cambridge 1 each. From malarial fever, St. Louis 6, New York, Brooklyn, and Baltimore 1 each. From erysipelas, Brooklyn 3, New York and St. Louis 2 each. From cerebro-spinal meningitis, New York 2, Boston, Cincinnati, and Washington 1 each. From small-pox, New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM FEBRUARY 16, 1889, TO FEBRUARY 22, 1889.

Leave of absence for one month, to take effect between March 1st and 15th next, is granted Major J. V. LAUDERDALE, surgeon U. S. army. Par. 2, S. O. 9, Hdqrs. Dept. of Texas, San Antonio, February 15, 1889.

By direction of the Secretary of War, Captain FRED. C. AINSWORTH, assistant surgeon, will proceed to New York City and Brooklyn, N. Y., on public business. Par. 15, S. O. 38, A. G. O., 1889.

By direction of the president, Captain ROBERT W. SHUFELDT, assistant surgeon, will proceed to Fort Leavenworth, Kans., and report in person to Brigadier-General WESLEY MERRITT, president of the Army Retiring Board at that place, for re-examination by the board, and on the conclusion of his examination will return to this city. Par. 13, S. O. 40, A. G. O., Washington, D. C., February 16, 1889.

By direction of the Secretary of war, Captain JAMES E. PILCHER, assistant surgeon, will repair from Fort Wood, New York Harbor, to Philadelphia, Penn., on or about February 23, 1889, for the purpose of giving instruction to the hospital corps of the 1st Brigade, National Guards of Penn.; on completion of this duty will return to his proper station. Par. 1, S. O. 4, A. G. O., February 18, 1889.

HARRIS, HENRY S. T., 1st Lt., assistant surgeon U. S. army, will proceed to Fort Davis, Texas, so as to arrive there on or about February 25th, and report to the commanding officer thereof for temporary duty. Upon return of Surgeon LAUDERDALE from leave of absence, Assistant Surgeon Harris will return to the post of San Antonio. Par. 3, S. O. 9, Hdqrs. Dept. of Texas, San Antonio, February 15, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 23, 1889.

RIXEY, P. M., passed assistant surgeon, promoted to surgeon November 27, 1888.

BRADLEY, GEO. P., surgeon, ordered to hold himself in readiness for duty about March 1st, to "Mohican."

LUNG, GEO. A., assistant surgeon, ordered to hold himself in readiness for duty about March 1st, to "Mohican."

PERCY, H. T., passed assistant surgeon, detached from Naval Hospital, Washington, and to the Coast Survey Str. "Patterson."

WHITING, ROBT., passed assistant surgeon, detached from Coast Survey Str. "Patterson," proceed home and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDING FEBRUARY 23, 1889.

AUSTIN, H. W., surgeon, to proceed to Green Bay, Wis., as inspector. February 9, 1889.

GUITERAS, JOHN, passed assistant surgeon, granted leave of absence for sixty days, with permission to go abroad. February 13, 1889.

WHEELER, W. A., passed assistant surgeon, orders to proceed to Cleveland, Ohio, revoked. February 9, 1889.

DEVAN, S. C., passed assistant surgeon, to proceed to Charleston, S. C. Savannah, Ga., and South Atlantic Quarantine Station, as inspector. February 9, 1889.

WASDIN, EUGENE, passed assistant surgeon, to proceed to Charleston, S. C., and assume charge of the service. February 23, 1889.

DEATH.

URQUHART, F. M., passed assistant surgeon, died at Evansville, Indiana, February 14, 1889.

SOCIETY NOTICES.

NEW YORK STATE MEDICAL ASSOCIATION. — The fifth annual meeting of the Fifth District Branch of the New York State Medical Association, will be held in Brooklyn, on Tuesday, May 28, 1889. All Fellows are invited to present papers, communications, relation of cases, and specimens at the meeting. All *written* communications presented will be published under the direction of the Executive Committee.

W. T. LUSK, *President*

E. H. SQUIBB, M. D., *Secretary*,
P. O. Box 94, Brooklyn.

APPOINTMENTS.

PHILADELPHIA POLYCLINIC. — DR. B. ALEXANDER RANDALL has been elected Professor of Diseases of the Ear; and DR. EDWARD P. DAVIS has been chosen Professor of Obstetrics and Diseases of Children, in the Philadelphia Polyclinic and College for Graduates in Medicine.

OBITUARY.

HORACE STEVENS, M.D.

Dr. Horace Stevens of Cambridge died at the residence of his son, Dr. E. H. Stevens, Sunday morning. He was born in Piedmont, N. H., April 19, 1818. He graduated from the medical department of the University of Vermont, and also attended Dartmouth College for three years. He began the practice of his profession in Standstead, Canada, removing to Skowhegan, Me. About ten years ago he came to Cambridge. He has been an invalid for years. During the war Dr. Stevens served as surgeon in the First Maine Cavalry. He leaves a widow, son, and daughter.

J. B. TAYLOR, M.D.

Dr. J. B. Taylor, one of the oldest resident physicians of Cambridge, and the official physician and surgeon of the Middlesex House of Correction, died suddenly February 15th while attending a patient. It is supposed death was due to heart disease. Dr. Taylor was born in Hinsdale, N. H., sixty-seven years ago, and came to Cambridge about 1850. He received a professional education at the Harvard Medical School, and was afterwards in company with the late Dr. Anson Hooker. Dr. Taylor leaves a widow, two sons, and two unmarried daughters. One of his sons is Dr. F. W. Taylor, now located at North Cambridge. Dr. Taylor, during his long residence in Cambridge, was well known and highly esteemed. He was a member of the Sons of New Hampshire Club, and has been during his life an active temperance worker.

D. WILLARD BLISS, M.D.

Dr. D. W. Bliss, of Washington, D. C., died February 2 th. He was born at Auburn, N.Y., in 1825. He took the degree of M.D. in the medical department of the Western Reserve College, Cleveland, Ohio in 1850. Until the breaking out of the civil war he practised medicine at Grand Rapids, Michigan. In June, 1862, he was placed in charge of Armory Square Hospital, Washington, and held that responsible position until the Hospital was closed in 1865. Since the war he has been engaged in the practice of medicine and surgery in Washington city. Under the territorial government of the District of Columbia he was for some time president of the Board of Health.

He was present at the deathbeds of both Presidents Lincoln and Garfield, having been the first physician called after the assassination of the latter, and remaining in the case with the eminent surgical counsel which he summoned, to the end.

JOHN C. DALTON, M.D.

Dr. John C. Dalton, President of the College of Physicians and Surgeons, died suddenly February 12th, at his home in New York. He was born at Chelmsford, Mass., February 2, 1825. He was educated at Harvard, graduating from the college in 1844, and from the Medical School in 1847. He was afterwards appointed professor in the medical department of the University of Buffalo. He was one of the first in this country to teach physiology with illustrations by vivisection. In 1856 Dr. Dalton resigned his professorship at Buffalo to accept a similar position in the Vermont Medical College, at Burlington. He held this position three years and then was offered a similar professorship in the Long Island College Hospital. He remained there until 1861. In April of that year he went to Washington as surgeon of the 7th Regiment, and in August was appointed Brigade Surgeon of Volunteers, and served until March, 1864, when he resigned. During the winter of 1864-65 he delivered a course of lectures on physiology, as a substitute for Dr. Alonzo Clark, before the College of Physicians and Surgeons, and in 1855 accepted the chair of physiology in the college, which he held until the time of his death.

He was an able writer and published several volumes. He was best known as the author of the standard treatise on human physiology, which has served a very large proportion of the physicians of to-day as a text-book. He was a pioneer in America as a scientific investigator and writer, and his honest devotion to his subject was shown by the repeated revisions to which his book has been subjected at a time when it was clearly an accredited text-book, and he himself might well have been content with the work already accomplished.

At the International Medical Congress at Philadelphia, in 1876, he was president of the Section of Biology.

The respect with which he was generally regarded cannot be better shown than by the appreciative words of the Union League Club, of which he was a devoted member.

Brought into daily contact with him as many of us were, we hardly recognized, beneath his modest and unobtrusive bearing and manner, the renowned man of science, who by original study and research had contributed to the sum of human knowledge in ways that tended most surely to promote the welfare of mankind. His conceded position as one of the first of modern physiologists was neither the result of accident nor the capricious reward of fortune, but was won as such honors can only be won, by a long and earnest life devoted unremittingly to an exalted study, to which his natural tastes and faculties were singularly adapted.

His professional brethren alone can pay proper tribute to his scientific fame; but, as sharers in the benefits of his labors, we may all recognize and rejoice in their value.

BOOKS AND PAMPHLETS RECEIVED.

The Medical Jurisprudence of Inebriety. By Joseph Parrish, M. D., Burlington, N. J.

Superintendent's Report of Central Kentucky Lunatic Asylum, for fiscal year ending October 1, 1888.

Pregnancy and Operative Surgery. Their Mutual Relations. By Louis McLane Tiffany, M.D., Professor of Surgery in the University of Maryland.

The Causation of Disease. An Exposition of the Ultimate Factors which Induce It. By Harry Campbell, M.D., B.S. (Lond.), etc., etc. London: H. K. Lewis. 1889.

Handbook of Materia Medica, Pharmacy, and Therapeutics. Compiled for the use of students preparing for examination. By Cuthbert Bowen, M. D., B. A. Philadelphia and London. F. A. Davies. 1888.

Lecture.

ACUTE PANCREATITIS.

A CONSIDERATION OF PANCREATIC HEMORRHAGE, HEMORRHAGIC, SUPPURATIVE, AND GANGRENOUS PANCREATITIS, AND OF DISSEMINATED FAT-NECROSIS.[1]

THE MIDDLETON GOLDSMITH LECTURE FOR 1889.

BY REGINALD H. FITZ, M.D.,
Shattuck Professor of Pathological Anatomy in Harvard University and Physician to the Massachusetts General Hospital.

The table of fifteen cases of pancreatic gangrene represents all, with the above possible exceptions, I have been able to collect. Twelve of them have been observed in the past eight years, five of them have occurred in Boston or its vicinity, and three of them are now published for the first time.

The records of the Boston City Hospital give the following details concerning Case LXVI. The patient, married, 40 years old, with abundant fat-tissue, strained herself two years before her death, while lifting a heavy tub. There was immediate umbilical pain and swelling, but she was not compelled to give up work. Until two weeks before she entered the hospital she was able to replace the umbilical hernia. Since then the swelling and pain have increased.

On the day following her admission as patient she vomited after breakfast, and was seized with a severe paroxysm of colic. The pulse became small and flickering. On the following day there was nausea and bilious vomiting, the pulse remained very weak, at times not perceptible, and the face was pinched and anxious. The temperature was not elevated. On the third day the vomiting had ceased, but the face was flushed, the temperature 100.8° F. and the pulse 144. She became comatose, the next day, and died. Pallor, gasping respiration, a temperature of 100.8° F., and a pulse of 124 were recorded. The coils of intestine in the immediate vicinity of the pancreas were united together, and to the diaphragm, by recent, fibrinous adhesions. On removing these the pancreas was found to be doubled in size, of a dark-red color and of a somewhat diminished density. On section, the tail was of a nearly uniform, red color, soft, and its tip was shreddy. The duodenal portion was of normal density and of a mottled, red and gray, color.

The splenic vein was filled with a reddish thrombus, in places softened at the centre. The under surface of the diaphragm presented a dirty, grayish-white, shreddy appearance. A section through the diaphragm showed it to be four times as thick as usual and to contain numerous, small collections of dirty-gray, puriform fluid. The diaphragmatic tissue was quite shreddy. There was an acute, fibrinous pericarditis and a sero-fibrinous pleurisy. The umbilical hernia was omental and adherent.

Case LXVII. has the following record. The patient was an Irish laborer, forty-nine years of age, abundant fat-tissue.

In the past three years he has had three attacks of jaundice, with bilious vomiting, severe pain and tenderness over the xiphoid cartilage. He has suffered also from severe paroxysms of abdominal pain and had been told by a physician during the past winter that he had passed a gall-stone.

After dinner he suffered from a burning sensation in the stomach, followed by nausea and severe abdominal pain, not paroxysmal but increased on motion. He became jaundiced on the next day and vomited a dark-green fluid, and considerable mucus. For the subsequent three days the vomiting persisted and there were frequent gaseous and bitter eructations, also several, loose, dark-green dejections.

He entered the hospital on the fifth day. The jaundice was conspicuous, the abdomen was resonant, except in the right flank, and sensitive. The pulse was 100 and the temperature rose abruptly from 97.4° F. to 100.8° F. During the subsequent four days the diarrhœa persisted. The urine contained a trace of albumen and a variety of casts. The pulse varied from 120 to 150, the respirations were very rapid, and the temperature remained moderately elevated.

On the eighth day he dressed himself, but did not seem conscious of his actions. He became mildly delirious on the following day, and while trying to escape from the ward, fell forward, was temporarily unconscious, and his pulse could not be counted. The temperature became subnormal, but rose to 100° F. in the evening. On the tenth day, while trying to leave the bed he fell to the floor, his pulse became weaker and more rapid, his breathing resembled the Cheyne-Stokes rhythm, and he died comatose.

The posterior wall of the stomach and the upper part of the mesentery were united by fibrinous adhesions to the pancreas, which lay in a cavity, within a spongy meshwork, infiltrated with dirty-green fluid. The pancreas was dark-brown, dry and firm. On section the lobules were indistinct, and the surface granular. Numerous, opaque-white patches were seen, resembling those to be described in connection with the abdominal fat-tissue. The splenic vein contained a mixed thrombus, four inches long and one-half the thickness of the little finger, and continued into several of the pancreatic branches. The spleen was soft and small. The liver was moderately granular and fatty. The gall-bladder was contracted about several calculi, the largest nearly the size of the end of the thumb, and projecting into the cystic duct. The walls were thick and tough, the mucous membrane thin and streaked with opaque-white lines. The cystic and common ducts were dilated.

The subperitoneal fat-tissue of the abdominal wall, mesentery, omentum, and perinephritic region contained numerous, superficial and deep-seated, small, circumscribed, rounded, opaque-white and saffron-colored patches. In general they were elongated, measuring an inch by a quarter of an inch. Rarely they were nodular, as large as a filbert, and on section contained dark-brown, discolored centres. Sections of the frozen fat-tissue showed numerous cavities containing a shreddy tissue, infiltrated with opaque-pink fluid of creamy consistency. Microscopical examination of the fresh specimens showed numerous leucocytes and large, round cells, with granular detritus, opaque-white specks, and bundles of small, acicular or rod-like crystals.

There was nothing abnormal in the appearance of the stomach or intestines.

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[1] Concluded from page 207.

The microscopic examination of the hardened pancreas shows a small quantity of interlobular fat-tissue. In this are numerous islets of necrosis, their appearances being essentially the same as those found in the parapancreatic fat-tissue.

The larger ducts are filled with clumps of coherent, detached, cylindrical epithelium with distinctly stained nuclei.

The gland-cells in certain parts, especially in the immediate vicinity of the necrotic fat-tissue, are swollen, granular, confluent, and without evident nuclei. The outlines of the acini are irregular or indistinct. Certain of the lobules present a diffused infiltration of round cells. Many of the acini show a central accumulation of homogeneous, hyaline material with corresponding flattening of the gland-cells.

Sections of the subperitoneal and parapancreatic fat-tissue present numerous patches, varying in extent and shape, all more or less rounded, oblong or leaf-like. They are sharply defined by a limiting zone, varying in width, of small, round-celled infiltration between the fat-cells. Next this cellular layer is often found a narrow, orange-colored streak, in which are frequent granules and round clumps of small, orange-colored acicular crystals. Within the patch the outlines of the fat-cells are often distinct over considerable areas, but elsewhere are almost wholly, if not entirely, obliterated by the clusters of large and long, acicular crystals and granular material. These crystals were isolated, dissolved, and recrystallized by Dr. Harrington, assistant in chemistry at the Harvard Medical School, and are pronounced by him to be identical with those obtained from ordinary tallow.

In addition to the crystals and granules, bacteria were found, both as circumscribed colonies within, and as diffused accumulations without, the patches.

In the fat-tissue surrounding the patches of necrosis are occasional, hemorrhagic spots with distinct outlines of red blood-corpuscles. Small and irregular patches of leucocytes, without intercellular substance, are to be seen, occupying more space than that of several fat-cells.

Occasionally, elongated bands are found considerably wider than any visible blood-vessels. They are composed of agglomerated round-cells with solitary, larger corpuscles containing granular pigment. At each side of the central streak are numerous isolated, round and larger, flat, polygonal cells with large nuclei. These, in turn, are defined externally by a margin of clustered leucocytes. Arteries and veins are free from obvious changes.

The following record of Case LXX. is given as fully as possible. It is to be regretted that neither the specimen nor a detailed description of the pancreas was preserved. A gentleman, fifty-nine years of age, temperate, strong, and healthy, weighing 200 lbs., was thrown from his carriage, but did not consider himself injured. Four days later he was seized with intense pain in the left abdomen, associated with nausea and vomiting. At the outset the pulse was 80 and the respiration 24. There was no fever at any time. After a few days the pain and tenderness were relieved. From the outset extreme exhaustion was a conspicuous symptom. Eventually rapid and labored breathing came on, and the patient died on the tenth day. A memorandum on the back of the letter accompanying the specimens and giving the clinical details, states that the conspicuous lesions were a gangrenous peripancreatitis and and necrosis of the mesenteric fat-tissue. From the lack of further details the question might be raised as to the exact method of origin of the gangrene and necrosis. At the time I was satisfied that the case was analogous to that which immediately precedes, viz., Case LXVII.

Of these fifteen cases seven were males and eight females. Their ages were as follows: —

Years of age.	Number of cases.
From 22-25	1
" 25-30	1
" 30-35	1
" 35-40	2
" 40-45	2
" 45-50	2
" 50-55	2
" 55-60	2
" 60-63	1
Past middle life	1
	15

They were from all walks and conditions of life. Five were very fat, one was decidedly lean; five were strong and two of them were addicted to alcoholic drinks.

Eight of these patients had been subject to earlier more or less repeated, attacks of digestive disturbance. These were always attended with pain, usually referred to the region of the stomach or stated to be biliary colic. They were frequently accompanied with vomiting, and in one-third of the number, with jaundice. Constipation, or irregular defecation might occur, and in the latter case the stools were black.

At first sight, the etiological importance of perforating gastric ulcer and of gall-stones seems immediate, as illustrated by Cases LVII., LVIII., LXVII.

The comparison of these cases with others in the series would suggest that these affections were more important from the associated inflammation of the mucous membrane, with its opportunity of extension into the pancreatic duct, than from the actual or possible perforation of the biliary or digestive canal.

A traumatic cause for the fatal illness was possible in two instances.

In the one the patient was seized with a sudden pain in the lower abdomen, while turning a hand-spring, a week before the fatal illness. In the other the patient was thrown from his carriage five days previous. One person was seized with her attack while under treatment for an umbilical hernia of two years' duration. A midday meal and a hard day's work were each the immediate antecedent of the attack.

The illness usually, in four-fifths of the cases, began suddenly, without definite cause, with abdominal pain. This was rarely slight, but often intense or severe. It was referred to the stomach, left hypochondrium, navel, mid-abdomen, and left loin and back. The pain might be constant or paroxysmal like a biliary colic, and a diagnosis of gall-stones was made in one instance.

Vomiting was the next symptom of importance, being recorded in three-fifths of the cases. Partly digested food was ejected, or a viscid or slimy fluid, often green, sometimes black or bloody. Constipation was, at times, so conspicuous that, in connection with the other symptoms, a diagnosis of intestinal obstruction was made in three cases, and laparotomy performed in two. On the contrary, frequent, bilious stools might occur.

The urine might contain albumen and casts. In one case an excess of indican was repeatedly sought for, in vain.

Jaundice, usually slight, occurred after a few days in one-fifth of the cases.

Chills were occasional, sometimes at the onset, and fever was frequent after a few days. The temperature was likely to be low, in the vicinity of 100° F., although it might be as high as 104° F. There might be no conspicuous fever throughout the course of the disease.

Swelling of the abdomen was present in one-half of the cases, usually occurring as a late symptom. It might be slight or enormous, general, or limited to the epigastrium, or to the left half where a fluctuating tumor was to be recognized. The abdominal swelling was usually tympanitic, although dulness might be present in the flanks. The spleen was palpable in a single instance, and the parotid became acutely swollen in another case.

As the disease ran its course, weakness became apparent. Vomiting, perhaps diarrhœa, and abdominal pain were noticeable, suggestions of peritonitis were frequent, and symptoms of collapse were likely to take place, being followed more or less rapidly by death, which occurred as follows: —

On the 4th day in	1 case.
" 5th "	1 "
" 10th "	3 "
" 13th "	1 "
" 15th "	1 "
" 18th "	1 "
At the end of 3 weeks in	1 "
5 "	1 "
7 "	1 "
8 "	1 "
Not stated in	1 "

Two patients recovered with the discharge of a slough through the bowel, one at the end of eight weeks. One of these patients was living seventeen years later.

The diagnosis lay between intestinal obstruction, biliary calculi, and peritonitis.

The appearance of the pancreas varied according to the duration of the disease. About the fourth day [61] the pancreas may be doubled in size, dark-red, and of somewhat diminished consistency. It may be red, on section, or mottled, red and gray. The tip may be shreddy, or the entire gland may be transformed into a dark, slaty-colored, stinking mass. The adjacent parts may be infiltrated with a discolored, purulent fluid, or the coils of intestine near the pancreas may be united by recent adhesions together and to the under surface of the diaphragm.

The latter may show a dirty, grayish-white, shreddy appearance, and its thickened substance may contain small collections of dirty-gray puriform fluid, the tissue itself being quite shreddy.

On the tenth day [62] the pancreas may be dark-brown, dry, firm. It may have a hemorrhagic coating or lie in a sponge-like meshwork infiltrated with dirty green fluid.

On section, there may be dry hemorrhagic masses, with yellow spots of softening, or the lobules may be indistinct, with intervening, opaque-white patches like those to be found in the neighboring fat-tissue. The hemorrhagic infiltration may extend beyond the gland. The wall of the duct and the overlying tissue may be necrotic and hemorrhagic. The perinephritic fat and that near the supra-renal capsule may contain extensive hemorrhages.

Towards the end of the second week [63] the pancreas may be a soft, black, shreddy, sloughy, gangrenous mass, the central part being encapsulated by the peripheral portion. Between the pancreas and the transverse colon may be a large quantity of chocolate-like fluid and large, bluish-black clots. Or the tail and a part of the body may be soft, gray discolored and infiltrated with a thin, ichorous fluid while the parapancreatic tissue is partly purulent and partly ichorous.

A few days later [64] the pancreas may be a thin, flabby, friable, grayish band, lying in a cavity behind the stomach and attached by a few shreds to the omental wall. The cavity may contain ichorous fluid and communicate with the stomach by several openings with frayed edges.

At the end of three weeks [65] the dark-brown pancreas may lie nearly free in the omental cavity, attached only by a few, rotten shreds of fibrous tissue. The cavity may contain abundant ichorous, bloody fluid and communicate with the duodenum. During the fourth and fifth weeks the pancreas may be discharged as a slough from the bowels.

In the fifth week [66] the pancreas may lie free, as if macerated, in a cavity extending behind the cæcum and descending colon, on both sides of the spine, as far as the pelvis. The contents may also be a greasy, grayish-yellow detritus, with fragments of necrotic fat-tissue nearly as large as hen's eggs. The latter are apparently sequestrated from spaces with walls of a dark-brown or iron-rust color.

At the end of seven weeks [67] the pancreas may be transformed into a cylindrical, shreddy mass of brownish-black, friable tissue. This may lie in the omental cavity, which is filled with offensive, black fluid and communicates with the stomach and jejunum.

Thrombosis of the splenic vein frequently accompanies the pancreatic lesion and is usually parietal. The thrombus in the early stages is soft and dark-red, or it may be of a reddish-gray color. It has been found partly puriform, and extending to the portal vein, at the end of the second week.

A little later it has been found completely obstructing. The spleen may be soft, and is either large or small. Disseminated fat-necroses are often seen.

From the frequent mention of the position of the pancreas in the omental cavity filled with ichorous pus, it is evident that an acute peritonitis with liquid exudation is a frequent, if not the usual, occurrence. The pus may be prevented from entering the general, peritoneal cavity by adhesive obliteration of the foramen of Winslow.

Peritoneal adhesions between coils of intestine are not infrequent, especially in the vicinity of the root of the mesentery. A general, suppurative peritonitis is of comparatively rare occurrence.

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[61] Cases LXII., LXVI.
[62] Cases LXVII. and LXIX.
[63] Cases LXV. and LXVIII.
[64] Case LVI.
[65] Case LX.
[66] Case LXIV.
[67] Case LVIII.

The inflammatory process may be extended to the pleural and pericardial cavities, and an acute lepto-meningitis has been found on the thirteenth day. At a late stage of the disease, death may result from pulmonary embolism.

The possibility of an arrest of the processes resulting in pancreatic necrosis and parapancreatitis is evident from Case LX. Although the patient died of diabetes, the symptoms of which lasted at least a year, the tail of the pancreas was flabby and macerated, and its tip lay free in a cyst arising immediately from the pancreatic capsule.

It is obvious from the anatomical appearances in this group of cases of gangrenous pancreatitis, para- and peri- pancreatitis, that the lesions are associated with a hemorrhagic pancreatitis in a considerable number of cases. In at least one-half there is mention of hemorrhage into the pancreas or of such discoloration as to suggest a hemorrhage.[68]

A comparison of the clinical history of this series of cases with that of hemorrhagic pancreatitis will show a strong resemblance in predisposing causes and in the nature of the symptoms. These are essentially identical in nearly all. In many of the remaining cases the symptoms are those which would favor the diagnosis of a hemorrhagic pancreatitis.

In any event they represent the termination of acute pancreatitis in gangrene, with an extension of the process to the continuous tissue.

Viewing the subject from the anatomical side it is evident that cases of hemorrhagic pancreatitis may terminate fatally within a few days, either with or without necrosis of the gland and parapancreatic fat-tissue. They may also prove fatal in from one to four weeks, in consequence of an extension of the disease to the para- and peri- pancreatic tissues, with gangrene of the parts concerned.

DISSEMINATED FAT-NECROSIS.

Considerable prominence has necessarily been given to the necrosis of fat-tissue associated with pancreatic inflammations.

Hooper[69] probably intended to describe the appearances due to this condition, but Ponfick,[70] first, distinctly recognized the condition. He called attention to a disseminated necrosis of bone-marrow in a case of empyema and extensive amyloid degeneration. The appearance was that of innumerable, submiliary, yellowish-white specks in the amber-colored marrow. They proved to be composed of an agglomeration of large cells crowded with fine granules. These were enormous, granular corpuscles, which, from their size and shape, were regarded as identical with fat-cells. There were also narrow and elongated, fatty-degenerated cells, so disintegrated in many places as to form a finely granular detritus. Ponfick attributed these spots of necrosis to a fatty degeneration of the marrow.

Balser,[71] who became an assistant of Ponfick, then professor at Göttingen, found similar appearances in the marrow and in the subpericardial fat, each in an old man. In the examination of twenty-five, unselected cases he found such patches in the region of the pancreas, in five instances. Two of these patients died of cancer of the stomach, and the remaining three were cases of pulmonary consumption, hepatic cirrhosis, and aortic endocarditis respectively. There remain two, additional, cases in which he found fat-necrosis.[72]

These he regarded as illustrative of the fatal effect of a disease, fat-necrosis, which, when extensive, was associated with old and fresh hemorrhage. Such hemorrhages near the pancreas might produce death in the manner resembling that described by Zenker as pancreatic apoplexy.

He regarded the fat-necrosis as the result of an excessive growth of fat-tissue which destroyed the tissue it surrounded. From its association it was a special source of danger to fat persons. His conclusion is:[73] "An excessive growth of the fat cells near the pancreas occurs in many men. It may become so excessive, in very fat people, that a large part of the abdominal fat dies, and it thus proves fatal, either on account of the quantity destroyed or the associated hemorrhage.

Chiari[74] had also found fat-necrosis associated with pancreatic disease,[75] although in his published report he made no note of the characteristic appearances. He confirmed Balser's statements concerning the occurrence of fat-necrosis in and near the pancreas. Since he had observed it in five out of six cases of pancreatic disease, a certain connection between the two was suggested. Three of these were cases of sequestration of the pancreas. The remaining three were a phthisical diabetic, a case of chronic Bright's disease and interstitial pneumonia, and an infant with congenital syphilis.

He found no evidence of an excessive, circumscribed growth of fat-tissue as claimed by Balser, but regarded the necrosis as a degenerative process; analogous to the retrograde metamorphosis in other tissues, and the result of a severe marasmus. He admitted it as a cause of pancreatic hemorrhage and that it might, hence, prove fatal. He did not regard the sequestration of the pancreas as the result of this necrosis, since he could not understand how extensive, circumscribed necroses about the pancreas could isolate so large an organ.

Finally, Van Giesen[76] presented to the New York Pathological Society microscopical sections illustrative of fat-necrosis. They came from the pancreas of a woman, eighty years of age. There were two nodules, the larger five mm. in diameter. Nothing is stated with reference to any associated lesions, and the necroses were regarded as degenerative.

There is a general agreement as to the appearance of these nodules. They are multiple, disseminated, are found in the subperitoneal fat-tissue of the abdominal wall, mesentery, omentum, and in that within and around the pancreas. Chiari[77] found them also in the subpericardial, subpleural, and subcutaneous fat. Their presence in marrow has already been mentioned.

Such nodules were present in one case of pancreatic hemorrhage; certainly in one, probably in two, cases of acute, suppurative pancreatitis. They were seen in six cases of hemorrhagic and in six of gangrenous pancreatitis.

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[68] See Cases LVIII., LX., LXI., LXII., LXV., LXVI., LXVII., LXIX.

[69] Case XIX.

[70] Virchow's Arch., 1872, lvi, 541.

[71] *Loc. cit.*

[72] Nos. XXIV., LXVII.

[73] *Loc. cit.*, 534.

[74] Prager Med. Woch., 1883, viii, 285.

[75] Cases LVIII., LX.

[76] N. Y. Med. Rec., 1888, xxxiii, 477.

[77] *Loc. cit.*, 285.

These nodules, in most of the cases, occurred in great numbers, the smallest not larger than a pinhead, and strongly suggestive of miliary tubercles or malignant new formations. The largest were of the size of a hen's egg. All were more or less rounded, of an opaque-white or yellowish-white color, and of soft, tallowy consistency. They occurred alone or in groups, superficially and deep-seated. The smallest were often surrounded by an injected, vascular wreath, while many were bounded by a distinct, narrow, reddish-brown zone indicative of hemorrhage.

Chiari[78] found the larger nodules (although he does not state in which of his six cases) incrusted with lime, and surrounded by a distinct, fibrous capsule, from which threads occasionally ran into the surrounding fat-tissue.

The tallowy material could be readily picked out of these nodules, and, when examined microscopically, consisted largely of acicular crystals resembling those found in fat, in addition to fat-drops and a granular detritus. Dr. Harrington's micro-chemical examination of these crystals shows their identity with those obtained from tallow. He regards them as stearine. In this view he confirms the conclusion reached by Balser.[79]

The microscopical appearances have already been described in sufficient detail.

Balser states [80] that his examination shows that the same process is concerned in the mild and fatal cases. Neither he nor Chiari were able to find any evidence of a bacterial or mycotic process, nor was the latter able to discover any changes in the neighboring vessels.

The microscopical appearances found in Case LXVII. make evident certain features in the more serious fat-necrosis, which supplement the results described by other observers.

Tracts of round-celled infiltration were found at the border of the patches. Chiari also states that the fibrous threads continued from the capsules were infiltrated with round cells.

The surrounding fat-tissue gave frequent evidence of an acute lymphangitis, of abscesses, and of thrombosis.

Bacteria were found in and near the patches of necrosis. They were likewise present in a neighboring vessel and in a venous thrombus.

The association of these appearances with the evidences of fat-necrosis indicate most directly that the latter condition, in fatal cases at least, instead of being simply the result of a hyperplasia or of a degeneration, is connected with an acute, inflammatory process, somewhat akin to the phlegmonous inflammation of the subcutaneous fat.

The cause of its dissemination would thus, probably, depend upon the transfer of an infecting material, either through vascular currents, especially lymphatics, or by direct inoculation of the peritoneum in case of the superficial nodules. The multiple, disseminated fat-necrosis found associated with fatal, pancreatic disease is thus to be regarded as the result of the inflammation of the fat-tissue extended from the pancreas or its vicinity. The pancreas is usually the seat of the primary process, but the necrotic inflammation of the fat-tissue may be secondary to a possible, primary lesion of the biliary tract or stomach, as suggested by cases LVII. and LVIII.

The spots of dead fat-tissue observed in the marantic cases may be degenerative as claimed by Ponfick and Chiari. They certainly are neither necessarily nor exclusively found in fat persons. There is no confirmatory evidence of their hyperplastic nature.

The inflammatory fat-necroses, in most cases, were associated with evidences of putrefactive conditions.

It would thus appear that there is a necrobiotic necrosis of the fat-tissue, and an inflammatory necrosis, the latter tending to become gangrenous, both of which may be found within or near the pancreas. The inflammatory and gangrenous varieties are of especial importance in permitting the sloughing of the pancreas, and in most instances are the result of an acute inflammation of this gland.

Although the serious varieties of fat-necrosis may be recognized as causes for sequestration of the pancreas, their relation to pancreatic hemorrhage must be expressed in different terms from those employed by Balser and Chiari.

A simple, necrobiotic fat-necrosis may be associated with fatal, pancreatic hemorrhage, as suggested by Case V., but there is no necessary etiological significance in this association. Most fatal cases of pancreatic hemorrhage occur without either variety, and the simple necrosis usually takes place without hemorrhage.

When the severe varieties of fat-necrosis accompany pancreatic hemorrhage, inflammation of the pancreas is present. The fat-necrosis cannot be regarded as the essential cause of the hemorrhage in such cases, since it occurs in suppurative pancreatitis when there is no hemorrhage in the pancreas.

Furthermore, when hemorrhages are found near the necrotic patches, they are usually very slight, and limited to the immediate vicinity of the patch.

CONCLUSIONS.

The evidence presented in this paper is intended to establish the fact that —

Acute inflammation of the pancreas is both a well-characterized disease, and one which is much more frequent than is generally thought.

It is of great consequence that it should be recognized, for the following reasons.

It represents a serious complication of what, by itself, is a relatively simple affection, viz., gastro-duodenitis.

It is an important cause of peritonitis, and one readily overlooked.

It has been repeatedly confounded with acute, intestinal obstruction, and has thus led, in several instances, to an ineffective laparotomy; an operation which, in the early stages of this disease, is extremely hazardous.

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[78] *Loc. cit.*, 299.
[79] *Loc. cit.*, 528.
[80] *Loc. cit.*, 522.

METHOD OF ORIGIN.

Acute pancreatitis commonly originates by the extension of a gastro-duodenal inflammation along the pancreatic duct. It may also be induced by the occurrence of hemorrhage in the pancreas. This may be of traumatic origin, although usually arising from unknown causes. The pancreatic hemorrhage may likewise be secondary to inflammation of the pancreas.

PATHOLOGICAL ANATOMY.

The anatomical varieties are the suppurative, hemorrhagic, and gangrenous. The first may be acute, but is usually subacute or chronic. The second is generally peracute or apoplectiform. The gangrenous variety runs an acute course.

Suppurative pancreatitis may result in an evacuation of the abscesses into the stomach or duodenum. Or they may open into the cavity of the great omentum, which, transformed into a large peritoneal abscess, may, in turn, open into the digestive tract. Pylephlebitis and abscesses of the liver may follow. Disseminated fat-necrosis is comparatively infrequent.

Hemorrhagic pancreatitis usually proves fatal in from two to four days. The gross lesions are then those of hemorrhage within and near the pancreas, extending into the subperitoneal fat-tissue, perhaps as far as the pelvis. Peripancreatitis may be expected, and disseminated fat-necrosis is common.

Gangrenous pancreatitis, although it may be secondary to a perforating inflammation of the gastro-intestinal or biliary tracts, usually results from a hemorrhagic pancreatitis, and proves fatal in the course of a few weeks. The gangrenous processes extend to the parapancreatic tissue, and produce more or less complete sequestration of the pancreas. The peritoneal wall of the omental cavity becomes inflamed, that covering the pancreas may be destroyed, and the sequestrated gland may lie in the omental cavity, soaked in pus, and attached only by a few shreds. Both pus and pancreas may be discharged into the intestine. Splenic thrombophlebitis is not uncommon, but hepatic abscesses are rare. Disseminated fat-necrosis is frequent.

SYMPTOMS.

The common symptoms of acute pancreatitis are sudden, severe, often intense, epigastric pain, without obvious cause, in most cases followed by nausea, vomiting, sensitiveness, and tympanitic swelling of the epigastrium. There is prostration, often extreme, frequent collapse, low fever, and a feeble pulse. Obstinate constipation for several days is the rule, but diarrhœa sometimes occurs. If the case does not end fatally in the course of a few days, recovery is possible, or a recurrence of the symptoms in a milder form takes place, and the characteristics of a subacute peritonitis are developed.

DIAGNOSIS.

The symptoms are essentially those of a peritonitis beginning in the epigastrium and occurring suddenly, during ordinary health, without obvious cause.

The diagnosis, therefore, is based on pain, tenderness, and tympany limited to the region of the pancreas, and on the gradual development of a deep-seated peritonitis in the same place.

DIFFERENTIAL DIAGNOSIS.

The differential diagnosis lies, practically, between an irritant poison, perforation of the digestive or biliary tracts, and acute, intestinal obstruction.

An irritant poison is excluded by the history of the case, and by the examination of the vomit.

Perforating ulcer of the stomach or duodenum is to be excluded by the absence of pain after eating, hemorrhages from the digestive canal, and cachexia.

Acute perforation of the transverse colon is rare, and the resulting peritonitis progresses more rapidly and is likely to be general. Perforation from gall-stones is usually preceded by attacks of biliary colic and jaundice, while the seat of the pain is rather in the region of the gall-bladder than in that of the pancreas.

Acute, intestinal obstruction is most likely to give rise to doubt. It is to be eliminated by determining, through injection, the patency and capacity of the large intestine, by the rarity, in the epigastrium, of an obstructed small intestine, by the immediate presence of localized tenderness, and by the usual absence of conspicuous, general tympany or limited distention of intestinal coils.

TREATMENT.

It is evident that all treatment, at the outset, can be nothing but palliative. With the formation of pus in the omental cavity comes the opportunity for the surgeon. The possibility of the successful removal of the gangrenous pancreas is suggested by the healthy condition of a patient seventeen years after he had discharged this organ from his bowels.

An unexpectedly early verification of the above conclusions has occurred within the week following the delivery of this lecture.

The case was that of a well-known gentleman of Boston, and presented, so fully, the symptoms above mentioned, that, when called as consultant, I was able to make a diagnosis of acute pancreatitis, which was eventually substantiated.

The following is a brief summary of the essential features of this case, which will, hereafter, be more fully reported.

The patient was suddenly seized, February 19th, while apparently in his usual good health, with a severe pain and tenderness a short distance above and to the left of the navel. This was followed by vomiting and a certain degree of prostration. The administration of nearly a grain of morphia gave relief. I saw him in the evening, and during the subsequent two days of his life. He died on the third day. The localized pain was more or less constant, with occasional severe twinges, and was also to be elicited by intercostal pressure in the splenic region. The sensation of a constricting band in the epigastric region was likewise mentioned. At the close of the second day the lower abdomen became sensitive in spots. There was vomiting on the first day, but not later, and the bowels were confined. The abdomen was somewhat distended, and dull, except in the epigastrium. The pulse was moderately accelerated, and the temperature slightly elevated.

The diagnosis lay between acute, mechanical, intestinal obstruction, perforative peritonitis, and acute pancreatitis. The majority of the consultants agreed to the first as the most probable condition, and advised a laparotomy, which was performed on the third day. Spots of fat-necrosis were seen in the omentum, but there was no evidence of mechanical obstruction.

At the post-mortem examination the characteristic appearances of hemorrhagic pancreatitis were found, also numerous spots of disseminated fat-necrosis.

Original Articles.

ON CHRONIC ARSENIC POISONING, ESPECIALLY FROM WALL-PAPER,

BASED ON THE ANALYSES OF TWENTY-FIVE CASES IN WHICH ARSENIC WAS FOUND IN THE URINE.[1]

BY JAMES J. PUTNAM, M.D.

THE object of this paper is to call attention once more to the prevalence of poisoning from arsenical wall-papers, by reporting brief notes of twenty-six cases, which have never been published, where arsenic was found in the urine. I have chosen this series of cases, not because they are clinically more striking than many others where the urine was not examined, but because they may be justly expected to carry more weight, since through the demonstration of the arsenic one element of doubt as to the diagnosis is removed.

For the notes of twenty-four of the cases I beg to express my sincere thanks to the following gentlemen: Profs. Wood and Hills, Dr. A. M. Comey, and Mr. W. S. Robinson, of Harvard University, Prof. Sanger, Drs. S. W. Driver, S. W. Torrey, T. E. Francis, E. F. Cutter, A. Worcester, T. M. Rotch, P. C. Knapp, J. T. G. Nichols, and Prof. H. B. Hill.

I wish also to make a contribution toward our means of exact diagnosis in this obscure class of cases by calling special attention to one where a close examination showed the presence of a neuritis which might readily have escaped detection.

I shall have occasion to refer frequently to a series of observations by Kirchgasser (1868), partly because he has utilized his material in a very thorough manner, for the benefit of diagnosis, partly because in his cases also the diagnosis was in many instances controlled by an analysis of the urine.

The time has nearly gone by when fair-minded persons who have taken pains to investigate the evidence need to be convinced that arsenical wall-papers and fabrics may be a source of poisoning. The problems of chief importance at present are, how we may learn to recognize with greater confidence the less typical cases; how we may persuade our legislators to give us due protection against this wide-spread public danger. The latter need has recently been pointed out anew by a writer (Mr. A. W. Stokes) in the London *Chemical News*, to whose investigations attention is called in the last number (January, 1889) of the *Therapeutic Gazette*. The author examined one hundred samples of Indian muslins and cretonnes, and found that 23 per cent. contained arsenic in appreciable quantities, the highest percentage being twenty-three grains of white arsenic per square yard. Arsenic was also found in 10 per cent. of wall-papers submitted by various manufacturers, and in a number of other articles of household use. It has been asserted by our chemists that the dangers from these sources are by no means so great as formerly, but it is evident that they are still far from being entirely done away with.

The symptoms which are liable to be met with in these cases are so thoroughly detailed in the admirable reports of Drs. Draper and Wood, in the Massachusetts State Board of Health reports for 1872 and 1885, and by the writers therein cited, as to make it seem a needless task to call attention to the subject afresh, especially as it might be thought unwise to separate the discussion of the symptomatology of this special form of arsenic poisoning from that of chronic arsenic poisoning in general. As a matter of fact, however, it is mainly from this class of cases that we practically derive our knowledge of chronic arsenic poisoning, and our power of diagnosis of this condition is by no means perfect. Acute arsenical poisoning has long been familiar to toxicologists, and the subacute form is usually easily recognized by the severe gastro-intestinal disorders, œdema of the eyelids, outspoken affections of the mucous membranes, sensory and motor paralyses, and the like; but in dealing with the chronic forms we have only the shadows of these characteristic symptoms to guide us, and are, moreover, likely to be led astray by the fact that the arsenic may only act by bringing out the latent weaknesses of the patient. For this reason, we not only need to know that a particular symptom may be of arsenical origin, but also to familiarize ourselves with more refined methods of ascertaining whether it is so or not. Of such symptoms, the most convincing are perhaps those that can be recognized by physical examination, such as neuritis of a sufficiently advanced degree to cause changes in electrical reaction, diminution of cutaneous sensibility, impairment of motor power or co-ordination. Another physical sign, which is spoken of as important by Kirchgasser, is a peculiar browning of the skin, especially of the face. This has often been described as occurring during the long-continued use of arsenic for medicinal purposes, but not often in connection with wall-paper poisoning. It probably affects other parts of the body quite as much as the face. It is the same writer's opinion that a typical periodic recurrence of symptoms is frequently seen, suggesting the intermittence of malaria, and certain neuralgias; and he also points out that shifting rheumatoid. Another important physical sign is albuminoia with casts and sometimes blood in the sediment; of this I have two instances to report. The other influences which might lead to this condition are not numerous, and can, after a time at least, usually be eliminated.

In Kirchgasser's cases this symptom was not present, and he says, in fact, that the urine is not characteristic, though he dwells upon the significance of dysuria. Both those symptoms have been noted by other writers, especially from poisoning with arseniuretted hydrogen.

Cerebral symptoms, such as vertigo, impairment of memory and mental endurance, and, rarely, epileptiform seizures, are met with in cases of chronic arsenical as in lead poisoning, and may be suggestive if not characteristic, if other causes can be excluded. Kirchgasser further reports, as others have done also, attacks of fever of low grade and unusual course, and this is noted in one of my cases.

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[1] Read at the meeting of the Boston Society for Medical Improvement, February 12, 1889.

The case observed by myself is as follows: — The patient is a lady forty-three years of age, and of naturally good health and habits. She is a hard worker, and during the year or two previous to the illness now in question, suffered from time to time with severe colds and indigestion, which, however, yielded, after a while, to careful dieting and tonics. At the time that the symptoms began, she was in good condition, and had, in fact, only recently returned from a vacation. In the spring of 1887, shortly before going on her summer vacation, she moved into new lodgings, which consisted of eight rooms. About a month or six weeks after returning home, she began to suffer from severe pain in the abdomen, at the epigastrium. This pain recurred periodically, coming on in the morning and passing away in the afternoon. It was unconnected with any sign of digestive disorder except intestinal flatulence, and was not relieved by the most stringent dieting, nor by medicinal treatment; but was somewhat relieved by a full meal. This pain remained without material change through the autumn, winter and the following spring, unaccompanied at first by any other sign of illness, except that the patient felt fatigued after the attacks and finally began to lose sleep and appetite. About February or March, 1888, she first noticed tingling in the fingers, lips, tongue, and a slight twitching of the fingers on attempting to write. The right hand was worse than the left. These symptoms continued with varying intensity for many months. The feet were affected in a similar manner, at first in a less degree than the hands, but towards the end of June more severely. She also after a time began to be troubled with soreness of the hands and wrists on pressure, so that she dreaded to shake hands; and writing, which had formerly been easy and habitual, became a labor from which she shrank. There was also lameness about the left shoulder, developed by any slight blow.

The drinking water and urine were examined for lead, at this period, but none was found. Moderate pressure on the arms, as in lying on the side, and even at times in the back, caused a sense of formication, so uncomfortable that she frequently refrained from lying down.

I would here remark that this "going to sleep" of the arms on lying down, even when the arms themselves are not under the body, is a familiar symptom to neurologists, and is generally attributed to slight neuritis, though it is not proved that this is always present.

The same sensation was readily excited in the legs by crossing one over the other. A careful electrical examination made on August 1, 1888, showed that the minimal faradic action of some of the extensor muscles of the fingers, as well as of the opponens and flexor proprius pollicis, were less good for the right arm than the left, requiring the coils to be approximated about half a centimeter for that side.

The figures are as follows: —

	R.	L.
Fl. prop. pol.	12.	12.5
Opp. pol.	11.5	11.9
Ext. lon. ind.	10.8	11.2
Ext. com. dig.	10.8	10.8
Ext. min. dig.	10.8	11.2
Ext. carpi uln.	11.	10.6

The results of this examination were essentially the same with that of a previous examination of the date of July 16th, and at that time a similar, slight, but definite difference of reaction to the galvanic current, in favor of the left side, had also been made out. When stronger currents were used it was found that while the extensor muscles of the left forearm responded strongly, so that the hand and fingers were raised in the usual manner, those of the right arm did not contract with corresponding vigor, their contraction being readily overcome by that of the flexor muscles, though the latter were stimulated only by the current transmitted through the thickness of the arm, so that when the electrode was placed over the extensors, and strong currents applied, the hand was flexed instead of being extended. This was confirmed by repeated trials. The difference in reaction between the two arms was not due to greater electrical resistance on the right side, as was shown by galvanometric tests. The grasp of both hands was feeble, that of the left especially so. The dynamometer figures were, R. 5; L. 17, whereas they might have been expected to be at least R. 40 to 50; L. 30 to 40.

On hyperextension of the hand and fingers, with the fingers spread, there was a marked tremor of both hands; but while the left hand could be held extended by a strong effort, the right began almost immediately to droop, and reached the plane of the forearm after thirty or forty seconds. I consider this to be a sign of real value in estimating slight failure in efficiency of the extensor muscles, not severe enough to betray itself in the ordinary use of the hands.

The sensibility of the tips of the fingers of the right hand, as compared with the left, was found slightly but markedly diminished, on careful testing, as regards touch and temperature and estimation of the compass points (R. 3-16, L. 2-16).

In the early part of July the wall-papers were examined by Dr. A. M. Comey, of Harvard University, and a large quantity of arsenic was found in two of them, which covered the walls of three rooms. The largest quantity was in the room used by the patient as a bedroom. Early in August the urine was also analyzed, and Dr. Comey reported that it contained as large an amount of arsenic as he had ever found in a urine analysis.

Almost immediately after this (in July) the patient moved to new lodgings, and for safety's sake the paper on the patient's bedroom was examined for arsenic. The patient is away all day long, and is practically never in any other room except the parlor, where she sits a few hours in the evening five days in the week. A large amount of arsenic was found in the bedroom paper, and the room was repapered in October, but unfortunately the new paper was put on over the old. For a few weeks before this change was made the patient had had less pain and discomfort in the arms, perhaps as a result of leaving her former lodgings, but from this time forward her improvement in every respect was almost continuous, although on one occasion, during a visit away from home, the pain in the stomach returned.

During the entire present winter she has remained (except for an occasional twinge) free from the pain in the stomach which had followed her so long and so continuously. For a long time, however, and until four or five weeks ago, she suffered from constant nightmares and slept restlessly and poorly.

In November the urine was examined for the second time, and arsenic was still found in considerable quantity, though not so much as before.

I advised her to have both papers removed from the wall, and asked her before doing so to have a third analysis of the urine made, in order to see whether the arsenic found the second time was probably due to the underlying paper, or was an indication that the elimination from the previous poisoning was not complete.

This has been done, with the result that a very large amount has been found to be still present. The idea naturally suggests itself that she is getting arsenic from some other source, but if so I have been unable to find it. Her household effects are very limited, and of the few articles in her possession which might be suspected, I have had a dress and a curtain analyzed, and pieces of two carpets, as well as the paint of the room in which she works, with the result that all of them were found innocent.

One other symptom remains to be mentioned, though I am not prepared to assert that it is attributable to the arsenic.

Namely, during last autumn, at about the time of the repapering of the bedroom, and while the gastralgia was abating, the patient began to suffer from a typical convulsive spasm of the left facial muscles, which at times was severe, and this has continued, with a few weeks' intermission, up to the present time. I shall bring forward evidence to show that the action of arsenic may probably be concentrated in one part of the body, apparently causing, or helping to cause, localized and unsymmetrical signs of disease, but in the present case the patient remembers having noticed a very slight twitching about the left eye and left angle of the mouth shortly before she moved into the first lodgings, at a time when she is not known to have been exposed to arsenic, and doubt is thus thrown on the propriety of referring the spasm to arsenical poisoning, though the patient herself considers the former attack to have been of a different nature from this. Except for this facial spasm the patient is now apparently in good health.

The figures for the dynamometer test are now R. 35; L. 35.

The points that seem to me chiefly important in this case are that, in spite of the absence of any material disorders of the general nutrition, or the digestion, the attacks of gastralgia recurred daily, and at the same hour, for almost a year; and, still more, that definite signs of loss of muscular strength, affecting the extremities the most, and both flexor and extensor muscles, impairment of cutaneous sensibility, and changes in the electrical reactions were found on careful examination, though the patient had not been incapacitated for work, and her symptoms were such as might easily have been attributed to simple nervous weakness.

With regard to the diagnosis, the absence, so far as is known, of other causes of generalized neuritis; or of any history of previous attacks of gastralgia or analogous nervous symptoms; and the improvement when the patient was removed from exposure to the worst arsenical paper, together with the finding of arsenic in the urine, warrants us in looking upon arsenical poisoning as the most probable origin of her illness. The continued presence of arsenic in the urine renders it probable that the poison is still given off in spite of the overlying paper, or comes also from the other papers which have not been analyzed.[2]

(To be concluded.)

SUPRA-PUBIC PROSTATECTOMY

IN A PATIENT AGED SIXTY-NINE YEARS, THE SUBJECT OF PROFUSE HÆMATURIA FROM AN UNUSUAL SOURCE: RECOVERY.[1]

BY F. S. WATSON, M.D.

L. G. M., æt. sixty-nine years, in vigorous health until ten years ago, when symptoms of urinary obstruction from an hypertrophied prostate began.

Not long after this he had an attack of retention of urine, which was relieved by a metal catheter, and the instrument was used to draw the water for a few days (he then had a prostatic abscess?, which evacuated, apparently spontaneously, into the urethra).

Five years ago occurred a second attack of retention, followed by inability to pass the urine naturally, and the necessary regular use of the catheter, which condition has persisted ever since. Three years ago first noticed blood in the urine: the hæmorrhage was profuse, filling the bladder with clots which could not be evacuated through the catheter, and causing great distention of the bladder. This first attack of the bleeding apparently had no connection with the use of the catheter.

The bleeding was repeated only two or three times in each of the first two years following its first appearance.

But during the last year it has become more frequent, latterly once in about two months. The quantity of blood is generally great at the onset of the attack, then gradually diminishes during the succeeding days, leaving the urine quite clear at the end of about a week. The hæmorrhages are independent of exertion, and there is no pain except from the retention due to the over-distention from clots. During the past year the patient *thinks* he has noticed fleshy bits in the urine. There has been no pain. The history is, as you see, absolutely typical of bladder tumor, lacking only the positive confirmation of seeing the growth with the cystoscope, or finding the characteristic fragments microscopically in the urine. Such confirmation the patient *stated* he had received in New York, from a physician of high authority, who, the patient says, told him that a villous growth was plainly visible through the cystoscope, and that the microscopic examination also furnished further proof of its presence.

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[2] Since this period the patient has had a short illness, in which the gastralgia returned for a time.

[1] Read before the Society for Medical Improvement, Feb. 11, 1889.

This I have noted, in order to make prominent the fact that an exceptional condition may (if the patient correctly quoted the doctor's opinion) lead, as in this instance it proved to be, to a faulty diagnosis, even in the presence of such positive proof as was furnished.

When the patient came to me early in December he was very anæmic and still weak from his last hæmorrhage, about a month previous. During three days I examined the urine, failing, however, to find any positive evidence of a bladder tumor. Two things, however, were evident, namely, the hæmorrhages were of undoubted bladder origin, and they undoubtedly meant the patient's death at no remote period. Upon these grounds I advised operation.

The choice of routes into the bladder was through the perinæum or from above the pubes. As he had a greatly lengthened posterior urethra due to the prostatic hypertrophy, and also a large and distensible bladder easily raised above the symphysis pubis, the latter way was selected. The cystotomy was done in the usual manner, with Petersen's technique. The inner surface of a thin-walled bladder was found to be entirely smooth, and no villous or other growth was present, except the projecting lateral portions of a greatly enlarged prostate. These jutted boldly backward into the cavity of the bladder, each lateral portion being about the size of a very large Spanish chestnut. They were connected by a less prominent median ridge, which had been perforated about half-way from its base, at some time previous, by an instrument. Surrounding this hole was a surface of the size of the end of one's thumb, covered with flabby and exuberant granulations, and this area was the only intravesical source of the hæmorrhages to be found. The lateral portions of the prostatic hypertrophy were then divided into halves by a blunt pointed bistoury, and each portion removed by a wire ecraseur to its base, the median portion, together with its granulating surface, was taken away with scissors and curette.

The bladder and outer wounds were both left open, and a large double rubber drain, reaching to the bottom of the bladder, was placed in them. Hemorrhage during and after the operation was but slight, and ceased on the fourth day, recurring for one day moderately, when the sloughs separated from the wounds at the end of two weeks. There has been none since (three months). A single drainage-tube was substituted at the end of a week, and all drainage was removed on the twelfth day. The wounds united on the sixteenth day, and the patient was up and about on the eighteenth day. A week later, having been very restless, and sleepless for four nights preceding, heart failure occurred, the first sound becoming scarcely audible; the pulse rose to 100–110. The urine rapidly diminished in quantity, and was deficient in its solid constituents. The patient was pallid, and greatly prostrated. Dr. Whittier saw him at this time in consultation. Digitalis, stimulants, and appropriate feeding restored the patient. On substituting tinct. strophanthus for the digitalis forty-eight hours later, he relapsed into his former dangerous condition, which was again overcome by digitalis, etc. From this time he steadily gained, and went home at the end of six weeks from the date of operation, and has continued to do well since then; voluntary power of urination was not, however, restored. He reports, a day or so since, rapid gain in strength, and in all respects.

This case presents, I think, points of unusual interest, the chief of which is that, already noticed, namely, that in rare instances prostatic hypertrophies may so simulate symptomatically in every respect other bladder growths (papilloma, etc.) as to entirely mislead, and furnish much apparently positive evidence of their existence.

Another matter of importance in connection with such a case is the advice as to operation. If the diagnosis is of bladder tumor, operation looking to *its removal* should always be advised, provided it is believed to be benign, and unless the patient is too far exhausted to undergo the operation. This in view of the successful results attained in many instances, and the necessarily fatal termination of the disease, if left to take its course.

If the growth is, on the other hand, believed to be cancerous, then the decision as to surgical interference turns on the question of pain; if this be severe a palliative operation by drainage should be advised; if painless, the disease had better be left to itself, in view of the inevitable result in any case.

Advice as to operative interference in cases of prostatic hypertrophy should, I think, be based upon the indications that I have recently pointed out in a work upon this subject ("On the Operative Treatment of the Hypertrophied Prostate"), viz., "Necessary, frequent (once an hour), painful catheterization, or urination without the catheter, especially when accompanied by a foul or hæmorrhagic cystitis. Attacks of retention; and failure to relieve such condition by palliative treatment." When such symptoms are present in any patient, and due to obstructive enlargement of the prostate, operation should, I think, almost always be advised, and undertaken before the patient is so reduced by the effects of the malady as to make the operation almost necessarily fatal, and consequently impracticable. I need not delay here to discuss operative methods. It is unquestioned, of course, that under the best of circumstances extensive surgical procedures, in these cases, will always be dangerous, and that fact must of course always be included in advising them. But such risks are, I think, to be preferred, in view of the highly probable benefit attending a successful issue, to the inevitable and near end of the patient's life, and the constant torture he must experience in whatever interval may precede that termination, if the case be left to palliative measures that have already proved ineffectual. I know of no picture more pitiable than that of an old man, a slave to the constant and painful use of the catheter and a tormenting desire to urinate. In the case I have reported the operation was not undertaken primarily for relief of the obstruction to urination (for the patient's bladder was quiet), but to avert if possible death from hæmorrhages. This object is in all probability accomplished.

— Bills for the regulation of medical practice are before the legislatures of Rhode Island, Connecticut, and Tennessee.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

February 11, 1889. Dr. W. L. Richardson, President, in the chair.

PROGRESSIVE MUSCULAR ATROPHY.

Dr. P. C. Knapp showed a case of *progressive muscular atrophy* (type Aran-Duchenne). The left arm was the most affected and showed the characteristic atrophy of the thenar muscles. There was still some movement in the left thumb. The hypothenar muscles were a good deal wasted and there was also some little wasting of the interossei. In the muscles of both arms there was quite marked fibrillary twitching. This disease dated back about six months. Four years ago the man had pneumonia, after which he suffered a good deal of pain in the feet and was laid up some time. Then he had some pain in the head and considerable mental disturbance. About six months ago this wasting came on and with it the hand felt numb. His voice he thinks has been a little affected. Dr. De Blois has examined his larynx and found the vocal cords a little lax, but no more than could be accounted for by slight catarrh. The muscles show the ordinary changes of the reaction of degeneration. There is no sensory disturbance to be made out; and the probable onset of bulbar disturbance makes the case pretty clear. The point of interest is the man's age. He is sixty-eight years old, and it is certainly a very rare thing to find this disease coming on at such an advanced age. Gowers, I believe, says that the disease may come on at various periods until seventy. I have not had an opportunity to look up other authorities in respect to the age, but certainly 68 is rather old for it to begin. There is no difficulty in swallowing and no exaggeration of the reflexes or spastic condition. There has been some tremor of the hands, especially the right, which has more or less disappeared now. It seems to be due to the general condition.

Dr. F. S. Watson made an oral communication of

A CLINICAL NOTE UPON RENAL CALCULUS.

There is nothing new in the first of the two communications I have to offer to-night; but the observation is sufficiently exceptional to make it unfamiliar in all probability to many. It is as follows: — In some cases of renal calculus the urine fails to furnish any evidence whatever of the condition, even though the stone be of very rough and sharp contours. I happen to have had in my practice within the last two years five such cases, the final verification of the diagnosis being finished, in all, by the passage of the stone; four of these calculi are these which I submit to your inspection. The fifth was lost.

Without entering into the detail of the cases, I need only to say that in these cases, previous to the passage of the stone the urines were frequently examined, with entire failure to detect anything abnormal in the various specimens, the examination extending over varying periods of from several days to two and three weeks. When to this absence of evidence of this condition in the urine, is added also the absence of the characteristic attacks of colic — the only symptoms being, as in one of these cases, those of irritable bladder — the diagnosis may become exceedingly difficult, and can only be conjecturally made by excluding the other diseases that may cause the same symptoms. It should be borne in mind that frequent and painful urination, and pains darting along the urethra, are not infrequently the only subjective signs furnished to the patient, and are, in the absence of other causal agents, most suggestive of the presence of stone in the pelvis of the kidney.

Dr. Watson also read

A CASE OF SUCCESSFUL REMOVAL OF PORTIONS OF A PROSTATIC HYPERTROPHY THROUGH A SUPRA-PUBIC CYSTOTOMY.[1]

Dr. A. T. Cabot: The case to which Dr. Watson referred is not wholly finished. The microscopic examination of the bladder is not entirely completed, and the positive absence of any villous growth anywhere in the bladder has not been thoroughly established, so that I will leave the reference to that case to some future time when all the facts are in.

In regard to the clinical observation that stone in the kidney may exist without positive signs in the urine, I can corroborate it from a number of cases, some in which at autopsy a number of stones were discovered, and still there had been no symptoms of them in the urine which had been repeatedly examined before death.

There is one point about renal stone I should like to speak of, and that is the fact that in some cases it occurs that the kidney stone gives almost no signs except such as are referable to the bladder. I had a striking case a year or two ago, where a patient who had had kidney stones pass from the bladder came to see me with symptoms of stone in bladder — bloody urine, pus in the urine, thick, ropy, good deal of pain during and after urination, and pain aggravated by motion. I etherized him and made a thorough examination, pumping carefully with the litholapaxy pump, to make sure no small stone existed there. I got absolutely nothing but the thick, ropy mucus from the bladder. Three or four days after the operation he was seized with pain in the back; had a mild attack of renal colic, and passed a phosphatic stone as large as an orange seed. From that time he was entirely relieved from all the symptoms which had been annoying him before, and continued well for several months. He began to have symptoms of a stone passing down the ureter again last spring in May, lasting two months. At the end of that time a stone came into the bladder and was passed by the urethra, a pretty large one, but at that time his symptoms were not relieved by the passage of the stone. The patient came to me this autumn, and an examination under ether revealed the presence of a stone weighing sixty to seventy grains in the bladder, which was crushed and removed. He was again entirely relieved of the symptoms. It was evident that the first attack, which simulated in almost every way the condition in the case of vesical calculus, really was caused by a calculus in the kidney, which had not at that time reached the bladder.

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[1] See page 237 of this Journal.

Dr. E. S. Wood: I have nothing to add except to corroborate what Dr. Watson and Dr. Cabot have said in regard to the presence of renal calculus without the slightest evidence of anything in the urine previous to the passage of the stone, — cases which have afterwards proved to be cases of renal calculus; and what Dr. Cabot has just said recalls a case that was reported to this society, where a pyelitis or an irritation of the pelvis of the kidney from gravel or sand existed, and the symptoms were exclusively referred to the bladder. There was no real evidence of any inflammation in the bladder, but evidence of inflammation of the pelvis of the kidney.

Dr. Watson: I should like to say in connection with this same fact that Dr. Cabot and Dr. Wood noticed that in the case of that smaller stone the only symptom was a scalding sensation at the end of the penis. This is a significant fact — often passed over — in the history of renal calculus. In answer to a question as to how the perforation of the bar at the neck of the bladder in the case just reported was made, Dr. Watson said it was, from appearance, made by a catheter. In passing a catheter in and out it went sometimes one way and sometimes another.

Dr. J. J. Putnam read a paper entitled

THE SYMPTOMATOLOGY OF ARSENIC POISONING OF WALL-PAPER ORIGIN; BASED ESPECIALLY ON THE EXAMINATION OF A NUMBER OF CASES WHERE ARSENIC WAS FOUND IN THE URINE; TOGETHER WITH REMARKS ON THE TIME NECESSARY FOR THE ELIMINATION OF ARSENIC.[2]

Dr. Rotch said that he considered Dr. Putnam's work as represented in this paper very valuable, for definite symptomatology for cases of arsenical poisoning was much needed.

He also said that he believed that we knew too little as to the amount which might prove dangerous from absorption from wall-papers to justify us in not removing an arsenic wall-paper, where, although the analysis showed the amount of arsenic in the square yard to be within the prescribed fractional limit, yet the patient presented indefinite symptoms which could not be brought under the head of any particular disease.

Both the age and the individual idiosyncrasy must be considered in this question; some individuals being entirely unaffected where they are exposed to the absorption of arsenic in large amounts, while others suffer severely from a small amount.

In infancy the equilibrium of the vitality is so unstable that when once it has been overthrown by arsenical poison, the infant may die from simple atrophy, although the poison has been entirely eliminated. Dr. Rotch cited cases to illustrate his views. In one case, an infant ten weeks old, a mere trace of arsenic produced decided symptoms which disappeared on removing the infant to another room.

In another case, an infant fourteen months old, after an attack of acute arsenical poisoning, died of simple atrophy after the arsenic, as proved by a careful examination of the different organs, had been entirely eliminated.

Dr. Rotch stated that his two cases where arsenic had been found in the urine were interesting as illustrating the individual susceptibility of certain organs. Both cases were exposed to the same amount of the poison (one-third of a grain of white arsenic to the square yard of paper) and during the same period of time. The adult had a decided nephritis, while the child, although attacked by a disease, scarlet fever, in which the kidney is especially sensitive to disturbance, had no renal disease. The arsenic in both these cases disappeared from the urine in about three weeks from the time when they were removed to a room which was free from arsenic.

Dr. J. T. Nichols: One fact in regard to the slow elimination of arsenic. In one of the cases arsenic was found in the month of February or March; the paper was removed and the symptoms improved. In July the urine was examined and contained nearly as much arsenic as at first. In September or October it had disappeared. The paper was removed very soon after the first examination.

Dr. W. B. Hills: The case which the reader has spoken of, and which Dr. Rotch has referred to, is one which has been of much interest to me, because it seems to me to be pretty well established that the condition of the kidneys in that case was actually due to the action of the arsenic. This was also suggested by the rapid disappearance of symptoms when the nurse was removed from the room. It is interesting also from the fact that the quantity of arsenic in the paper on the room was substantially determined to be about one-third of a grain to the square yard. It seems to me to be very important that many more determinations of the actual amount of arsenic present in papers suspected to have given rise to symptoms of arsenic poisoning should be made. Hitherto such determinations have been rare. I know personally of two cases of what seemed to be fairly well established cases of arsenical poisoning from wall-paper where the paper contained approximately one-third of a grain per square yard, estimated in the form of white arsenic; so that I have no doubt that this amount of arsenic is sufficient to give rise to symptoms traceable to arsenic.

I agree with what Dr. Rotch has said in regard to the difference in adults and children; and I have no doubt from my experience in the last year or two that if one-third grain is capable of producing such symptoms in an adult that mere traces may produce poisoning in children; and I think I am gradually getting to be a little more rigid in the tests which I subject wall-paper to; although, abroad, within the last year or two, I think scientific men have come to consider that a much larger amount of arsenic may be employed in papers than we have been accustomed to consider proper in this country, and the natural consequence of that conclusion is being rapidly seen in this country.

Dr. Putnam has very rightly said that the number of arsenical wall-papers is much less at the present time than heretofore. I think myself that the manufacturers in this country are at the present time taking all the pains in their power to prepare their papers free from arsenic. I cannot say as much for the foreign manufacturers. A very large proportion of the papers of foreign manufacture — and I am in a very good position to know in regard to this, because I make analyses of a large number in the course of a year — contain an appreciable amount of arsenic, and the number of foreign papers which I should condemn as unsuitable for use is in my experience quite rapidly increasing; and it seems to me that this is perhaps just the result which should be expected from the conclusions of the scientific committee who a year or two ago reinvestigated this matter and concluded that a larger amount might be allowed than we are in the habit of allowing.

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[2] See page 235 of this Journal.

I agree with the reader that there is at present every reason in the world why we should keep this subject agitated, because I do not believe the danger is past.

Dr. Wood: I am very glad to hear the report of these cases. I think every one knows how frequently within the last few years the attempt has been made to have a law passed in our legislature to restrict the sale and manufacture of arsenical wall-papers, and I think the only way we shall ever be able to get such a law is by being able to bring forward a large number of accurately reported and well-authenticated cases of arsenical poisoning where there is no doubt whatever as to the presence of arsenic in the system, and where we are able to state accurately or at any rate within narrow limits the amount of arsenic in the wall-paper which has proved dangerous. I hope that every case of arsenical poisoning that is thoroughly investigated will be published, so that it can be gotten at in time of need when another application is made to the legislature.

In reference to the character of the urine in these cases of wall-paper poisoning, I know that in certainly three or four cases of my own, suspicion has been directed to the presence of arsenic in the urine, from the result of the clinical analysis of the urine, the finding of the condition which we rather refer to as "active hyperæmia of the kidney" than "subacute nephritis," where no other explanation of such condition can be recognized. For instance, I recall one case where the urine was dilute, pale, and without anything of its own nature that could possibly give rise to any irritation. It was not concentrated and not excessively acid, was passed in large quantity and contained a slight trace of albumen with all the elements and sediment of the active hyperæmia. On making further inquiry I found it the case of a young man sixteen or seventeen years old, who slept in a room papered with a pure paris-green paper, one of the old-fashioned pale-green papers, which was an excessively dangerous one. The symptoms very quickly disappeared after removal from its influence, and the urine returned to its normal condition after the lapse of some time.

I think it is very difficult to make any accurate statement in regard to the time of elimination. There are certain cases which seem to show that it does require six to eight months for arsenic to be entirely eliminated from the system. But I think it ought to be remembered that in these cases of wall-paper poisoning the amount of arsenic present in the urine is usually only a minute trace, and that in cases where arsenic has been taken internally, the longest reported period that I know of, with the exception perhaps of the one Dr. Putnam mentioned — that one I was not familiar with — was six and a half weeks, none being found in seven and a half weeks after omitting the arsenic. The number of sources for the absorption of arsenic is so great, from clothing, wall-paper, carpeting, etc., that it is very difficult to say when all of the sources of poisoning have been entirely removed. That seems to me a fair explanation of the continuation of the arsenic in the economy in some of these long-continued cases. Dr. Putnam spoke of the accumulation of arsenic in the economy. Arsenic is not cumulative in the same sense that lead is, and that I think every one acknowledges. Lead is a cumulative poison remaining in the system for years unless removed by treatment, but arsenic does finally get out of the system, but not in one or two days; in that sense it is cumulative, not in the sense that lead or copper is.

Dr. John Homans: Seven or eight years ago I was called to Roxbury to see a girl six years old, who had catarrh of the posterior nares and fauces; she was pale and was continually having sore throats. I gave her cod liver oil, and Dr. Langmaid also saw her. After a time, an older sister, about sixteen years of age, began to have painful spasmodic twitchings of the anterior muscles of the neck. One day I was called to see the little girl, who was in the nursery, and going up stairs it flashed over me what the trouble might be. The stairway was papered with landscape paper, covered with great green fields and parade grounds, figures of soldiers and a great amount of green coloring, a large water view and a review of troops, and in the nursery was the same patterned paper. I spoke to the father of the children about it, but he was very proud of this paper, and was indignant at my hinting that this was the cause of illness, so that I used to visit these children many times in the course of a year. I finally persuaded the gentlemen to send this paper to the Medical College. The report was that the paper was an extremely dangerous one on account of arsenic. It was taken off and the children have been very much better; the sore throats are very much less frequent, and the spasmodic twitching has entirely disappeared; and instead of going two or three times a week, I have not been there four times in five years. The urine, I regret to say, was never examined in these cases.

Dr. Hamilton Osgood: I would like to call attention to one fact which undoubtedly is familiar to Profs. Wood and Hills, but which until quite recently was unknown to me, namely: that, of the wall-paper in a room, one breadth may contain arsenic and another may not. So that, suspecting arsenic in a given case, the physician may order an examination of the paper in question, a part of a breadth is analyzed, no arsenic is found, and in many cases it seems probable that the suspicion would thus be allayed, when other breadths, or another portion of the breadth already examined, may contain arsenic.

There is an amusing story in proof of this which perhaps Dr. Wood will not object to my telling. Dr. Wood examined a paper sold by X and stamped it "arsenical." X immediately sent him a specimen of the same paper which previously had been stamped by Dr. Wood as "non-arsenical." Still having portions of both specimens, Dr. Wood re-examined them, with the same result, one being arsenical, the other non-arsenical.

It seems to me that the only protection for the public is to make paper-dealers liable for the arsenic which is found in their wall-paper. But it appears that manufacturers of wall-paper suppose themselves innocent; because in one case the coloring matter which they buy being free from arsenic, and exhausting these colors before finishing a certain lot of paper, they buy another quantity of similar coloring matter which does contain arsenic, but not to their knowledge. So that one portion of the paper contains no arsenic, while the remainder of the lot holds a poisonous quantity. Consequently a purchaser on buying this paper may have a roll tested, and, finding it free of poison, rests satisfied, while several other rolls or the entire balance may be arsenical. Of course, the simple duty of manufacturers is to test their colors before using them. If I am wrong in the story I have related of Dr. Wood's experience I would like to be corrected.

Dr. Wood: The explanation is that the two different rolls belonged to different lots of paper, that is, the same color, but from different lots of coloring matter. Take two samples of magenta; one sample may be perfectly pure, non-arsenical, and the other sample, giving precisely the same color to the paper, may be very arsenical.

Dr. J. C. White: I would like to ask if Dr. Wood or Dr. Hills has any data by which the question that is raised by Dr. Putnam can be positively answered: whether once covering an arsenical paper with a non-arsenical paper, arsenic can penetrate the overlying paper, and whether by analysis they have proved the interpenetration of the outer paper by the arsenical substance beneath. That, it seems to me, could be very easily settled by making analyses of the overlying paper, taking care not to remove any of the underlying paper.

Dr. Wood: I have never made any direct experiments, but I think it is a well-understood matter that in the presence of moisture the arsenic can be decomposed and a volatile compound formed which may pass through the outer paper and affect persons in the room. Of course the covering by the outer paper would protect from dust, but not from arsenic in volatile form.

Dr. White: Any such slight degree of moisture as exists in any dwelling-house, or much more than that?

Dr. Wood: Any degree of moisture liable to be in a dwelling; and varnishing has always been considered not to completely protect, only partially.

Dr. Hills: I have made no experiments, but it seems to me the whole question hangs on the form in which the arsenic is given off, undoubtedly in the form of dust in most cases, but the experiments of Hamberg seem to show the possibility of arsenic being given off in some volatile organic combination. If it is true that it acts in a certain number of cases through the formation of some of these volatile organic compounds of arsenic, some of which are extremely poisonous, we have got to admit the possibility of diffusing through the outside paper, I think.

Dr. White: With regard to the administration of arsenic by ourselves; if Dr. Putnam is familiar with any such nervous symptoms of mild degree or obscure character commonly following the administration of arsenic in medicinal doses?

Dr. J. J. Putnam: I have myself seen one or two cases of that sort which may be called poisonous, and in the papers I alluded to I collected quite a number where there seemed to be no question that medicinal doses have given rise to very serious symptoms. One case beside those reported in the Medical and Surgical Journal last July was that of a man who had taken arsenic in regular doses — small, regular doses for several years, — and all of a sudden presented symptoms of acute poisoning.

Dr. A. T. Cabot: In some other poisons, as in case of iodoform and carbolic acid, for instance, it has been remarked that when the kidneys are disabled or not up to their full work poisoning is much more likely to take place. I should like to ask whether any such observation has been made in the case of arsenic.

Dr. Putnam: In the first place arsenic is given off by all the different excretory organs of the body, through the fæces, sweat, urine, saliva, etc., so that of course the kidneys only have a certain share, but Prof. Taylor, who is conservative in regard to the matter of accumulation, admits the possibility that accumulation may perhaps take place when the kidneys are not working well; and the case which I observed and reported last July, which I think may have been a case of poisoning from medicinal doses of arsenic, was of a patient whose kidneys were not in a perfectly sound condition.

Dr. Cabot: I think it would be interesting to observe the amount of arsenic in the urine of persons in the same house exposed but not affected.

Dr. Wood: I feel very positive that arsenic does irritate the kidneys in itself, and if sufficient irritation is produced it may get up almost a parenchymatous inflammation.

Dr. Knapp: Partly in answer to Dr. Cabot's suggestion I would say that in one family of which Dr. Putnam spoke I saw one child as a patient, and the mother and another child as they came to my office with the child who was ill. The three children were all together: two of them were in school. My own patient was too young to go to school. The mother and this youngest child were the only ones of the family who presented any very distinct symptoms of arsenical poisoning. If my memory serves me rightly one or two other members of the family had arsenic in the urine without any special symptoms. The patient that I saw presented when I saw her nothing very definite in the shape of objective symptoms to me. Much of my information was obtained from the mother's account of the child's condition. I saw no special inco-ordination. I did find a slight diminution of the sensibility. I found no special loss of strength or nerve tenderness. The last time I saw the child the knee-jerks were a little less than the first time. I examined several times with electricity and did not find changes in the reaction in the muscles tested. I did not test all the muscles of course, and some of those not tested may have been affected.

Dr. Putnam: I agree with Dr. Wood that these cases are not suitable ones for testing the question of elimination, because there is the possibility of poisoning coming from other sources, but I thought it worth while to report them.

In regard to Dr. White's question, I should like to say that several of the cases of Kirchgasser to whom I referred in my paper were cases of poisoning apparently from rooms where the paper or paint was covered over with some coating which was supposed to make it safe, but he found that in a number of places the coating had been broken through so there were cracks and fissures where the underlying color was exposed. He also found the walls damp to some extent.

Dr. Wood: I would like to say one word in reference to Dr. Nichols' case, for instance. The apparent cause of the poisoning in that case was removed in February or March and yet arsenic remained in the urine up to July and was absent from the urine in September. There is a possible explanation, it seems to me, for that long continuation of arsenic, in other possible sources. Between July and September all the windows and doors are usually open, and there is far less opportunity for arsenic to be absorbed by a patient than when living in the same room and in the same house in the winter and spring. It seems to me possible that all the sources of arsenic were not removed in that case; that absorption did not take place in the summer time because everything was thoroughly aired. That is only a possibility, of course.

FIBROID OF THE UTERUS.

Dr. Homans showed a solid fibroid of the uterus weighing eight pounds. He saw the lady last September. The tumor reached to the umbilicus. At that time there seemed no need of doing any operation. Since then she has married. Within the last three weeks the abdomen had increased very much in size and the tumor had nearly reached to the sternum. In removing the tumor he did not open the cavity of the uterus nor remove either ovary, nor tube.

PLATE OF TEETH IMPACTED IN THE ŒSOPHAGUS.

Dr. Maurice H. Richardson showed a plate with one tooth attached which he had removed a few days before from the œsophagus of a young man. "Ten months ago while eating he felt something scrape his throat. Immediately after he missed the plate from its accustomed place. He went at once to a physician, a homœopath, who administered in the course of a short time two gallons of mustard water, producing prolonged and violent vomiting, without dislodging the plate. Later another physician passed a probang and thought he had forced the plate down into the stomach. He was under several other physicians during the following ten months, for cough, expectoration, hoarseness, and difficulty in swallowing. It was supposed that the plate had passed down safely, and that his symptoms were due to tuberculosis of the lungs with ulcerations of the larynx. He lost thirty pounds in weight, most of which had been regained by the use of cod-liver oil.

On examining with the probang I discovered the plate nine and a half inches from the upper incisors, apparently firmly impacted. There was very peculiar phonation, with some hoarseness, which I thought due to pressure upon the trachea.

I anticipated great difficulty in dislodging a body so long impacted, and prepared to do external œsophagotomy. The situation was so low down that I was of the opinion that there would be some difficulty in reaching the plate even with an incision in the neck. The day before the time proposed for the operation I passed the coin probang to find how firmly the plate was impacted, when without the slightest difficulty it was withdrawn from its bed and expelled upon the floor. The patient made a rapid recovery, but the hoarseness continued. Dr. Hooper kindly made an examination of the larynx, and reported that there was congestion of the vocal cord with paralysis of the left. The left recurrent laryngeal nerve was undoubtedly pressed upon and injured enough to cause complete paralysis of the abductors of the left side."

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON OBSTETRICS AND GYNÆCOLOGY.

Stated meeting, January 24, 1889. J. F. Janvrin, M.D., Chairman.

Dr. J. Nilsen read a paper on

SOME UNUSUAL COMPLICATIONS IN OPENING PELVIC ABSCESSES THROUGH THE VAGINA, OR BY LAPAROTOMY.

Dr. H. J. Boldt read a paper on

THE TREATMENT OF SUPPURATIVE DISEASE OF THE UTERINE APPENDAGES.

At the present time, he said, there was much difference of opinion in regard to the justifiability of surgical interference in diseases traced to the uterine appendages, and while some gynæcologists have gone to extremes in operating, others have gone to extremes in the opposite direction; instead of keeping the medium and selecting cases for operation with great care. Cases of such disease might be roughly divided into three groups: (1) those in which an operation is altogether unjustifiable; (2) those in which it is the wiser course to keep the patient under treatment for a time, in order to observe what benefit may thus be derived, before deciding finally as to the advisability of operating; and (3) those in which delay is not only unadvisable, but actually fraught with danger.

His special object was to urge the necessity of abdominal surgery, as a rule, in the disease of the fallopian tubes known as pyosalpinx; excluding certain exceptional cases to be noted hereafter. His plea for operative interference was based upon a number of cases which had come under his own observation, and the histories of which he now proceeded to narrate.

Case I. April 15, 1887. Theodora K., thirty-six years of age. Married sixteen years; one child, born fourteen years ago. Labor was instrumental, and followed by metritis and peritonitis. Her illness dated back to this confinement. During the last few years her pains have increased, and she has had a number of attacks of localized peritonitis. Five years ago she was infected by her husband with syphilis, from the secondary effects of which she is still suffering; and the increase of her suffering thus corresponds with the syphilitic poisoning

Having described the symptoms and the physical signs, he said that the diagnosis made was double salpingo-oophoritis syphilitica with endometritis, and an operation was advised if improvement did not result from a few months' treatment. On May 15th a fresh attack of pelvic peritonitis occurred as the result of violent physical exertion. On May 20th he was summoned to the patient, who was suffering intense pain, and found her then with a general peritonitis. At this time the tubes, which could formerly be distinctly mapped out by the fingers, had lost their contour, and in the position occupied by them a general fullness was found; while the examination caused excessive pain. It was thereupon apparent that the tubes, which had been distended with pus, had ruptured, and a general peritonitis had thus been excited. The patient was removed to the hospital on the same day, but unfortunately he did not make up his mind to operate until the following afternoon, when an experienced colleague concurred in the diagnosis and the course to be pursued. At 9 P.M. he performed abdominal section, when the diagnosis made was confirmed. The abdomen was thoroughly washed out, and a Sims drainage-tube placed behind the uterus; washings being made afterward at frequent intervals. For thirty-six hours the patient did well, but she then began to sink, and sixty hours after the operation died in collapse.

Case II. Kate L., æt. twenty-nine, single. Never pregnant; seen in consultation May 25, 1887. She gave the history common to cases of salpingitis previous to her present illness. On April 21 she was suddenly seized with severe pain in the lower part of the abdomen, which gradually increased in intensity for some time, and then began to subside. On May 23 she again became worse, and developed a high temperature. On examination it was found that she had general peritonitis, and was much emaciated. The seat of the most intense pain was to the right of the uterus, where a fullness and slight fluctuation were appreciable. The diagnosis was septic peritonitis from the rupture of the right fallopian tube, in which pyosalpingitis had previously existed; and this was confirmed when laparotomy was performed on the following day in the hospital. The abdominal cavity was thoroughly cleared of pus, but the hæmorrhage was so profuse from the points where the adhesions were separated, that no attempt was made to introduce a drainage-tube, and the patient's condition was so poor that time could not be spared to look up and secure all the bleeding points. Instead, that part of the pelvis from which the hæmorrhage came was tamponed with iodoform gauze. The peritoneum was separately closed, as in all Dr. Boldt's abdominal sections, with the exception of the lower angle where the tube protrudes, when the latter is used. The patient rallied remarkably well after the operation; the iodoform gauze tampon acting admirably as a drain or as a hæmostatic. Thirty-six hours afterwards it was removed, and a hard-rubber, double-current drainage-tube, through which the abdominal cavity was washed out, inserted in its place. Later she began to sink, and on the fourth day she died. The autopsy showed diffuse nephritis, but the pelvis was perfectly clean, and there was found to be a decided diminution of the peritonitis.

The third case was that of a young woman twenty-three years of age, who had been married eighteen months, and had a child one year after her marriage. The diagnosis was endometritis and double pyosalpinx of puerperal origin. Both tubes were felt enlarged, and the right ovary was almost the size of an English walnut. The uterus was displaced anteriorly, and was very tender, and the cervix was lacerated bilaterally. On June 12th he was suddenly summoned to see the patient, who had been seized early in the morning with a very severe attack of abdominal pain, accompanied with vomiting. She was suffering from slight shock, and there was marked tenderness over the entire abdomen, but no evidence of intense general peritonitis. The enlarged tube could no longer be felt on the right side, and the diagnosis of rupture of a pyosalpinx was made. Within two hours after first seeing the patient he opened the abdomen, and the diagnosis was confirmed. Peritonitis had already begun, but after thoroughly cleansing the abdominal cavity he closed the wound, using no drainage; and the patient made an uninterrupted recovery.

The fourth case was also a young woman with double pyosalpinx of puerperal origin. Operation was advised, but the patient did not consent. On July 27th she was attacked with intense abdominal pain and tympanitis, and the diagnosis of commencing peritonitis from rupture of one or both tubes was made. Abdominal section was promptly performed, the cavity thoroughly cleansed, and the wound closed. Although the peritonitis had made considerable progress for such a short time, the patient made a complete and rapid recovery. In this instance one tube had ruptured, causing the attack, and the other became ruptured during removal.

In commenting on these cases Dr. Boldt expressed great regret at not having operated earlier in the first case, and stated that twice within the past two years he had seen cases on the post-mortem table which had died of purulent peritonitis distinctly attributable to a ruptured pyosalpinx. These cases he also related. The first came to his clinic in March of last year, and at that time he advised opening of the abdomen and removal of the uterine appendages. On June 30 he was summoned to the patient's home, where he found her suffering from general peritonitis. The immediate operation was declined, and she died July 2. In the second case the patient also developed peritonitis; but recovered without an operation. This prognosis was guarded, however, as the tubes continued to enlarge after this. Subsequently she had a very sudden and sharp attack of pain in the right inguinal region, and when he reached the bedside he found her in agony, screaming with pain, cyanotic, and with a high temperature and feeble, frequent pulse. The diagnosis of rupture of the right tube was made; but as the patient rapidly improved under opiate treatment, while the preparations were being made to operate, and it therefore seemed possible that an error had been made in diagnosis, it was decided, on consideration, to defer the operation, at least till daylight.

In two hours, however, she began to sink, and by morning operation was entirely out of the question, despite the free use of stimulants.

His conclusion was that abdominal section cannot be too strongly urged in every case of active pyosalpingitis, from whatever cause it may arise, except in the rare instances where the uterine extremity of the tube is patent, so that pus can be squeezed out of the latter into the uterus; and excepting also those cases where the tubal disease is complicated with another disease which itself will probably destroy life in a short time. As to the question of diagnosis, he thought that a careful observer, experienced in this line of work, would not often make a mistake. The conditions from which it was usually necessary to differentiate were hydro- and hæmato-salpinx; but if the tubes are much distended, the question of ovarian or parovarian cyst would also have to be taken into consideration. The history of the case was often of the greatest importance in determining its true nature. While many gynæcologists considered it unjustifiable to operate for hydro- or hæmato-salpinx, it was, unfortunately, an impossibility always to make the positive diagnosis before opening the abdomen; and furthermore, he still adhered to the opinion expressed by him two or three years ago, that even cases of hydrosalpinx should be operated on if they give rise to serious morbid symptoms which cannot be alleviated by other treatment, because the simple and inert liquid may take on purulent changes as the result of an inflammatory condition set up in the walls of the tube, or of the extension of endometritis. It was also a fact that, in consequence of their openings being blocked, the tubes might become distended to such an extent as to cause rupture, with the possibility of fatal peritonitis resulting.

He desired to lay special stress on the point that when we have reason to expect active suppurative disease we should open the abdomen; from which procedure, even if our diagnosis should be erroneous, not much harm would result to the patient. If the diagnosis of pyosalpinx were correct, immense advantage was conferred upon the woman, since, in the first place, the operation, as a rule, removed the pain incident to the condition, and changed her from an invalid to a healthy individual, and, secondly, removed the danger of rupture of the tube and fatal peritonitis. It was true that at the meeting of the American Gynæcological Society in 1887 a prominent German operator had stated that his mortality from salpingo-oophorectomies was over 12%, and that in his last published statistics this percentage was even somewhat higher; but it was to be borne in mind that the cases selected by him for operation were extremely unfavorable, since he waited very long, and exhausted all other means of treatment before resorting to it. It was against this very long waiting that he would protest. Why let a patient suffer so long, when from the history and the physical examination we have satisfied ourselves that she is suffering from a condition not amenable to non-surgical methods of treatment?

In any case where pyosalpinx was supposed to exist, and, laparotomy having been performed, it was found that hydro- or hæmato-salpinx was present, Dr. Boldt was very positive that the tube should be removed, notwithstanding the fact that it did not at the time of the operation contain pus, provided it was found at some point firmly occluded from the effects of adhesive inflammation.

In some comments on the second case recorded in the paper he said that, admitting that home care among the poorer classes was very much inferior to hospital nursing, he should not again expose a patient suffering from general peritonitis to the danger of removal to a hospital (which in this instance was about four miles from the woman's residence); but take his chances of watching the case at home. The patient's condition being so very low, it was of paramount importance to operate as quickly and with the loss of as little blood as possible, and in this case the iodoform gauze, advocated principally in Germany, was used with much success; the many bleeding points and the broken-down condition of the tissues rendering it impossible to successfully apply ligatures or the hæmostatic forceps. Since that case he had several times had occasion to observe the efficacy of the gauze packing in profuse intra-abdominal hemorrhage where every other allowable means known to him would have been a positive failure. In this instance the peritoneal cavity, after the removal of the gauze tampon was dry, and free from odor, and he now believes that if he had then finally closed the wound (not introducing any drainage-tube at all) the patient would have recovered.

In conclusion, Dr. Boldt said that no one could be more opposed than he to the indiscriminate removal of the appendages, which had unnecessarily unsexed so many young women. Even should pyosalpinx exist, if the distention of the tube was slight and gave rise to no morbid symptoms, it was the unwise plan to wait, in the hope that the pus would become inert by undergoing cheesy degeneration. In other cases where the question of operation arose, massage employed after the method of Brandt was an excellent means to diagnosticate the patency of the tube, and should a communication exist between the tube and the uterus, it constituted, if properly practised, a very valuable adjunct in the treatment. It might be, however, a very dangerous procedure in the hands of an inexperienced manipulator.

Recent Literature.

A Text Book of Physiology. By M. Foster, M.A., M.D., LL.D., F.R.S. Fifth edition, largely revised. Part I., comprising Book I. London and New York: MacMillan & Co. 1888. 8vo. pp. xviii., 352.

The more earnest or, perhaps we should say, the better equipped students of medicine are to be congratulated on the appearance of a new "Foster's." The new edition appears in parts; apparently there are to be three of them, and the first one is a handy, pleasant volume which discusses, in the well-known masterly manner, the blood, the tissues of movement (muscles and nerves), and the vascular mechanism (heart and blood-flow). There are numerous changes from the plan of former editions, notably the introduction of some purely histological matter; but a fuller discussion of the book may be deferred until all the parts are at hand.

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THE NEW YORK WATER SUPPLY.

AMONG other matters of interest to be found in the Ninth Annual Report of the New York State Board of Health, which has just been issued, is a statement of some length in regard to the pollution of the Croton water-supply. The public apprehension on this point led Mayor Hewitt to make application in June last to the Board for a thorough examination to be made of the sanitary conditions surrounding the sources of supply and storage of the waters transmitted to the city for consumption, with a view to the enforcement of such regulations as would afford the largest protection against pollution in the future. The Board at once responded to the application, and through competent engineers made a thorough examination of the water-shed; every source of contamination being investigated, and the results set forth, elaborately illustrated by means of maps and photo-engravings. Based upon the result of this exhaustive engineering report and all the other information collected by it, the Board has formulated certain rules for the sanitary protection of the water-shed; and the general principles governing them are as follows:—

Marginal zones, varying in extent, have been established around every lake, pond, or reservoir adjacent to each spring, stream, or natural water-course of any kind in the entire water-shed, and from these zones it is the intention of the rules to exclude all kinds of contamination upon or below the surface of the ground. Still other zones of larger dimensions have been established, from which it is the purpose to prevent defilement of the surface soil and subsoil, and restrictions as to possible sources of pollution within them have been fixed; although provision is made for appeal to the State Board of Health for any modification in the rules that may be rendered necessary by either topographical peculiarities or improvements in methods of disposing of various kinds of water-products.

In referring to the possible detriment to the industrial interests of the region comprised in the water-shed the report says: "The purity of the water-supply furnished to the enormous population absolutely dependent upon it for the preservation of health in the metropolis is of vastly greater consequence than the rival pecuniary advantage that may accrue to the manufacturer by saving the expense of properly purifying all elements of pollution emanating from his establishment."

On the subject of discharging raw sewage into streams and water-courses the report says: "In the performance of our duties we meet on every side the popular and wide-spread belief that if the volume of the natural stream into which the sewage is discharged be only a few times greater than the volume of such sewage, a spontaneous precipitation of the running water will more or less speedily take place, and render the stream suitable for all domestic purposes. The fact is abundantly proved, however, that the noxious qualities of polluted water are not removed by a flow of many miles in an open channel, even though the water may have become thoroughly clarified by the complete sedimentation of the solids originally held in suspension; and hence also, that any stream which is defiled with putrescent animal matter, especially such as is derived from human beings, cannot safely be employed as a source of potable water-supply. The State Board of Health has accordingly used every effort to bring about a more rational method of sewage disposal wherever it has been called upon to interfere in the interest of the public health, and in a few instances these efforts have happily been attended with some degree of success."

* * *

ON THE TREATMENT OF TÆNIA.

BERENGER-FERAUD, who has written a book which is authoritative, "On the Tæniæ of Man," has published in the *Bulletin Général de Thérapeutique*, February 15, 1889, an article in which he sums up the cases of tapeworm,—in all one hundred and ninety-one patients—at the Maritime Hospital of Toulon during the past year (1888), and the results of treatment.

Of these 191 patients treated for tapeworm at the above hospital, 112 were discharged cured, the worm being expelled head and all; in every instance the tænia was of the variety known as *Tænia inermis*. In 87 instances but one parasite was found; in 11 there were two; in four there were three; in one there were five; in two there were six; and in one unparalleled case seventeen heads were counted as the result of an anthelmintic.

As for the time during which these patients had been afflicted with the parasite, four had carried their tæniæ for three years; two for eight years; and one for eleven years.

As for the treatment, it is still to pelletierine that Bérenger-Férand gives the preference, this tænicide, which is the active principle of pomegranate bark, being by far the most successful of all remedies used. During the year 1888 pelletierine was employed one hundred and fifty-two times as a tænifuge at the Toulon Hospital. Of these cases one hundred and ten were successful, forty-two were unsuccessful, giving 72 per cent. of recoveries.

As for the manner of administration of the remedy, the patient takes nothing but bread and milk for supper the evening before; the next morning thirty centigrammes (five grains) of the sulphates of pelletierine and isopelletierine are administered in solution with fifty centigrammes (8 grains) of tannin (or half a bottle of Tauret's solution of the mixed pelletierines, the other half to be given in an hour); from 7.30 A.M. to 8 A.M. a full dose of a tablespoonful of the German tincture of jalap is given, or from an ounce to an ounce and a half of castor oil. A few hours after the ingestion of the medicine the patient experiences a slight vertigo, and the tapeworm is voided, as a rule, four hours after the dose is taken. In order to avoid breaking of the worm during its passage, and before the head is voided, it is advised that the patient shall sit at stool in a vessel nearly full of warm water. Bérenger-Férand has lately resorted to injections of a decoction of pomegranate bark to assist the expulsion of the worm, and claims that this is an improvement in the treatment.

It is needless to say that the above is now the favorite treatment of tænia in France, and Dujardin-Beaumetz affirms that "since we have established these rules of treatment, and wherever patients have scrupulously complied with them, we have had numerous successes, and in nine cases out of ten we obtain the worm with the head."

Bérenger-Férand finds in his last year's experience in the treatment of this painful malady gratifying confirmation of the results obtained in past years, and which have been alluded to in former numbers of this JOURNAL.

MEDICAL NOTES.

— A Kentucky paper says that the bill in that legislature that provides that no doctor shall practise in any township without first depositing $100 to be used for charitable purposes, should be so amended as to require the patient, whose disease baffles the skill of the local doctor, to pay a fine of $500 every time he goes to a city to consult a specialist, the money to be used in filling the depleted State Treasury.

— The French Hospital in London has received a gift of over $200,000 from the will of M. Anchois of Paris. He was wholly unknown to any person connected with the institute.

— At the Charleston Medical College of South Carolina a memorial cup has been presented to Prof. John Guitéras, on behalf of the students of the college, on the occasion of Dr. Guitéras leaving Charleston to assume his new duties as professor in the Medical College of Pennsylvania.

— Police Surgeon Andrews, of Philadelphia, has suggested that a surgeon be appointed to attend fires, so that surgical aid may be on the spot in case of accident. The Philadelphia *American* favors the plan and says: "The injury of firemen is not an uncommon occurrence, and they are entitled to the prompt aid which could not be rendered without the presence of a surgeon. The idea that the office should be a volunteer service in its inception is not commendable, but may have to be accepted of necessity if the thing is to be done immediately. If such services are worth anything, however, they are worth paying for, and if the plan is adopted — and it should be — councils should make an appropriation to pay for the service rendered."

— "Take a toothpick, a common sliver of whitewood, between the finger and thumb, and though you examine it with the greatest care you will not perceive that it has lethal qualities. Yet an autopsy upon a young New Yorker, who died suddenly the other day, revealed that death was due to toothpicks. Several of his organs presented the appearances of pincushions, except that wooden toothpicks took the place of pins. It must be evident to any one who gives the matter a moment's thought that none of a man's organs are designed by nature to be a cushion for toothpicks. Dr. Hammond we feel sure will sustain us in this view." — *Pittsburg Dispatch.*

— It is said that the late Dr. Bliss, of Washington, at one time treated General Sherman, who was suffering from some comparatively slight but troublesome disorder. The doctor had been treating him for some time, and had given him several different kinds of medicine, when one day, on making his regular call, the General said to him:

"Doctor, I don't seem to be getting any better for all your medicine."

"Well, general," replied the doctor, jocosely, "perhaps you had better take Shakespeare's advice, and 'throw physic to the dogs.'"

"I would, doctor," replied the sick man, as he turned his head on the pillow, "I would, but there are a number of valuable dogs in the neighborhood, and I don't want to kill 'em off!"

— At the recent centenary celebration of Georgetown University at Washington, Harvard University was represented by Dr. Thomas Dwight, upon whom was conferred the degree of LL.D.

— The American Association for the Cure of Inebriates has appointed a committee on "Nostrums, Proprietary Medicines, and New Remedies."

D. N. Roe Bradner, 514 So. 3rd Street, Philadelphia, is chairman of the committee, and will be glad to hear from any one who has knowledge of nostrums containing opium, alcohol, or other poison, or of evil effects resulting from their sale.

This association, of which Dr. Joseph Parrish, of Burlington, N. J., is now president, and Dr. T. D. Crothers, of Hartford, Conn., is secretary, was organized November 30, 1870; the late William Parker, M.D., being the first president.

— We repeat, with whatever of moral it may have for our readers, a story printed in the *Indian Medical Gazette*: — "A Mopla, named Sayed, who was fishing in a stream at the village of Tambracherry, on the Calicut Vyrthery road, caught a flat, eel-like fish, about fifteen or sixteen inches in length. He put it into his mouth to bite its head off in order to kill it, but the fish, being very slimy, slipped through his fingers into his mouth and went partly down his throat. Owing to the very sharp fins on the back it was impossible to withdraw the fish, and the poor man died in great agony within an hour. After death, even, the eel could not be removed, and the man was buried with the fish in his mouth."

— An example of the candor with which some papers approach the discussion of medical matters is seen in a screed by the *Chicago Journal*, in which the editor ridicules the statement of the secretary of a medical school of that city. It says: "Among other items of the Herculean labors of medical students the report states that yesterday's graduates had devoted one hundred and seventeen hours to personal surgical work, which, it is to be presumed, means the dissection of cadavers. In such number of hours there are somewhat less than five days, and the five-sevenths part of one week is scarcely time enough to qualify any young man, however brilliant, to become a practical surgeon, or to append to his name any degree which would truthfully indicate that he knew anything about surgery. A man takes more than a week to learn the proper methods of canvassing for the sale of a volume of poems, and surely he should require almost two weeks for anatomical study before becoming fully qualified as a surgeon."

The *Chicago Journal's* way of reckoning certainly presumes pretty steady application on the part of the student. One hundred and seventeen hours "is somewhat less than five days!" A bricklayer can work eight hours a day, but a student of practical anatomy is supposed to work at least twenty-four hours out of the day. We are far from arguing that too much time is usually spent at dissecting, but it would seem as if one hundred and seventeen hours, which with the collateral reading involved cannot mean more than ten or twelve hours per week of actual handling the scalpel, would give a bright man some slight idea of his subject, as much at least as the book pedler would get in a week of labor. It is, however, a pleasing sign to find the daily press recognizing the fact that hard study is a necessary preparation for skilful surgery.

BOSTON.

— Dr. Chas. D. Sawin, a practitioner of Charlestown and physician of the Massachusetts State Prison, has recently undergone an amputation of the left arm at the elbow on account of inflammatory disease secondary to a sprain of the wrist. The operation was performed at the Massachusetts General Hospital, and the patient is thus far doing well.

— Dr. William Read has presented the Boston Medical Library Association with his extremely valuable and rare collection of obstetric works. It comprises nearly four hundred volumes, and is thought to contain nearly everything of importance in French and English from the earliest times to 1861. In the collection is an exceedingly rare book said to be one of the earliest, if not the earliest, medical book printed in English. It is a square squat octavo bound in vellum, but notwithstanding its great age is in beautiful condition. The text is in black letter, and it has seventeen woodcut figures, many of which give the reader the impression that the uterus was considered by the writers of that day to be an exceedingly roomy place, as the children are seen apparently disporting themselves as in a gymnasium. It is entitled "The birthe of mankinde, otherwise the woman's booke, set forth in English by Thomas Raynalde, phisition. Imprinted at London by Richarde Watkins, 1598." It is a translation of E. Rhodion's "De partu hominis."

NEW YORK.

It is shown in the report of the State Board of Health that during the year 1888 104,450 deaths were reported in time for insertion in the bulletins. There were, in addition, sufficient delayed records to bring the mortality for the year up to 110,000. The death-rate for the State from all causes is placed at 19.64 per 1,000 of the population for the year.

A portion of the report is devoted to the effect of filth on the propagation of disease, as it is believed that in the effort to emphasize the factor of contagion this is too little regarded. While isolation and disinfection are to be carried out to the fullest extent, they are not sufficient for the protection of the community, and the board inculcates the doctrine that the appearance of an infectious disease should be at once the signal for rectifying all unsanitary conditions upon the infected premises and even those of a more public character, such as open drains, swampy, sewage-saturated places, imperfect drainage, and other conditions of a public sort which are not usually supposed to have so much bearing on the matter as the domiciliary conditions spoken of.

At the meeting of the Section on Public Health, Hygiene, and State Medicine of the New York Academy of Medicine held March 1st Dr. W. Edward Forest read a paper on "The Cost of Yellow Fever Epidemics — The Epidemic of 1888 at Decatur, Alabama." He did not regard the disease, although highly infectious, as a contagious one. In the course of the paper he stated that there were grave apprehensions that the opening up and settlement of southern Florida, now rapidly going on, would provide a permanent place of hibernation for the disease, since this region was below the frost line and would afford excellent winter quarters for the yellow-fever germs, from which they could be more easily and rapidly spread than from Cuba and the other West Indies, where the disease is more or less prevalent all the year round. He recommended that in case of the occurrence of an outbreak of the disease the infected districts should be depopulated as promptly as possible. But in order to do this it was necessary that the United States government should take the matter in control, and appropriate $1,000,000 for the suppression of yellow fever epidemics by the national Board of Health; establishing depots for the supply of tents, camp utensils, etc., at Charleston, Jacksonville, Mobile, New Orleans, and Memphis.

A woman having recently died from the effects of opium poisoning, it was shown at the inquest that she was in the habit of procuring sixty grains of morphia two or three times a week from a druggist on Ninth Avenue. At first this was obtained as the prescription of a Chicago physician, but afterwards no prescription was called for by the druggist, and this large quantity of the poison was constantly entrusted to a little girl, the sister of the deceased, who was sent to purchase it. The law which prohibits the sale of poisonous drugs without a prescription, and prohibits druggists from filling a prescription containing such drugs more than twice, seems to be practically a dead letter in the city; and the retail druggists claim that were it enforced there is nothing in it to prevent wholesale dealers from selling such drugs to any one calling for them.

Miscellany.

DISEASED MEAT AND MILK.

Dr. W. W. Keen presided over the meeting of the Philadelphia County Medical Society, February 13th. Dr. George Strawbridge offered the following resolutions in regard to meat and milk inspection: —

"The Philadelphia County Medical Society beg to call the earnest attention of city councils and the legislature of Pennsylvania to the pressing need of provision for the inspection of all meat and milk used as food, with a view of furnishing sound meat and milk to the people.

"The society would also urge the necessity of killing and destroying all animals afflicted with tuberculosis, and the owner should be indemnified by the State.

"That a committee of five be appointed by the president of the society, whose duty it shall be to represent the society with a view of obtaining further information, and to confer with other bodies acting in this matter."

Dr. Strawbridge, in introducing his resolutions, said: —

"Statistics, as reliable as can be obtained, make the statement not too broad that in Philadelphia, about the present time, there is 3 to 3½% of tuberculosed meat used, and 6 to 8% of tuberculosed milk.

"Here in Philadelphia to-day there is no inspection of any kind. The best the board of health could do was to obtain an appropriation of $1500 for the appointment of a milk inspector, who will probably start to the stations to see how much water goes into the milk. Anybody can dump any kind of food in Philadelphia, and we must take it, but if we refuse to eat it we are told we are not good citizens.

"Meat ought to be inspected when alive, and also during the process of slaughtering. Unless you can inspect the animal alive, and also when the internal parts can be viewed, the inspection is useless. In the inspection of milk the principal thing is to see the cows that give it, so that they are not diseased, and to inspect it at its place of delivery."

The resolutions were approved, and the chairman appointed Dr. Leffman, Dr. Huidekoper, Dr. Shakespeare, Dr. Osler, and Dr. Cleeman, as the committee.

THE WEST END NURSERY AND INFANTS' HOSPITAL, BOSTON.

The sixth annual report of this excellent charity is published, and shows that the number of children cared for in the nursery and hospital during the year ending November 30, 1888, was one hundred and nineteen.

The hospital as usual was closed during the three summer months, though fifteen babies were cared for in our outside nurseries.

This institution is devoted to the treatment of the diseases of infancy, and to the aiding of mothers in the care of their infants; and differs from any other hospital or asylum or nursery in the city in the following particulars: —

1. Admissions to the hospital department are limited to children under two years of age; with the mother, if the conditions render it necessary. It is the *only* hospital which admits children under two years suffering from *any* contagious diseases (whether curable or incurable), and the only hospital which is especially devoted to the care of such children.

2. The nursery department, which must be distinguished from a day nursery, helps mothers desirous of securing constant care for their own children (if the mother is out at service for instance), but does not relieve her of the responsibility of her child. It simply affords such children the best possible temporary care, and meanwhile encourages constant intercourse between mother and child.

3. The institution offers a temporary shelter to infants deprived for the time being of their natural guardians, as during the stay of a mother in a hospital or institution.

The nursery department supports a number of small branch nurseries in the suburbs, which are visited by, and under the direct supervision of, the matron and superintendent. In these homes many infants, whose mothers are obliged to work for their support, find shelter and loving care.

RELATIVE AGE IN PROCREATION.

At a recent meeting of the Hungarian Academy of Sciences, Prof. Korosi read a paper on the influence of parents' ages on the vitality of children, which we find referred to in the *Medical Press.* The point is one which has hitherto received but scant attention at the hands of ethnological statisticians, but M. Korosi has collected some 30,000 data, from which he deduces the following conclusions: — Mothers under the age of twenty, and fathers under twenty-four, procreate children endowed with a less aggregate vitality than the offspring of parents of maturer ages. These children are particularly liable to lung diseases. The healthiest children are those whose fathers are from twenty-five to forty years of age, and whose mothers are between twenty and thirty. He affirms that the best results are obtained from the union of a man senior to the wife, but a woman between thirty and thirty-five will fare best with a somewhat younger husband. The wife of a man between thirty and forty should not exceed thirty years of age, and whenever the mother's age exceeds that of the father by more than five years the health and vitality of the offspring are likely to suffer.

Correspondence.

A STANDARD PAGE FOR REPRINTS, ETC.

Mr. Editor, —

"Scire est nescire, nisi id me scire, alius sciret." That is to say: To know is not to know unless another knows what I know. Of what use is a man's knowledge if he does not impart it to some one else, if he does not advertise it, in fact, using the word advertise in its truest and broadest sense, "publication of information." At any rate this is proved by the multiplicity of journals and pamphlets or more pretentious books, all of which are, of course, the result of a desire on the part of some one to inform, if not to reform, the world. Since glory is often the only return to the author, he cannot be subjected to the criticism of egotism or of a grasping desire for sordid gain. Whatever his purpose, the fulfilment of it is subjected to queer ways. All printed matter, it is fair to say, is of some value for present or future reference; no production is so poor in facts or so meagre in fancy that it may not be of some practical use or suggest some pleasant and instructive thought. Some people seem to have the same veneration for a piece of printed paper that they say the Chinese have, who will not destroy the smallest scrap of paper which has been used for writing or printing, but carefully preserve it as if it were scrip, current in the market of wisdom, or a passport on the road to knowledge.

But the one who preserves this variety of material is greatly annoyed and perplexed by a difference in size and shape of that which he treasures.

Variety may be the spice of life, but too much spice will spoil the pudding. In the paper world variety seems to have run wild in attempting to ring the changes on size. Whereas in the beginning we had standard sizes, now we have every conceivable size, from a blanket sheet down to a postage stamp. To further complicate the matter, the sheet is folded or cut in every conceivable way, long and narrow, or square and in triangles and circles, or more complicated "shapes." The purpose of all this variation is to attract attention by novelty, but a more important purpose is lost sight of or sacrificed to this less important one. A circular or catalogue of standard goods contains, as a rule, much matter of value as reference, and the recipient desires to keep it for future use.

The question immediately arises, "What can we do with it?"

The writer has a room full of reprints, catalogues, bulletins, and the like, and has tried every way imaginable for preserving them in order. Such as match in size can be bound together, others varying in size are put into numbered boxes. Others lie around promiscuously until some one tired of seeing and moving them about puts them into the basket. Circulars are supposed to be folded to postal card size, endorsed and filed in a card index, together with cards containing references to the reprints, etc., but with the best system it is difficult to arrange the mass of material in a satisfactory manner, so as to be easy of access; and therefore much of it is lost.

The remedy for this existing evil is, uniformity in size of pages, a remedy easily applied, if those who issue the printed matter will co-operate in its application and those who receive the matter will demand this. I suggested some years ago that a uniform size of page be adopted by mutual consent as a standard. The most convenient size would be 24 by 36 inches, making a folio of 18 by 24 inches, a quarto of 12 by 18 inches, an octavo of 9 by 12 inches, a 16mo of 6 by 9 inches, a 32mo of 4½ by 6 inches, and a 64mo of 3 by 4½ inches. Of these, the 64mo or pocket size, the 16mo, and the 8vo would be the most useful. There is nothing that could not be well represented in one of these sizes. The value of a catalogue with standard pages would be 100% greater than one a little off size, as the former could and would be preserved for future reference, while the latter would be thrown away, even if it contained valuable matter, as it would be a nuisance and a clutter-monger; even if preserved it would be amongst such a heap of good, bad, and indifferent, and its position would be so uncertain, that few would waste the time and the patience to hunt it up, provided it was not forgotten. Out of sight, out of mind; one might as well be without a thing altogether as to not know where it is or be unable to find it. Important as this question of uniformity is in the mercantile world, it is of still more importance in the scientific world. Monographs, reprints, and the like have a historic value aside from their present intrinsic worth, and any point in their make-up tending to further the possibility of their preservation, in a form suitable for reference, is worthy of careful consideration and adoption.

Other points, favoring preservation of printed matter, are good paper, type, ink, and press work; and intelligible description free from bombastic or ambiguous terms. A few positive statements of facts are much better than a mass of superlatives which contradict facts on their face. Our language is in need of a new degree of comparison, for superlatives have done so much duty as positives, that we have no means of expressing the highest degree. Illustrative cuts are of great value, but they should be *drawn to scale*, and every description of apparatus should bear the date and give its price.

The benefits of a standard page are self-evident to any one who will thoughtfully consider the question. Would it not be well to discuss the matter and take action at some of the numerous "society" meetings. Yours truly,

Charles Everett Warren.

Boston, Feb. 27, 1889.

REPORTED MORTALITY FOR THE WEEK ENDING FEBRUARY 23, 1889.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Typhoid Fever.	Diph. and Croup.	Scarlet Fever.
New York	1,526,081	870	368	22.08	19.20	.48	8.64	6.96
Philadelphia	1,016,758	347	103	13.16	13.44	5.04	4.76	3.08
Brooklyn	751,432	341	148	18.27	19.14	—	6.94	3.48
Chicago	760,000	246	126	20.70	25.20	.90	11.90	2.25
St. Louis	449,160	161	75	17.36	16.74	.62	8.68	1.24
Baltimore	437,155	178	53	6.16	10.08	1.12	2.24	—
Boston	407,024	195	59	10.71	16.32	2.04	6.63	—
Cincinnati	225,000	—	—	—	—	—	—	—
New Orleans	248,000	109	27	5.52	15.64	—	1.84	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	102	38	16.66	25.48	3.92	3.92	.98
Pittsburg	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	15	5	6.66	33.33	—	—	—
Charleston	60,145	30	11	—	6.66	—	—	—
Portland	40,000	14	1	7.14	21.42	7.14	—	—
Worcester	76,328	32	10	3.13	40.69	—	3.13	—
Lowell	69,530	25	12	20.00	12.00	—	8.20	—
Cambridge	64,079	23	6	25.10	25.10	—	13.05	—
Fall River	61,203	26	9	7.70	15.40	3.85	3.85	—
Lynn	51,467	23	—	4.35	13.05	—	4.35	—
Lawrence	40,175	15	2	13.33	—	6.66	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36.298	15	5	33.33	6.66	—	20.00	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	16	2	12.50	6.25	—	6.25	—
Chelsea	27,552	11	—	9.09	27.27	—	—	—
Haverhill	24.979	7	1	—	14.28	—	—	—
Taunton	24,796		—	—	—	—	—	—
Brockton	24,784	4	2	25.00	—	—	25.00	—
Gloucester	23,187	5	2	—	—	—	—	—
Newton	21,105	11	1	27.27	9.09	18.18	9.09	—
Malden	18,932	10	4	10.00	10.00	10.00	—	—
Fitchburg	17,534	3	1	—	—	—	—	—
Waltham	16,651	7	2	—	28.56	—	14.28	—
Newburyport	13,839	10	3	14.28	—	10.00	—	—
Northampton	13,419	—	—	10.00	—	—	—	—
Quincy	13.728	1	—	—	—	—	—	—

Deaths reported 2852; under five years of age 1076; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 460, acute lung diseases 499, consumption 371, diphtheria and croup 192, scarlet fever 89, typhoid fever 41, diarrhœal diseases 38, measles 32, whooping-cough 38, cerebro-spinal meningitis 11, erysipelaa 11, malarial fever 7, puerperal fever 1. From diarrhœal diseases, New York 16, Brooklyn, Chicago, aad Lowell 3 each, Boston, New Orleans, and Washington 2 each, St. Louis, Baltimore, Nashville, Lawrence, Salem, and Quincy 1 each. From whooping-cough, New York 15, Brooklyn 10, St. Louis and Washington 3 each, Chicago and Baltimore 2 each, Cambridge, New Bedford, and Chelsea 1 each. From measles, New York 12, Brooklyn 9, Chicago and St. Louis 4 each, Philadelphia, Boston, and Charleston 1 each. From cerebro-spinal meningitis, New York 3, Chicago, St. Louis, and Washington 2 each, Baltimore and Cambridge 1 each. From erysipelas, New York and Chicago 2 each, Brooklyn, St. Louis, Baltimore, New Orleana, Washington, Cambridge, and New Bedford 1 each. From malarial fever, Brooklyn 4, New York 2, New Orleans 1. From puerperal fever, Boston 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 23, 1889, TO MARCH 1, 1889.

By direction of the Secretary of War, leave of absence for two weeks is granted Lieutenant-Colonel JAMES C. MCKEE, surgeon U. S. army. Par. 13, S. O. 44, A. G. O., Washington, February 24, 1889.

GREENLEAF, Major CHARLES R., surgeon, will proceed from this city as early as practicable to Newport Barracks, Kentucky, to examine and report upon a proposed change in the location of the post hospital at the new barracks now in process of construction near that post; thence to Columbus Barracks, Ohio, to examine and report upon the necessity for an addition to the hospital at that post. Par. 16, S. O. 43, A. G. O., Washington, February 20, 1889.

Leave of absence for twenty-one days is granted Captain CHARLES B. BYRNE, assistant surgeon. S. O. 44, Hdqrs. Div. of the Atlantic, Governor's Island, N. Y. City, February 21, 1889.

By direction of the Secretary of War, Captain WILLIAM O. OWEN, Jr., assistant surgeon, is relieved from duty at Fort Leavenworth, Kansas, and will report in person to the commanding officer, Fort Gibson, Indian Territory, for duty at that post, relieving Captain C. N. B. MACAULEY, assistant surgeon, who, on being so relieved, will report in person to the commanding officer Fort Leavenworth, Kansas, for duty at that post. Par. 3, S. O. No. 48, A. G. O., February 27, 1889.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology, and Hygiene will meet at 19 Boylston Place on Wednesday, March 13th, at 7.45 o'clock. Papers: Dr. G. Liebmann, "Some rarer forms of Motor Neurosis of the Stomach." Dr. John A. Jeffries will exhibit a rare form of Hemiplegia. Dr. V. Y. Bowditch, "Two cases of Intrapulmonary Injection for Phthisis." Baron Nils Posse, M.G., "The Therapeutic Application of Medical Gymnastics." Dr. E. W. Cushing will demonstrate Two interesting Pathological Specimens.

ALBERT N. BLODGETT, *Secretary*.

A. L. MASON, M.D., *Chairman*.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the society will be held on Monday, March 11th, at the Medical Library, at 7.45 P.M. Dr. Hamilton Osgood, "A Peculiar Form of Œsophagismus." Dr. M. H. Richardson, "A Case of Cholecystotomy for the Removal of Gall-stone." Dr. Morton Prince, "A Case of Pseudo-Hypertrophic Muscular Paralysis, with Microscopic Specimens.

F. B. HARRINGTON, M.D., *Secretary*.

GYNÆCOLOGICAL SOCIETY OF BOSTON. — The next regular meeting will be held at No. 19 Boylston Place, on Thursday, March 14, 1889, at 4 P.M. Paper: "Faradism in the Practice of Gynæcology," By Augustus P. Clarke, M.D., of Cambridge.

S. N. NELSON, *Secretary*.

OBITUARY. — JAMES W. RANNEY, M.D.

Dr. James W. Ranney died at his home in New York, February 28th, from Bright's disease, after being confined to his bed since Sunday. Dr. Ranney comes from a family of physicians, being one of thirteen children, seven of the nine sons having been practising physicians, and his father, Waitstill R. Ranney, who was once Governor of Vermont, was also a physician. Only three of the brothers are now living, ex-Congressman A. A. Ranney, of Boston; Martin L., a physician in New York; and Stephen E., a physician at Bennington, Vt. James W. Ranney was born at Townsend, Vt., on September 23, 1824. He entered the college at Middlebury, was graduated there, and subsequently was graduated at the New York Medical College. He then began practising at Bennington, Vt., but in a short time he came to New York, and was successful from the beginning of his career. He was elected coroner in 1860. He had been a Commissioner of Lunacy for over fifteen years previous to his death. For over twenty years he has been connected with twelve railroad companies as surgeon and attending physician.

He started in life with nothing, and had amassed a large property. He did some lecturing, and wrote a few short medical articles, but has always been so busy that he found little time for literary pursuits.

DEATH.

Died at Bermuda, February 25, 1889, FREDERICK WINSOR, M.D., M.M.S.S., of Winchester, aged fifty-nine years.

BOOKS AND PAMPHLETS RECEIVED.

Constitutional Causes of Throat Affections. By S. W. Langmaid, M.D., Boston. Reprint. 1887.

Successful removal of a Pin from the Larynx two years after it had been swallowed. By S. W. Langmaid, M.D., Boston. Reprint. 1887.

City of Boston. Thirtieth Annual Report of the Inspector of Milk and Vinegar, from January 1, 1888, to December 31, 1888. Document 15, 1889.

Message of Gov. Robert L. Taylor to the Forty-sixth General Assembly of the State of Tennessee. Thursday, January 10, 1889. Nashville, Tenn. 1889.

Transactions of the American Surgical Association. Vol. vi., edited by J. Ewing Mears, M.D., Recorder of the Association. Philadelphia: Printed for the Association, and for sale by P. Blakiston, Son & Co. 1888.

Twenty-Ninth Annual Report of the Medical Superintendent of the State Asylum for Insane Criminals, Auburn, N. Y., for the year ending September 30, 1888. Auburn, N. Y. 1889.

Second Annual Report of the Ophthalmological Department of the State Hospital at Norristown, Pa., for the year 1887. Ophthalmologist: Charles A. Oliver, M.D. Reprint. 1887.

Note on Rumbold's Method of Treatment of Catarrhal Inflammations of the Upper Air Passages. By Ely McClellan, M.D., surgeon United States Army. Reprint. Chicago: 1889.

Annual Announcement of Systematic Courses in diseases of the Eye, Ear, Throat and Nose. By the Attending Surgeons of the Illinois Charitable Eye and Ear Infirmary. Chicago, Ill.

Mittheilung über die künstliche Steigerung des Knochenwachsthums beim Menschen. Von Prof. Dr. Max Schüller, Docent der Chirurgie an der Königlichen Universität zu Berlin. Reprint.

On Corpulence, especially its treatment by a Pure Milk Diet. By George H. Rohé, M.D., of Baltimore, Md., Professor of Dermatology and Hygiene in the College of Physicians and Surgeons, Baltimore. Reprint.

Illinois State Board of Health. Report on Medical Education, Medical Colleges, and the Regulation of the Practice of Medicine in the United States and Canada, 1765-1889. By John H. Rauch, M.D., Secretary. Springfield, Ill. 1889.

The International Language Series. Dictionary of Volapük. Volapük-English, English-Volapük. By M. W. Wood, M.D., Captain and Assistant Surgeon U. S. A. New York: Charles E. Sprague; London: Trübner & Co. 1889.

Congestive Neurasthenia or Insomnia and Nerve Depression. By E. G. Whittle, M.D. London, F.R.C.S. Eng., Senior Surgeon to the Royal Alexandra Hospital for Sick Children, Brighton. London: H. K. Lewis, 136 Gower St., W.C. 1889.

Diseases of the Skin associated with Disorders of the Female Sexual Organs. By George H. Rohé, M.D., Baltimore, Md., Professor of Dermatology and Hygiene in the College of Physicians and Surgeons, etc., etc. Reprint. 1889.

The Mode of Action and Value of Antipyrine in Typhoid Fever. By N. S. Davis, Jr., A.M., M.D., Professor of Principles and Practice of Medicine, Chicago Medical College; Physician to Mercy Hospital, etc. Reprint. New York. 1889.

Apostoli and his work. By Horatio R. Bigelow, M.D., Permanent Member of the American Medical Association; Life Fellow of the British Gynæcological Association; Member of the Anthropological and Biological Societies of Washington, D. C., etc., etc. Reprint.

On the Relation Between the General Practitioner and the Consultant or Specialist. By L. Duncan Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital, etc. Read before the American Academy of Medicine, November 13, 1888. Reprint. Chicago. 1889.

A Defence of Electrolysis in Urethral Strictures, with Documentary Evidence. By Robert Newman, M.D., New York, Surgeon to Northwestern Dispensary, N. Y.; Consulting Surgeon, Hackensack Hospital; Honorary Member Ulster County Medical Society, etc. Reprint. Philadelphia. 1888.

Poisoning by Chrome Yellow used as a Cake Dye. The subsequent Clinical History of the Cases, including a Case of Paralysis Agitans and of Chronic Endocarditis. By David Denison Stewart, M.D., Chief of the Medical Clinic of the Jefferson Medical College; Physician to St. Christopher's Hospital for Children. Reprint. 1889.

Transactions of the American Dermatological Association at its Twelfth Annual Meeting, held at Willard's Hotel, Washington, D. C., on the 18th, 19th, and 20th of September, 1888, in connection with the first meeting of the Congress of American Physicians and Surgeons. Official Report of the Proceedings by the Secretary, G. H. Tilden, M.D. Boston. 1888.

The Operations of Surgery. A Systematic Handbook for Practitioners, Students, and Hospital Surgeons. By W. H. A. Jacobson, M.B., F.R.C.S., Assistant Surgeon to, and Teacher of Operative Surgery in, Guy's Hospital, Surgeon to the Royal Hospital for Children and Women, London. With 199 illustrations. Philadelphia. P. Blakiston, Son & Co.

The Physician as Naturalist. Addresses and Memoirs bearing on the History and Progress of Medicine chiefly during the last one Hundred Years. By W. T. Gairdner, M.D., LL.D., Professor of Medicine in the University of Glasgow, President of the British Medical Association, Physician-in-ordinary to H. M. The Queen in Scotland. Glasgow: James Maclehose & Sons, Publishers to the University. 1889.

Climate and Malaria. A Paper read before the Section of "Medical Climatology and Demography" of the Ninth International Medical Congress, held in Washington, D. C., September, 1887. By Joseph Parrish, M.D., of Burlington, N. J., Permanent Member of American Medical Association; Late President, Fellow, and Honorary Member of the Medical Society of New Jersey; President of the American Association for the Cure of Inebriates; Associate Member of the Society for the Study of Inebriety in Great Britain; Vice-President of International and Colonial Congress on Inebriety, London, September, 1887; Associate Member of Medico Legal Society of New York; Fellow of the College of Physicians of Philadelphia (N. R.); etc., etc.

Original Articles.

ON CHRONIC ARSENIC POISONING, ESPECIALLY FROM WALL-PAPER,

BASED ON THE ANALYSES OF TWENTY-FIVE CASES IN WHICH ARSENIC WAS FOUND IN THE URINE.[1]

BY JAMES J. PUTNAM, M.D.

The remainder of the twenty-five unpublished cases in which arsenic was found in the urine are in outline as follows: —

Case 1 was reported to me by Drs. A. Worcester, and E. C. Cutler, of Waltham, the analyses being made by Prof. Hill, of Cambridge. The patient was a woman, thirty years of age, whose health had previously been good. The symptoms were briefly as follows: indigestion of several years' standing; debility, especially for a few weeks each spring and fall, after house-cleaning; in March, 1887, tonsillitis for two months following; coated tongue, salivation, with swelling of the sublingual and submaxillary glands, increased by mastication; nausea; loss of flesh, but no headache or diarrhœa. Arsenic poisoning was suspected, mainly on account of the salivation, and the patient was sent away from home for a few days, during which the gastric symptoms, salivation and swelling of the glands, became worse. The urine was examined and 0.02 mg. to the litre found. The wall-papers were also examined with the following result: —

Sitting-room	trace.	
Bedroom	0.002	milligrammes to square meter.
Hall	0.027	" "
Spare room	0.420	" "
Curtains	trace.	

The spare-room was almost constantly kept open though rarely used. The patient remembered having felt worse at one time after sleeping there for a few weeks, and that room had always been included in the house-cleaning. The case finally ended in recovery, but not until the patient had made a prolonged stay away from home, and all the articles *containing even a trace of arsenic* had been removed. The salivary symptoms remained troublesome the longest.

Case 2. Husband of the above. His symptoms also consisted in salivation, with swelling of the glands, and he eventually recovered.

This is one of those interesting pairs of cases sometimes met with where a similar exposure give rise to similar symptoms, the diagnostic value of which is thereby materially increased. They are also interesting on account of the prominence of the salivary symptoms, and because in the first case the symptoms continued to grow worse for a time after removal from exposure, and because a susceptibility to even traces of arsenic seemed to be gradually established.

Nos. 3 and 4 are two interesting cases, also of husband and wife, reported by Dr. S. W. Torrey, of Beverly, the analyses being made by Prof. Wood. Here again both patients presented essentially similar symptoms. In the case of the wife these symptoms consisted in long-continued muscular pains, especially in the shoulders and arms, of increasing severity, together with insomnia, prostration, and with some impairment of the digestion, but without diarrhœa, or disease of the superficial mucous membranes. In the case of the husband, prostration, insomnia, and indigestion were also present, and the tongue showed the silvery coat so often alluded to by other observers. Arsenic was found in quite a number of fabrics and papers, mostly in small amounts, but in a dress and in the frieze of the sitting-room in a large amount.

After removal of the papers and fabrics (except one carpet), and a vacation in the woods, the patient improved, but on his return relapsed and was attacked, in addition to the other symptoms, with acute catarrh of the pharynx and middle ears. Here, also, a susceptibility to arsenic seemed to have been established, which, possibly, was greater from the fact that the patient had previously been poisoned.

Cases 5 and 6 were reported by Dr. Francis, of Brookline, the analyses being made, as in the last cases, by Dr. Wood. Neither case presented unequivocal signs, one of them being that of an infant, previously healthy, who refused food without apparent cause; and the other that of a young lady, who became extremely anæmic, and suffered from repeated attacks of diarrhœa, all symptoms disappearing promptly on removal from exposure, and taking tonic treatment.

Cases 6 and 7 were again husband and wife, and were reported to me by Dr. Comey, who made the analyses, and was in position to know all the facts with accuracy. One of the cases in particular, that of the husband, a gentleman of fifty, and of naturally good health, was remarkably interesting.

The symptoms included temporary impairment of memory, and mental vigor, albuminuria with casts and blood, and a prolonged painful affection of one foot, attended with excessive local coldness and pallor, and a sense of numbness, for which no cause could be found, but which improved under massage, and like the other symptoms, eventually passed away after removal of the patient from exposure to the arsenical paper. Not having seen the case myself, I do not feel at liberty confidently to refer this curious symptom to the source of the arsenic, but it is probable that, so far as the unsymmetrical position of the lesion is concerned, arsenic might have been the cause, or partial cause.

Dr. Comey's case is also important from the fact that arsenic continued to be eliminated in the urine, though in diminishing quantity, for nearly seven months after removal of the papers, while at the same time the steady decrease, and eventual complete disappearance, of the symptoms gave good grounds for thinking that the real source had been found. The objectionable papers, which were two in number, and were superposed one over the other, were, most of the time, covered in with a third, which was free from arsenic. The innermost paper contained fifteen grains per square meter. Cases where poisoning has apparently occurred under these circumstances have repeatedly been reported, and strongly support the view that the arsenic sometimes makes its way into the room in a volatile form. The most recent experiments of Hamberg, who has long investigated this question, would seem to show that this vapor is not arsenuretted hydrogen to any great extent, while the investigations of Selmi, and others, referred to by Stevenson, of Guy's Hospital, in the *British Medical Journal* for 1888, page 1220. suggest that the dangerous compound may be one of the extremely poisonous "arsines" which are formed in the presence of decaying organic matter.

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[1] Concluded from page 237.

Cases 8 and 9 were contributed by Mr. W. S. Robinson, assistant in the chemical department at Cambridge, who made the analyses, as well as by Dr. E. C. Leach, in whose family they occurred, and by Dr. Knapp, who examined one of the patients. Characteristic symptoms were present in only one of the cases, that of a child, who presented ataxia, now a recognized symptom of neuritis. This affected especially the right side, and was associated with numbness, prickling of all four extremities, and also extreme nervous irritability. The other case, that of the mother, was also interesting because of a long-continued pain in the eyes not attended by any material amount of inflammation. The patient was for a time under the care of Dr. Hasket Derby for this symptom, and I should judge that he considered it of the nature of simple asthenopia. This view is perhaps strengthened by the fact that it recurred several times while the patient was away from home, though the tendency to it eventually passed nearly away. On the other hand, this also was one of the cases in which arsenic continued to be found in the urine, for many months after the suspected papers had been removed, either because elimination was delayed, or because all the sources of poisoning were not found. The amount of arsenic found in the worst paper was twenty grains per square yard, but this paper was covered by another which was free from arsenic. A recurrence or outbreak of symptoms after removal from exposure is not an uncommon event in the history of arsenical poisoning from whatever source. The characteristic paralyses, for example, sometimes appear days, weeks, and even months after a single large dose, or a number of smaller doses, have been taken.

Cases 10 to 15 were contributed by Dr. Driver, of Cambridge, and Prof. Sanger.

Nos. 10 and 11 were two typical examples of the more usual form of poisoning, the symptoms consisting in impaired health for two years, then marked irritation of the eyes and throat, diarrhœa, and insomnia, all ending eventually in recovery. It is interesting that the urine of one of the patients, who stayed at home most of the time, contained twice as much arsenic as that of the other, her sister, who spent half of her time away, at work, the exposure being otherwise the same. The amounts were, respectively, 0.068, and 0.028 per litre.

Case 12 was interesting from the fact that here, also, there were periodic attacks of gastralgia, occurring, this time, at night, but in addition, occasional outbreaks of colic and diarrhœa. Insomnia and debility were also present. There were no other especially characteristic symptoms. The urine contained 0.01 mg. per litre.

In Case 13 arsenic was twice found in the urine, but it was difficult to say what symptoms, if any, were to be attributed to its influence. The case was one of severe and painful inflammation in the abdominal cavity, with constipation and loss of strength. It is, however, interesting to note that the only wall-paper was in the parlor. The family sat here a good deal, and it was so placed that the warm air, rising from this part of the house, could circulate freely through the chambers, which were not themselves papered. The parlor paper contained nine grains of arsenic to the square yard. The amount in the urine was, at the first analysis, 0.016; at the second, just one month later, 0.002 per litre.

Case 14, the patient being a lady of fifty-eight, showed, besides the more common symptoms of impaired nutrition and digestion, numbness of the hands at times, and weakness in walking. In the presence of these symptoms it is fair to suspect that a searching physical examination of the muscles, and of the sensibility of the skin, might have justified a diagnosis of neuritis. Without that, the numbness of the hands at least can only be counted as a corroborative symptom. The source of the arsenic was not traced out, but the patient improved on leaving home, and relapsed on her return. The amount of arsenic in the urine was 0.005 per litre.

In Case 15 the patient suffered from "epileptic vertigo," which was not, however, attributed to the arsenic. She had also obscure digestive and nervous symptoms. The suspected paper was not removed, and the patient did not recover. The amount found in the urine was 0.005 per litre.

In Case 16 a variety of serious symptoms were present referable to the nervous system and general nutrition, but Bright's disease was present, and for this reason it would not have been thought worth while to report this case, but that it is a question to be investigated whether arsenic may not occasionally set up a chronic nephritis. The quantity found in the urine was also relatively large, 0.055 per litre. The source of the arsenic was not discovered.

Case 17 was that of a school teacher, thirty-six years old, and in a rather nervous and debilitated state through her work, without, at first, any distinctly characteristic signs of arsenic poisoning. During the summer months immediately following this period she spent more of her time out of doors, and also changed her room, and seemed on the high road to recovery. In Oct. she returned to her former room, and immediately her old symptoms came back, and she was obliged to keep her bed, suffering from ringing in the ears, sleeplessness, attacks of colic at night followed by diarrhœa, bad taste in the mouth, flatulent dyspepsia, irritation of the eyes and throat, and numbness of the hands. On account of the character of the symptoms, and because they became worse after the house was closed for a time, and the furnace lighted, arsenic was suspected and sought for. The paper in the room was found to contain only a trace, but a frieze twenty inches wide, and extending through three stories, gave fifteen grains to the square yard, and it was observed that the hallway formed a sort of shaft through which the heated air was conducted to the patient's bedroom, which was protected only by a portière, with an open space at the top. Furthermore, a small trunk-room, the door of which opened next to hers, and which was used, with its windows open, to ventilate her room, had an old paper, with border and figures of paris green. The urine contained 0.018 mg. of arsenic to the litre. The paper has been removed, and the patient's gastric symptoms and sleeplessness are much relieved, though she is still under treatment.

Cases 18 and 19 were communicated by Dr. T. M. Rotch, and are of interest from the fact that one of the patients, a child's nurse forty years of age was found to be suffering from a parenchymatous nephritis of very subacute character, at the same time that the other patient, the child himself, showed the general and mucous membrane symptoms of arsenical poisoning, both illnesses being traceable, in all appearance, to a certain paper. The child was, later, attacked with scarlet fever, and was isolated with his nurse in another room. The fever ran its usual course, without complications, and the nurse rapidly recovered. The urine of both was found by Dr. Hills to contain arsenic before the removal, and none afterward.

Cases 20 to 24 were contributed by Dr. Nichols, of Cambridge, the analyses having been made by Prof. Hill. In the first case, that of a girl ten years of age, there were, besides sore throat, cough, and general debility with anæmia, frequent attacks of feverishness, — a symptom spoken of in the early part of this paper, as of occasional occurrence and somewhat characteristic. The patient improved during an absence, relapsed on returning home, and eventually recovered. In the second case, that of a boy four years old, the symptoms were not especially characteristic. The third case, or, rather, group of cases, was that of a mother and two children, five and four years old respectively. The symptoms were general in character, consisting in debility, indigestion, sore throat, cough, broken sleep. "Several of the wall-papers were moderately arsenical. In the girl's bedroom was a plain blue border about six inches wide, which contained nine grains of arsenic to the square yard."

There was marked improvement in the condition of the family after removal of the papers.

In the fourth set of cases, also a whole family, the mother and two or more children, were involved. The symptoms concerned the digestion and mucous membranes of the eyes and throat; and, in addition the mother suffered from palpitation and irregular action of the heart. Several papers were moderately arsenical, and that of the dining room contained more than ten grains to the square yard. Improvement began, in every case, on the removal of the papers.

The facts of interest brought forward by these cases have for the most part been noted in passing.

The analysis of the papers and urine were suggested as a rule either by prudence or remembrance of former experiences, or by the concurrence or unusual course of symptoms otherwise familiar; in a few cases by characteristic individual symptoms, the nature of the urinary sediment, profuse salivation with glandular inflammation, neuritis, attacks of feverishness, but in some of the cases the conspicuous absence of characteristic signs suggests that a routine examination might bring some interesting facts to light as to the frequency with which arsenic is absorbed under these conditions. In many cases, no doubt, it does no harm; in others it may only increase the general liability to disease.

None of the reporters speak of the discoloration of the skin, nor of painful micturition, or distinctly periodic symptoms, except that nightly attacks of gastralgia were noted in Case 12, but possibly these symptoms were not sufficiently sought for. Notwithstanding the diagnostic value of a urine-analysis in suspected cases, it is not to be forgotten that a failure to find arsenic in this way is not a positive proof that it is not present in the body, since, as Taylor and others have shown, arsenic may be excreted only intermittently by the kidneys, and even in acute fatal cases the urine has been found to be free. Kirchgasser (*loc. cit.*) reports a case where, after a failure to find arsenic in the urine at the end of six weeks after cessation of the exposure, he waited two weeks more, and then collected ten pounds of fæces, and in this way obtained abundant evidence that arsenic was still being given off.

Potassic iodide is supposed to favor the excretion of arsenic by the kidneys, but if this is true it would seem that it must be by increasing the secretion only, for it is difficult to see on what other principle the drug should act, and perhaps for this purpose other drugs would answer as well or better. One other observation of Kirchgasser's is worthy of note as concerning the differential diagnosis, namely, that he has seen an increase, instead of a falling off, of fat and weight, as a result of exposure to arsenical wall-papers, in the interval between two outbreaks of symptoms. This result is well known to attend the use of arsenic in large but non-poisonous doses.

With regard to the electrical examinations of suspected cases, I would only say that the electrical reactions of neuritis are reported as usually diminished to both currents, but sometimes normal, and sometimes even exaggerated. Of these changes, the exaggeration is probably temporary, though characteristic when present. The diminution to both currents is more common, but might easily escape attention unless carefully sought for, and it may precede any apparent loss of strength. With regard to the alleged finding of truly normal reactions in cases of neuritis where there is diminished motor power, I feel rather sceptical, and doubt whether the examination was made with sufficient care. The reactions in affections attended by even such slight disorders of the nutrition as cases of the so-called writer's cramp present, are rarely normal, though they would no doubt be called so, if close study had not shown that slight changes in one direction or the other can almost invariably be detected.

It will be interesting to investigate briefly, among these twenty-two cases where arsenic was found in the urine, for any facts of special interest as to the source from which it was derived.

In three cases the whole or main source was apparently an arsenical paper covered in by another free from arsenic. This condition of affairs has now been reported too often to be attributed to coincidence.

Kirchgasser found it in several of his cases where arsenic was present in the urine.

A layer of varnish, paper, or paint gives temporary, though perhaps only relative, protection; but cracks, erosion, and dampness soon seem to make this inadequate, especially, no doubt, if the quantity in the underlying paper is large, as in Dr. Comey's case, where it amounted to fifteen grains per square yard.

Arsenical friezes seem to have been dangerous neighbors in two cases. In more than half the cases the arsenical paper was wholly or mainly in bedrooms. In two cases the worst paper was not that of the bedroom, and in one it was in a spare room but little used by the family, though its door was open and it was included in the spring cleaning, at which time there was exacerbation of symptoms. In Dr. Torrey's case not only the papers, but a dress and a number of fabrics, were found to contain arsenic.

Finally, I desire to present a few facts tending to show that under certain as yet undetermined conditions the elimination of arsenic may not go on so rapidly as is usually the case. If this is true, it may explain the occasional delay in the outbreak of symptoms.

The time usually considered sufficient for the complete elimination of arsenic is twelve to twenty days, but some chemists place the extreme limit, in the case of man, at six weeks, and traces have been found in the tissues of animals after forty days. The subject seems to me of so much importance, with relation to the occasional late appearance and long continuance of certain symptoms of poisoning, that I venture to offer a few facts to show that elimination may sometimes be delayed.

Even Taylor ("On Poisons"), while asserting the general principle of rapid elimination, admits by inference that the process may be delayed if the eliminating organs are working as they should.

1. Two cases have already been reported (Cases 6 and 8) where the elimination was apparently going on for seven to nine months after cessation of the exposure, though it must be admitted that this class of cases is not suitable for conclusively settling such a point. The steady improvement and eventual recovery of the patient seemed to indicate that the real cause had been found, but it is possible that absorption went on for a time from the accumulations in the air of the house, or in the form of dust.

2. A similar case to these, with elimination continuing for three months, is given by Kjellberg.[3]

3. A case of poisoning from medicinal doses is cited in a paper previously published by myself,[4] where the arsenic did not disappear from the urine for nearly fifty days.

4. A case is reported above (Kirchgasser) showing that the fæces may contain arsenic after elimination by the kidney has ceased.

5. The most important case is one given by Gibb in the Transactions of the Pathological Society of London,[5] where traces of arsenic were found in the liver and bones six months after cessation of a long course of medicinal treatment which had led to paralysis and eventually to death.

One reason, perhaps, that it has been so strongly asserted that arsenic does not accumulate is that it has been supposed that arsenic did not form definite compounds with the albuminoid tissues of the body. This view is, however, disproved by the recent experiments of Dogiel, the last series of which are reported in the Transactions of the International Congress at Copenhagen in 1884.

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[3] Hygeia, 1881, cited in Virchow, and Hirsch's J. ber., 1882, i. 398.

[4] Boston Med. and Surg. Jour., 1888, vol. ii. p. 1.

[5] See the Boston Med. and Surg. Jour. 1888, ii. p. 1.

THE ETIOLOGY OF DIPHTHERIA.[1]

BY SAMUEL N. NELSON, A.M., M.D.

Concerning the origin of diphtheria much discussion has arisen. Although its infective character has been doubted by some, it is now quite universally accepted; and I shall confine my remarks to a brief review and discussion of the etiology of the disease from the standpoint of the biologist.

I shall adhere to the classification of micro-organisms that is now universally adopted, viz., using the term "bacteria" in a generic sense, including both the

Micrococci, the ball-forms, and the

Bacilli, the rod-forms.

That bacteria were early found in diphtheritic membrane, even before the recent improvement and perfection of the microscope permitted the researches and investigations resulting in the discovery of many pathogenic micro-organisms, is not to be wondered at, when we realize that the healthy human mouth is constantly infested with bacteria of various kinds; not less than thirty different varieties having been isolated and cultivated by my friend Prof. W. D. Miller, whose labors have won for him the distinction of being the only American who has been honored with a professorship in the University of Berlin. We must remember, however, that it is one thing to prove the existence of micro-organisms in a diphtheritic false membrane, and another thing to prove that these germs are the *cause of the disease.* The difficulties are very great, and in the case of diphtheria as perhaps in no other disease, do we realize the importance of the isolation of the bacteria and their cultivation in a pure state, together with the reproduction of the disease by inoculation of the cultivated germs, before an attempt can be made to judge whether they are present as the cause of the disease, or are there, as most of them undoubtedly are, only as a result of the diseased state affording favorable conditions and soil for their growth and development.

The first reference to the idea that diphtheria is of parasitic origin, that I have found, is an article by Prof. Lacock,[2] and the idea was afterwards revived by Jodin.[3]

Oertel[4] says concerning bacteria in diphtheria: "They were discovered as far back as 1868 by Buhl, Hueter, and myself [I called them at that time micrococcus] in false membranes, the blood, and the tissues; in like manner they were demonstrated by von Recklinghausen, Nassiloff, Waldeyer, Klebs, Eberth, Heiberg and others, in the most different organs and tissues. In secondary infection of wounds, tracheotomy incisions, and ulcers, the grayish skin-like false membranes, as well as the tissues themselves, are crowded with these organisms."

In a "Treatise on Diphtheria," 1880, Dr. A. Jacobi reminds us that "Buhl was the first to discover schizomycetæ in diphtheritic membrane, but expressed no opinion as to the part they played in the process." Hüter found them in the gray diphtheritic covering of wounds, in the surrounding apparently healthy tissues, and in the blood. Hüter and Tomasi found them in the diphtheritic membranes of the pharynx and larynx, inoculated them on the mucous membranes of animals, and described them as small, round or oval, dark-colored, active little bodies. The latter observers look upon these organisms as a part of the infectious element. Oertel found them in diphtheritic membrane and in inflamed mucous membranes, in the lymphatic vessels, lymphatic glands, kidneys and other organs; he considers them at the bottom of the diphtheritic process and constituting the contagious element. Nassiloff, too, after inoculation in the cornea, noticed an enormous multiplication of the microscopic organisms, and their appearance with pus-cells in the lacteals, and in the lymphatics of the palate, and even in the bones and cartilages. He asserts that the development of organisms is the primary step in the diphtheritic process. Eberth made successful inoculations in living tissues: the micro-organisms, introduced into the cornea, proliferated actively and caused an inflammation of irritative character in the surrounding tissue. He asserts[5] that diphtheria cannot occur without bacteria. Klebs inoculated the micrococci in pigeons and dogs and demonstrated the presence thereof in the blood of the animals after death. Orth found them in the pleura, lungs, kidneys, and urinary bladder."

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[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, Feb. 13, 1889.

[2] Medical Times and Gazette, May 29, 1858.

[3] "De la nature et du traitement du croup, etc.," Revue Méd., t. I. pp. 22 and 151, Paris, 1859.

[4] Cyclopædia of the Practice of Medicine, Ziemssen, American edition, vol. I. page 588.

Giacchi[6] believes that a parasite is as necessary in the pathogenesis of diphtheria as the *Oidium vitis* is in the production of the disease of the grape.

Letzerich[7] also differs from other German observers in regarding a true fungus, *Zygodesmus fuscus*, as the specific contagion of diphtheria.

The ***Micrococcus diphtheriæ***, Oertel,[8] is thus described: "It has an oval form, with a length of 1 to 1.5μ and a breadth of 0.3μ; larger individuals, found nearer the surface, being 4.2μ long, and 1.1μ broad. Where the individuals are more scattered, they occur mostly in pairs, rarely a number connected into a torula-like chain. When present in masses, the cells lie so close together that it is difficult to determine whether they are connected or not. They are then imbedded in a gelatinous envelope, and thus combined in masses into a colony."

Talamon[9] does not recognize the Zygodesmus fuscus of Letzerich nor the Mycrosporon of Klebs as the cause of diphtheria, which he believes to be a mycelium with characteristic growths from 2 to 4 or 5μ size, and having two kinds of spores: —

a. round or oval spores, which are the spores of germination, which occur in zooglea, and

b. rectangular spores, which represent the third term of development of the fungus. These he has cultivated and inoculated on the mucous membrane of the mouth and nose of six rabbits, two guinea pigs, four frogs, one cock, and four pigeons, with reproduction of the membrane and death of some of the animals.

Klebs[10] mentions that at first he supposed there was only one form of micro-organism present in diphtheria. This he called the *Microsporon diphtheriticum*, and he claimed that it produced both rods and cocci, as different forms in the development of the same organism. Afterwards, however, he says that he recognized another form of diphtheria, which was characterized by the presence of bacilli. The later form he found at Zurich. It corresponded with the first form only in the gross anatomical changes. The latter form is characterized by the tendency to an extremely rapid extension of the membrane into the trachea, even while the affection in the pharynx is still in active process. Death usually occurs from suffocation.

Morphologically, Klebs says that the bacilli are long and narrow and that they hardly attain the size of the bacillus tuberculosis. Two spores are always found in each rod. When the diphtheritic membrane is dried gradually over sulphuric acid at the ordinary temperature, the spores increase very rapidly, and then rods may be found which contain no spores, while others contain four spores. He is convinced, he says, that a true diphtheria exists only when rod-shaped organisms are present in the membrane. This allows of two possibilities: in the microspore form we have micrococci, together with somewhat long rods which do not contain spores, and in these cases a general infection is rapidly developed. In the bacillus form, on the contrary, which is first dangerous on account of its rapid extension on the mucous membranes, we find a great number of small rods which contain from two to four spores.

We learn from the address of Dr. E. G. Barnes[11] that Loeffler, whose investigations were extensive and are published by the New Sydenham Society, found, in the cases he examined, two organisms present in large numbers; the one were chain-forming micrococci or streptococci; the other the bacilli described by Klebs as characteristic of diphtheria. The streptococci may be exonerated from being the active cause of diphtheria by the fact that they are present in various other diseases which are accompanied by lesions of the mucous membrane, for example, small-pox, typhoid and puerperal fever, and therefore may be regarded as accidental; that they are found only in a limited number of cases of human diphtheria, and that, when inoculated on lower animals, they never produced a disease even resembling it. Much stronger evidence was shown by Loeffler in favor of Klebs' bacillus being the true cause, and he even produced a similar disease by inoculating them on lower animals; but, on the other hand, he found they were not present in a number of undoubted cases of diphtheria; that in the false membrane he produced by introducing them through a wound in the trachea in rabbits and fowls, he did not find them in the same typical arrangement as in man: that they produced no effect in several animals otherwise susceptible to their action when applied to the uninjured mucous membrane of the fauces, respiratory passages, eyes and vagina; that paralytic symptoms did not occur in the inoculated animals; and, lastly, that in one case he found a perfectly indistinguishable bacterium in the saliva of a healthy child.

Many allusions are now being made in the secular press to the work recently done in Pasteur's laboratory, which has been described in the *Gazette*

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[5] Zur Kenntn. der bacterit. Mykosm, 1872.

[6] "Natura e therapia dell' angina difteria," Lo Sperimentale, Nov., 1872.

[7] Virchow's Archiv, Bd. xlv. *et seq.*

[8] Zur Ætiologie der Infectionskrankheiten, 1881; and Journal Roy. Mic. Soc., ser. ii. vol. ii. p. 88.

[9] Progrès Med., 1881, ix. pp. 122 and 49

[10] Verhandlungen des Congresses fuer innere Medicin, 1883, pp. 139 to 154.

[11] British Medical Journal, July 28, 1888.

Hebdomadaire de Méd. et de Chir., January 18, 1889. MM. Roux and Yersin constantly found the bacillus of Klebs and Loeffler, which they describe to be a little thicker than the bacillus tuberculosis and of the same length. This description, you will observe, differs a little from the original description of Klebs quoted above. They have cultivated the bacillus; and their inoculation experiments have produced paralysis, without which they do not consider the proof of real diphtheria conclusive.

My own experiments in the cultivation and inoculation of the bacteria of diphtheria were made several years ago, and are reported in a paper read before the meeting of the Eighth International Medical Congress at Copenhagen in 1884.[12]

In November, 1883, I assisted Dr. H. O. Marcy in performing the operation of tracheotomy upon a child three years old, who was suffering from a severe attack of diphtheria. He was *in extremis* at the time of the operation, the breathing being very short and difficult. Membrane covered both tonsils. The operation was successfully performed and a tube inserted, when the breathing became perfectly free. Previous to the introduction of the tube, a complete membranous cast of the trachea was removed through the opening. The subsequent history was unfavorable; for the child died of blood poisoning about thirty-six hours later.

Soon after the operation I inoculated one of my culture-bulbs with a small piece of the membrane removed from the trachea. These bulbs are made after those of Sternberg of the United States army, which I then preferred to the method of culture on solid culture-media; I had not become thoroughly familiar with the latter method until some months later in Berlin, when I was soon convinced that it affords many advantages that cannot be obtained from cultures in bulbs. These bulbs are made from ordinary glass-tubing about three-tenths of an inch in diameter. In one end, a bulb is blown and the other extremity is drawn to a fine capillary point. These I made myself in quite large quantities at a time. They were filled two-thirds full with a sterilized beef-bouillon, then hermetically sealed, and in this condition they will keep indefinitely if successfully made.

For cultures I found it best to use bulbs which had stood the test of a temperature of 70° to 100° F. for several weeks; for if they remain clear and pellucid at the end of this time, any subsequent changes that might occur are due to the substances introduced.

Four days after the introduction of the diphtheritic membrane as seed, the liquid in the culture-bulb kept at temperature of 70° became cloudy or turbid; and when examined with the microscope at 1000 diameters, there were found immense quantities of a micrococcus, identical with those seen in the fresh membrane. This micrococcus has about the diameter of the micrococcus of pus, and is very slightly elongated. They were grouped in clusters of a few members each, and belong to the group of staphylococci.

A second culture-bulb was inoculated with a fraction of a drop of the liquid in the first, and three days later the same cloudy appearance was noticed and examination showed identical micrococci. In this way the cultures were carried through ten generations, in each case several bulbs being inoculated at a time, and each one breeding true in three days. In all, about fifty bulbs were used.

My subsequent experiments of inoculation were carried on with the advice and assistance of Dr. Wm. F. Whitney. Four guinea-pigs were inoculated in the cornea with the contents of one of the bulbs containing the culture of the sixth generation. One of these animals died thirty-six hours later of blood poisoning. The others became very ill, losing their appetite and the eyelids becoming much swollen and œdematous, with profuse discharge which contained the micrococci. The cornea became cloudy and was covered with a membrane. Two of these animals were killed on the third day after inoculation, this being the period at which the micrococci developed; one was allowed to get well, but the eye was completely destroyed.

In the aqueous humor of the eyes dissected there were found micrococci, which were also found in sections of the cornea of the eyes, which had been placed in alcohol immediately after removal, and when hardened were cut with a microtome.

These experiments are limited in number and, I know, need further confirmation; but as far as they go they seem to show that there is a micrococcus of diphtheria which can be cultivated, and which when inoculated in the guinea-pig produces diphtheria.

If, however, further proof is needed I can give it; for on the third day after killing the animals, and after no other exposure, I myself became ill, developing a severe attack of diphtheria, which appeared first in one tonsil and the uvula, and then on the other tonsil; being accompanied with severe constitutional symptoms and followed by a slow and tedious recovery. This has proved, to my satisfaction at least, the correctness of these views.

Thus we see in brief review the chain of the sequence of events: —

A typical case of diphtheria in a child;

The presence of micrococci in the membrane;

The cultivation of the micrococci in pure cultures to the tenth generation;

The inoculation of guinea pigs with micrococci of the sixth cultivated generation, and reproduction of the disease;

The unwitting inoculation of the experimenter, thus bringing the disease back to its original form in a human being.

REPORT OF PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

THE TREATMENT OF TENSION AS MET WITH IN SURGICAL PRACTICE.

THE following is Mr. Thomas Bryant's summary[1] of his views on this subject: —

1. The pain associated with every form of inflammation of the bone or its periosteal covering is due to tension, and the severity of the pain is a fair measure of its intensity.

2. In acute inflammation of the bone or its covering, tension is the chief cause of necrosis, and in the subacute and chronic forms it is a potent cause

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[12] Compte-rendu de Congrès Périodique International des Sciences Médicales, 8me session, Copenhagen, 1884, t. i. Section de Pathologie Général et d'Anatomie Pathologique, p. 114

[1] Medical Press, July 11, 1888.

of their chronicity, as well as the destructive changes which as a rule follow.

3. The relief of tension wherever met with, when the result of inflammation, is an important principle of practice which should always be followed. In bone this is most imperative, on account of the difficulties under which natural processes act in that direction, by reason of the absence of elasticity or yielding in bone, and by reason of the anatomical arrangement of its vessels which favor blood stasis.

4. To relieve tension in the softer tissues of the body, the local application of leeches, local or general venesection, acupuncture, aspiration, punctures, or incisions may be necessary; whereas, to carry out the same practice in periostitis or ostitis, subcutaneous or open incision down to the bone, and the drilling, trephining, or the laying open of the bone by a saw may be required, the choice of methods having to be determined by the individual case.

5. In the early or the hyperæmic stage of inflammation of the bone, before destructive changes have taken place, experience seems clearly to indicate that the relief to tension — as indicated by a dull aching pain, etc. — by means of drilling or trephining into the bone, may arrest the progress of the disease, and help towards a cure by resolution, whereas, in the exceptional cases in which this good result does not take place, suffering is saved and destructive changes are limited.

6. In articular ostitis, of every kind and variety and in every stage, this mode of treatment cannot be too strongly advocated, as tending toward the prevention of joint disease.

7. In acute or chronic abscess in the bone, diaphyseal or epiphyseal, the abscess must be opened as any other of the soft parts, drained and dressed in the most appropriate way — the principles of treatment being the same in hard or soft tissues, although they are modified by the anatomical conditions of the parts.[2]

THE PROGNOSTIC VALUE OF THE ABSENCE OF THE PATELLA REFLEX IN OPERATIONS ON DIABETICS.

P. Reynier[3] claims to have discovered a valuable guide to prognosis in the presence or absence of the patella reflex in diabetics who require, for any reason, surgical operations. His statistics are as follows. Three cases — patella reflex normal, no complication. One case — patella reflex much diminished; dietetic treatment diminished the amount of sugar in the urine and there was a coincident return of the reflex. Patient recovered. In four cases — no patella reflex; all died. Reynier concludes that when the reflex is normal the patient recovers without more difficulty than other patients from similar operations; that a diminished reflex indicates that dangerous symptoms will appear; and that its absence generally accompanies a fatal result.

THE INJURIES OF BALL PLAYERS.

A. H. P. Leuf[4] has been stimulated to write an account of this subject by the paper of Dr. George Werry which appeared in the *Lancet*.

He summarizes the subject in an admirable manner; and gives the treatment which he pursues in this class of injuries as follows: —

In all acute cases I invariably make use of a compression support, and prescribe rest. My usual method in the most severe cases is to apply a suitable bandage, and sometimes, either because of a natural hollowness or much tenderness, I place over the seat of injury a soft cotton pad. Pressure and rest are continued for several days until moderate motion of the limb causes but a slight and indefinite feeling of pain, accompanied by a sensation of stiffness. If the pain is so severe at first as to cause much loss of sleep, I give just enough opium to cause relief, and have cloths wrung out of hot water applied locally at frequent intervals. During this period the patient keeps his room. After a few days, when the very marked symptoms have abated, the patient feels much as though he had just received a fresh injury of average severity, and such is practically his condition. The treatment is the same in both instances. It consists of regular moderate exercise despite some pain and considerable stiffness. The injured part must always be kept warm with scrupulous care. Morning and night there should be gentle kneading, and vibratory massage of the affected parts and surrounding area. At the end of another week or ten days recovery is either complete or the injury begins to get chronic. In this latter stage no little care is required to watch daily changes, for the symptoms are ever changing, and the spots of tenderness flitting about from place to place. At this stage almost any amount of exercise is admissible, provided that the part is not struck another blow, or (in case of a joint, ligament, or tendon) does not receive another wrench. The main therapeutic reliance now is galvanism. This must be applied daily, in moderate strength, for about fifteen minutes. Interruptions of the current should cause distinct muscular contractions. The positive pole, as a rule, does best at the seat of injury. The skin should be reddened by the electrode. During a sitting the tenderness will shift under the electrode, and when followed up with the positive pole it will shift its place again. At the beginning of the sitting the patient, as a rule, repeatedly jabs his thumb or finger firmly toward the bone in the affected area, so as to be able to identify the focus of the trouble.

I have found many times that these cases will remain permanently at a subacute stage unless they are properly handled. To me it seems that the electricity is all-important, for it appears to have a revivifying effect upon the disordered functions of the part that has been injured. I believe that it sets up a cell reaction that causes resolution.

Heat has a charming, soothing effect in all these subinflammatory diseases of muscle, bone, and fibrous tissue incident to injuries received during active physical exertion. The best way to apply it is by means of hot water. This may be as a hot bath (local), cloths wrung out of hot water and wrapped with flannels, and rubber bags filled with hot water. All are good, but I prefer the bath or rubber bags, because they are the most efficient and easily handled.

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[2] Aug. 12, 1888.
[3] Bull. et mém. de la soc. de chir. de Paris, t. xiii. p. 144.
[4] Med. Rec., Dec. 1, 1888, page 637.

TRAUMATIC SUBDURAL ABSCESS OF THE BRAIN.

Stokes[5] records two cases and draws the following conclusions: —

1. That after the primary symptoms of cerebral traumatism have subsided, there is frequently a latent period of varying length, during which there are no distinct brain symptoms connected with abscess formation whatever.

2. That their appearance is as a rule sudden, and if uninterfered with they run a rapidly fatal course.

3. That the occurrence of pus production resulting from cerebral traumatisms is not incompatible with a perfectly apyrexial condition.

4. That this latter fact will probably aid in differentiating traumatic cerebral abscess from meningeal or encephalic inflammation.

5. That both as regards color and consistence there is a great variety in the contents of cerebral abscess cavities, and that, as shown in Wilm's case, published by Rose, of Berlin, they may become transparent.

6. That antisepticism has largely diminished the risks of the operation of trephining.

7. That having regard to the mortality of cases of cerebral abscess when uninterfered with, viz., from 90 to 100%, the operation is indicated even when the patient is *in extremis*.

8. That in the case where the trephine opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed.

9. That by the adoption of this measure the necessity for multiple trephine openings can be largely obviated.

10. That the employment of a blunt aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and evacuation.

11. That drainage is desirable in the after-treatment of such cases.

12. That both during and subsequent to operative interference in these cases a rigid antisepticism is imperatively required.

ON THE SURGERY OF THE BRAIN AND SPINAL CORD.

At the annual meeting of the British Medical Association, Macewen read an address on the above subject, in which he gave his pioneer work in cerebral surgery.[6] As is usual in the work presented by Macewen there was a great deal of careful, thoughtful work. He presents a few practical points in cerebral surgery which are really of interest: —

First, are the localizing motor phenomena reliable guides to the diagnosis of cerebral lesions situated in the motor cortex? My answer is unhesitatingly affirmative. Each case, however, requires to be studied on its own merits; the whole phenomena presented, the *unobtrusive* as well as the prominent features, must be carefully searched for, the degree in which each is present must be accurately measured, and the whole weighed and compared with former experience before drawing a conclusion. The various points upon which reliance is to be placed should be tested, wherever possible, by instruments of precision, instead of the rough impressions conveyed by the hand being trusted. In testing the power of the muscles in brachial paresis the dynamometer will impart much more accurate information than that which can be gained through the sense of touch, and occasionally shades of difference may be determined by it which would otherwise remain undetected. In many cases the evidence of focal lesions are so distinct that a diagnosis is easy; in others they are so intricate that a prolonged and minute investigation is necessary to decipher them, while there are still others in which the signs are so perplexing that at best an approximation only can be arrived at. To lay bare a certain known convolution on a cerebral surface, and observe the results of its stimulation, is an easier task than to take what appears to be a tangled skein of nerve phenomena, such as is presented by many lesions of the complex brain of man, and to relegate each to its true source, and infer from a study of the whole what particular parts of the brain are affected.

His suggestions in regard to anchoring of the brain and some of its consequences are of great interest.

When injury has been inflicted on the surface of the cerebrum, followed by plastic effusion and cicatricial formation, the superficial substance is apt to become soldered to the membranes, when these remain intact, which in turn may be soldered to the skull, or, in the event of their detachment, the brain may become directly adherent to the bone, by means of cicatricial adhesions. Thus the surface of the brain becomes anchored or soldered to its rigid walls. It has no longer the free play within its water-bed to expand and contract according to the varying states of the circulation. Each variation produces a dragging of the brain at this spot, and through it the whole hemisphere, at least, is affected. Any sudden physical effort pulls on the brain, producing a slight shock, a momentary disturbance, just as if the cerebrum had received a blow. Vertigo results. People affected in this way cannot rise up quickly, or perform any sudden movement of the body or head, without experiencing a sensation of giddiness, which sometimes causes them to drop. Consequently they are often incapacitated from pursuing their usual avocation.

Following upon this the gray matter of the cortex, immediately surrounding the cicatrix, by the incessant movement, is apt to become unstable, and to produce fits. Some cases of traumatic epilepsy are thus caused. Further, if the cortical irritation be continued, encephalitis is occasionally produced, often appearing in a chronic form and long remaining so, though susceptible of being lit up into an acute affection. If the temperature remains high, active interference is apt to induce an extension of the encephalitis. Operation in such cases should be, when possible, postponed. The disregard of this advice has, to his knowledge, in one instance, hastened the fatal issue, encephalitis becoming rapidly general.

He presents a statistical résumé. Of twenty-one cerebral cases (exclusive of fractures of the skull or other immediate effect of injury) in which operations have been performed, there have been three deaths and eighteen recoveries. Of those who died, all were *in extremis* when operated on. Two were for abscess of the brain, in one of which the pus had already burst into the lateral ventricles; in the other suppurative thrombosis of the lateral sinus had previously led to pyæmia and septic pneumonia. The third case was one in which there existed, besides a large subdural cyst over the one hemisphere, extensive softening at the seat of cerebral contusion on the opposite hemisphere, accompanied by œdema of the brain. Of the eighteen who recovered sixteen are still alive, in good health, and most are at work, leaving two who have since died, — one eight years after the operation, from Bright's disease, she in the interval being quite well and able to work; the other forty-seven days after the operation, after the abscess was perfectly healed, from an acute attack of tubercular enteritis.

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[5] Ann. of Surg., Oct., 1888.

[6] Medical News, Aug. 18, 1888, page 169.

Macewen has recorded his operations on the spinal column, and we find there are six cases in which the elevation of the posterior laminæ of the vertebra has been performed. Four of these have completely recovered, and two have died, — one of these from extension of tubercular disease months after the operation, and after the wound had healed; leaving one in which the operation possibly hastened the death of a patient who was otherwise in a painfully helpless and hopeless condition.

Such operations are now beginning to be practised by others. Mr. Horsley has, within this last year, published a successful case, in which a somewhat similar operation has been performed, for the removal of a small tumor of the theca, diagnosed by Dr. Gower.

A PROPOSED OPERATION FOR TAPPING AND DRAINING THE VENTRICLES AS A DEFINITE SURGICAL PROCEDURE.

Under the foregoing title W. W. Keen[7] proposes three routes as practical; they are as follows: —

I. Trephine half-way from the inion (the external occipital protuberance) to the upper end of the fissure of Rolando, half to three-quarters of an inch to either side of the middle line. Puncture toward the inner end of the supraorbital ridge of the same side. The puncture will pass through the precuneus, and the normal ventricle will be struck at some point in the posterior horn at from two and a quarter to two and three-quarters inches from the surface of the scalp.

II. Trephine at one-third of the distance from the glabella to the upper end of the fissure of Rolando, and half to three-quarters of an inch to either side of the middle line. Puncture in direction of the inion. The puncture will traverse the first frontal convolution well in front of the motor zone, and the normal ventricle will be struck in the anterior horn at about two to two and a quarter inches from the scalp.

III. Trephine one and a quarter inches behind the meatus, and one and a quarter inches above Reid's base-line. Puncture toward a point two and a half inches directly above the opposite meatus. The puncture will traverse the second temporosphenoidal convolution, and enter the normal lateral ventricle at the beginning, or in the course of the descending cornu at a depth of about two to two and a quarter inches from the surface.

Keen gives his preference to the last route, and concludes as follows: —

"An inch or a half-inch trephine opening having been made, the dura should be examined. If it pulsate, bulges in the wound, and is tense and elastic to the touch, it will confirm the diagnosis; should it be tense, elastic, and bulging, but not pulsate, abscess or tumor should be suspected and sought for. The diagnosis of dropsy of the ventricles having been confirmed, the dura should be incised conically and the grooved director now be introduced in the direction, and about the depth above indicated, unless fluid is found more superficially. If the first puncture does not reveal fluid, a second or third may be made. When found, it should be evacuated by the introduction of a dressing or hemostatic forceps. I should then introduce a drainage-tube for twenty-four hours or more, according to circumstances. The rest of the treatment would be the usual one in brain cases."

TREATMENT OF EMPYEMA OF THE ANTRUM.

Weinlechner[8] reports two cases where the Mikulicz method of draining the cavity through a puncture through the inferior meatus[9] was successfully employed, and corroborates Mikulicz' claims in its favor.

A NEW AND ONLY WAY OF RAISING THE EPIGLOTTIS.

In a very complete paper Benjamin Howard[10] presented on this subject to the Medical Society of London, Dr. Howard shows that the customary wrenching asunder of the clinched jaws and the seizing of the tongue in apnœa is not only ineffectual but occasionally distinctly harmful. His conclusions are as follows: —

1. That, contrary to universal belief, traction of the tongue cannot raise the epiglottis.

2. By sufficient extension of the head and neck, whether by volition, instinct, reflex action, or by the effort of another — whether in the healthy, the dying, or the dead — the epiglottis is instantly and beyond prevention made completely erect.

3. By complete extension of the head and neck the tongue and velum are as respiratory obstructions, simultaneously with the epiglottis, removed, and without a moment's delay the entire air-way can be straightened, enlarged, and be made free throughout by the nearest person. If syncope happen to be the chief or a secondary factor, this also thus gets the quickest and best correction.

The author expresses the hope, as he has the confident belief, that the facts submitted will be permanent additions to our means of averting death.

R. L. Bowles[11] objects to Howard's claim in a paper on "Raising the Epiglottis," and claims that not only is Howard's method not a new one but was suggested by Bowles to Howard in a paper on "Observations on Stertor," in *Medico-Chir. Trans.*, 1860, and later by conversation, which apparently led Howard to undertake the experiments on the subject that he has performed.

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[7] Med. News, Dec. 1, 1888.

[8] Wien. klin. Wchnschr., 1888, I. 8.

[9] Surg. Prog., B. M. and S. Jour., 1887, vol. cxvi. 255.

[10] Lancet, Oct. 27, 1888, page 819.

[11] Brit. Med. Jour., Jan. 12, 1889, page 65.

Further, Hewitt[12] in an addendum to remarks made at the reading of Howard's paper, inclines to believing that Bowles's claim to originality is well founded.

ADDITIONAL CONTRIBUTIONS TO THE MIKULICZ METHOD OF RESECTION OF THE THYROID.

Three years ago Mikulicz, Krakau, described his method for thyroid resection which he had tested in eight cases and recommended as a method by which one could avoid the dangers consequent to total extirpation.[13] Recently Trzebicky, Krakau, has published the data obtained from fifteen cases treated in this way by himself and Mikulicz.[14] Of 23 cases, in 5 was one-half of the gland first extirpated, and then the other resected. There were 9 unilateral and 9 bilateral operations. One death from secondary hæmorrhage from the superior thyroid artery, the only one in 42 cases of striomectomy. Trzebicky claims (20 successes in 22 cases) that 3-5 large ligatures (massenligaturen) in the parenchyma of the gland do not interfere with or at all delay recovery, provided an aseptic operation is performed. The reported complications were 3 cases of pneumonia, whose connection with the operation was uncertain: 13 cases among 22 recovered with intact vocal cords: in 9 paresis or paralysis was present before operation, which disappeared in 4 patients subsequent to operation. All but 3 patients were known to have resumed their former occupation. No recurrence had occurred from the remaining gland-tissue, which is valuable in preserving the contour of the neck. In one case (complicated with Basedow's disease) all symptoms of the latter affection disappeared after operation. Tetanus or cachexia strumipriva was seen in no case.

(To be concluded.)

Clinical Department.

NOTES ON TWENTY-SEVEN CASES OF DIPHTHERIA,

Occurring between July 1, 1888, and January 1, 1889.[1]

BY HENRY JACKSON, M.D.

From July 1, 1888, to January 1, 1889, I treated twenty-seven cases of diphtheria out of one thousand and thirty-one cases of all diseases seen in the second district of the Boston Dispensary, situated on the west side of Hanover street. Of these cases, five died: four of septicæmia, one of laryngeal obstruction.

Five cases were very mild; two were not confined to the bed.

In most of the cases the membrane was confined to the uvula and pillars of the pharynx. In three cases a large part of the roof of the mouth and lips was covered with membrane. Fifteen cases occurred in houses where the sanitary condition was bad. Ten cases where the sanitary condition was apparently good. Two cases in a house that seems to be in good condition, and yet one where I have found much sickness in the last two years, notably diphtheria last winter.

Where there were several children in a family, usually one or more cases of diphtheria appeared shortly after the first cases. Namely: —

In a family of three children all had the disease.

In a family of five children four had the disease.

In a family of three children two had the disease: later in the year two members of this family had typhoid fever. In all cases the disease was strictly confined to the house where it first appeared, and in only one instance did the disease spread to other families living in the same tenement.

Of the twenty-seven cases four were young adults; the average age of the children was five years, the youngest being eighteen months.

As of importance in making an early differential diagnosis between diphtheria and follicular tonsillitis I have found that in diphtheria: —

1. The temperature was much lower, often normal.
2. The constitutional symptoms were usually less severe at first.
3. The glands about the neck were more swollen and tender.

In all cases I have felt justified in making a diagnosis of diphtheria where there was membrane on the uvula or on the pillars of the pharynx.

As last year I could report that, having had in my charge in this district a large epidemic of scarlet fever, I was not aware of having carried the disease to a single child, so this year not a case of diphtheria has occurred in a family that was under my care for other diseases.

In other words, so far as any opinion can be formulated from so small a number of cases, the disease is very infectious to young children brought in immediate contact with those sick; the disease does not spread from house to house; the disease is not easily carried by a third person.

The following list shows the character and distribution of the various infectious diseases in the portion of the city above described, during like periods of two successive years.

JULY, 1887, TO JANUARY 1888.

Diphtheria	8
Tonsillitis	57
Scarlet fever	68
Measles	5
Typhoid	24

JULY, 1888, TO JANUARY 1889.

Diphtheria	27
Tonsillitis	31
Measles	2
Scarlet fever	1
Typhoid	23

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[12] Brit. Med. Jour., Jan. 26, 1889, page 185.

[13] Vide Schmidt's Jahrbücher. Bd. ccix. p. 73.

[14] Arch. f. klin. Chir., 1888, xxxvii. 3, p. 498.

[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, January 19, 1889.

— The first triennial prize of two hundred and fifty dollars under the deed of trust of Mrs. William F. Jenks, has been awarded by the Prize Committee of the College of Physicians of Philadelphia to John Strahan, M.D., M.Ch., M.A.O. (Royal University, Ireland), 247 North Queen street, Belfast, Ireland, for the best essay on "The Diagnosis and Treatment of Extra-Uterine Pregnancy."

The Trustees have made arrangements with Messrs. P. Blakiston, Son & Co., 1012 Walnut street, Philadelphia, for the publication of the successful essay, which will also appear in the Transactions of the College for 1890.

Signed by James A. Hutchinson, John Ashhurst, Jr., James V. Ingham, trustees of the William F. Jenks Prize Fund.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY, AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

January 9, 1889.

Dr. Henry Jackson read a paper entitled

NOTES ON TWENTY-SEVEN CASES OF DIPHTHERIA, OCCURRING BETWEEN JULY 1, 1888, AND JANUARY 1, 1889,[1]

as a preliminary contribution to the discussion of this important subject by the society.

Dr. A. L. Mason then opened a discussion on diphtheria with a report of six fatal cases of that disease in adults, which had recently occurred in the new diphtheria ward at the Boston City Hospital.

This ward, which was opened in April, 1888, was stated to be admirably adapted to its purpose, and the nursing was, in the experience of the reader, unequalled, because he knew of no other hospital in this vicinity where the nurses are systematically trained to take care of large numbers of diphtheria patients, a duty which they perform with the greatest intelligence and devotion.

Under these favorable conditions for treatment, however, the mortality had been large, many patients, both adults and children, dying from septic poisoning, heart failure in convalescence, and tracheal obstructions. Their state at entrance was very often bad, sometimes moribund. Almost all cases admitted would be classed as severe.

Dr. Mason continued as follows: —

It will be well, then, to consider how fast this disease has grown upon us, from a few isolated cases thirty years ago, until it is now the most fatal endemic disease of a preventable nature which we have to contend with.

The success of our board of health with smallpox makes it proper to assume that the mortality from all infectious diseases could be reduced to a minimum if similar methods could be adopted for their suppression.

In this connection I will refer to the Report of the Glasgow Fever Hospital, where by isolation and disinfection an improvement in the public health has been obtained.

There are obvious reasons why it is difficult to deal with diphtheria in this community, at present at least, in as summary a manner as with smallpox, although diphtheria is much less contagious, therefore more readily controlled; it is also more fatal, and in many cases it is entirely beyond the reach of medical or surgical aid.

During 1888 the number of deaths from diphtheria in Boston was 470, one-third of all the cases reported. This is in excess of the whole number of deaths from yellow fever in Florida during the recent epidemic, in which there were about 350 deaths in less than 4000 cases, or about 9 per cent.

At the City Hospital, with the assistance of Dr. W. A. Morrison, house-physician, I have found that the records of the diphtheria wards show in 1888 the admission of 199 medical and 126 surgical patients; total, 325; 34 cases were transferred from the medical to the surgical department for operation on account of tracheal obstruction. It will be seen, then, that 160 patients, or nearly half the whole number admitted, required surgical treatment. Of the remaining 165, who were treated medically, 47 died, or 28 per cent. Under fifteen years of age there were 145 admissions, with 40 deaths, 27 per cent. Between fifteen and thirty years, six deaths out of 49 cases, 12 per cent. There were but five patients over thirty years of age, viz., one of thirty, one of thirty-one, two of thirty-four, and one of forty years. One died from tracheal obstruction which was not relieved by tracheotomy.

Direct contagion was reported in about one-fifth of the admissions, but the history in this respect is often deficient. Many of the worst cases come from among the Germans, Poles, Italians, and other foreigners. Two cases came from the same family in six instances; three cases, three times; four cases, three times; five cases, once. Thirty-eight cases came from thirteen families.

Among the inmates of the hospital who took the disease were, one of the house-physicians as previously mentioned, who died after a brief illness; three nurses employed in the diphtheria wards; one nurse in a distant ward; and one laundry maid; all of whom recovered.

In 1880, when the facilities for isolation were imperfect, there were but 71 admissions to the medical department, of whom seven were hospital employees; 22 per cent. of cases died. In 1887 the rate of mortality, exclusive of surgical cases, was 29 per cent.

It is probable that a large proportion of the gravest cases occurring in the city come to the hospital, especially for tracheotomy. This necessarily makes a high death-rate; 47 per cent. out of a total of all cases admitted in 1887, 184 in number, died.

Dr. G. H. Lyman said: The number of cases of diphtheria has certainly been very startling at the City Hospital, and they presented some features unlike those I have observed in former years. Since October 1st I think that there have been in my care thirty cases; eight of these were transferred for operation, leaving twenty-two cases, of whom four died.

There has been another feature in connection with these cases that, I think, has been very striking, and that is the very weak pulse and the low condition of the patient in almost all the cases, certainly in a very large number of them. Of these twenty-two cases there were four of distinct heart-failure. One of them recovered; the other three died, and died apparently from a paralysis of the heart; it was not thrombosis: they died easily, and quite suddenly; there was no considerable effort required for breathing, no sudden excitement towards the last, which, I suppose, we should look for in cases of thrombosis. With the exception of these cardiac failures there have been none followed by symptoms of paralysis elsewhere. In cases of typhoid fever we have had quite a number of patients recover apparently entirely from the typhoid, but with neuritis developing during convalescence; there were half a dozen such cases, but none following diphtheria.

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[1] See page 262 of this Journal.

The great prevalence of this disease, it seems to me, is a thing to which prompt attention should be given. I cannot think, in view of the statistics of the Glasgow Hospital Report, that it is a necessary disease. It seems to me something could be done to check it. We can check small-pox; Glasgow people seem to be able to check diphtheria. I see no reason why we cannot do it here as well. The Boston City Hospital has accommodation for twenty-five to thirty diphtheria patients. For a portion of the time the ward has been fairly full, but no cases have been obliged to be placed elsewhere.

The cases Dr. Jackson speaks of, of mild diphtheria, or, granting a doubtful diagnosis, follicular tonsillitis, have been quite numerous. We have had a good many cases in which for twenty-four hours we did not attempt to make a positive diagnosis. There seems to have been a more constant accompaniment of tonsillar inflammation, distinct from diphtheritic disease, than I have ever noticed before. A good many have turned out to be tonsillitis, but some of them undoubtedly were diphtheria.

The importance of this disease must surely be manifest to this society, but I do not know how we are to properly remedy it except through some action of the board of health. I think the subject is important enough for this society to appoint a committee to consult with the board of health to see if something cannot be done to check the spread of the disease. Dr. Jackson mentioned one point that was confirmatory of the general view on the subject; that the disease was decidedly infectious, and *not* contagious. I have always supposed that to be the case, but his statistics and those which the chairman have given bear out my opinion very strongly.

I am rather surprised at the great mortality that the statistics which have been presented give. I did not suppose from my experience on the medical side of the hospital that it was anything like that. I suppose the cases turned over to the surgical side were transferred too late, or were of such a character that no operation would relieve the patient. This would increase the general mortality very much. The operation in a large number of surgical cases — cases extending to the larynx and requiring operation — is done in patients already reduced by the disease, and the mortality is very large indeed. Putting those aside I should say the mortality of diphtheria was small.

I would move that a committee of three be appointed by the chair, to confer with the board of health as to the desirability of further measures to limit the spread of contagious disease in Boston.

Dr. Durgin, Chairman of the City Board of Health said: The appointment of a committee would please me very much. I have listened to the remarks with a good deal of interest, and I felt very greatly pleased when I understood that there was to be a portion of this evening taken up with the discussion of the prevalence of diphtheria in Boston. The cause of such a large number being treated at the City Hospital has already been given by the reader. The accommodations have been greatly increased in the past year, and in addition to that, the board of health have taken measures to send more patients there than ever before, in consequence of the increased accommodations. I have been somewhat surprised at the very large rate of mortality at the hospital, which undoubtedly is accounted for in a large measure by the fact that many of the *worst cases* go there, and particularly the surgical cases. The mortality for the whole city, however, has not increased this year, that is, the percentage of mortality to the whole number of cases reported; I have brought a transcript from our records to show the percentage of mortality and the number of cases reported for the last eleven years, that is, during the period over which we have called for reports from the physicians. I find that the percentage of deaths from diphtheria of the total numbers of cases reported for the past year was 33.18%, and for the past five years the percentage has been 29.16% against 33.56% for the previous five years, there having been quite a reduction in the percentage of deaths in the total number of cases reported in the last five years compared with the previous five years.

Years.	Total Number of Cases of Diphtheria reported.	Total Number of Deaths from Diphtheria.	Percentage of Deaths from Diphtheria to the Cases reported.
1878	1370	448	32.7
1879	1167	391	33.5
1880	1715	588	34.2
1881	1680	601	35.7
1882	1386	458	33.04
1883	1415	445	31.4
1884	1212	345	28.46
1885	1263	334	26.42
1886	1188	329	27.69
1887	1049	316	30.12
1888	1422	470	33.18

In 1878 we called for reports upon diphtheria, and the first year we received 1370 reports, with 448 deaths, giving a percentage of 32.7% for the deaths. For the first five years there were 7363 cases and in the last five years 6134. I want to say in this connection that the difference between the official treatment of diphtheria and small-pox is certainly very great. In small-pox we have older people to deal with: the average age is considerably higher than with diphtheria; there is therefore less trouble in separating children from parents. In small-pox there is very great fear of the contagion; with diphtheria it is not as great. People will expose themselves and allow others to expose themselves to the one when they would avoid the other. A still greater difference between the two diseases is in the matter of diagnosis. In small-pox it is very easy, and is almost always made at a very early stage. The physician either recognizes the disease himself at once, or calls an expert to make the diagnosis. In diphtheria it is not so. In diphtheria there is, as we know, oftentimes great difficulty in making a positive diagnosis. The child remains under suspicion for several days, if not weeks., therefore the report to the board of health is delayed, sometimes until the child has died; and allows the consequent exposure more or less of other children to this disease, both in the family and to people who are liable to call at the house. Another difficulty in the way of treating diphtheria is the difference of opinion in the profession in regard to the true character of croup. There is a question in the society as to whether croup and diphtheria are one and the same disease, and so long as that difference of opinion exists, so long we shall have a large number of cases of a contagious disease, call it what you may, that will spread from one person to another, and cause croup, so called, in our community.

The cases are numerous where the disease has spread from one person to another in the family, and beyond the family, while the physician has persisted in calling it croup, and therefore not contagious. Another difficulty which stands in the way of successful treatment by isolation of diphtheria is the fact that in Boston we have no adequate hospital accommodation, notwithstanding the fact that the city has been somewhat generous in providing greater facilities in the past year; and the accommodations have not yet been used to their utmost capacity; still, we are constantly running across families where it is almost impossible to separate the children from the parents, or from each other, and the patient remains at home, and thus we constantly have a very large number of points of infection through the city, which never exist with small-pox, and which we cannot overcome. It becomes absolutely necessary, if we would treat diphtheria as we do small-pox, that the board of health shall have some place to quarantine such a family, in order to disinfect the house. Again, with small-pox we have the great advantage of vaccination, which cannot be overrated. There are, in spite of the best we can do, some insurmountable obstacles in the way of treating diphtheria and reducing its prevalence in our city as we might do with small-pox.

Dr. George B. Shattuck: We are very grateful to Dr. Mason for bringing before us such a practical subject in such a practical way; and it is only by discussing such a subject in a meeting, as we are doing to-night, that we can make some approaches towards creating precisely that public opinion which Dr. Durgin appeals to as necessary for the support of an executive body like the board of health; for it is very certain that a board of health is limited in its action, first of all by the powers which the laws give it, and secondly, beyond that, by the condition of public opinion, even where the laws support it in active procedures; and our expectations in regard to what the board of health can do must be controlled, even beyond and outside of what the laws allow, by the condition of public opinion, which limits what the board of health can practically accomplish. I think there is a great deal in the point Dr. Durgin has made with reference to the difference between diphtheria and small-pox. There is an utterly different feeling in the community with reference to small-pox, and one comes across it in all sorts of ways. I remember in a trial in court with reference to typhoid fever, it was perfectly simple to convince the jury and the judge that you could not have a case of small-pox without a preceding case, but as soon as we attempted to tell them they could not have a case of typhoid fever without a preceding case, that seemed to them very extraordinary, a very singular theory indeed, and they immediately wanted to know, if that was so, where the first case came from. With reference to small-pox that difficulty never came to their minds. The public does not reason about these diseases, and you can't do with reference to diphtheria what you do with reference to small-pox.

There is the question of diagnosis. Among some of our brethren who practise medicine, and especially sectarian medicine, a single individual may have three or four hundred cases of diphtheria in his practice in the course of a year, and of this, probably the mortality will be absolutely nothing. I remember such an instance not long ago in Springfield, where a distinguished sectarian practitioner described to a society how he had had several hundred cases of diphtheria in the course of the preceding year without any deaths whatever. One of the society, who had taken pains to look up the returns at the registrar's office, showed him and the society that he was mistaken in regard to this. But, of course, the question of diagnosis is a very difficult one, and cases may be returned as diphtheria which are not diphtheria, and, on the other hand, it is perfectly easy to conceal such a disease as diphtheria, which has not any external manifestations. Whilst acknowledging all that, I still sympathize with the feelings which the chairman has expressed; and I think any one on duty at the City Hospital, where we have certainly an opportunity to see as much genuine and serious diphtheria as any other practitioners in this community, if not more, could not help wishing that something could be done. In some cases you cannot force patients to be isolated. I remember one of those unfortunate instances in which almost the whole family — the mother, a child at the breast, and two or three young children — were all brought to the hospital with diphtheria, and one of the children, I think, died; the father came and removed the rest of the family and took them home against every remonstrance. It does seem as though such a thing as that ought not to be allowed to occur. The father took them back to the same house in which diphtheria had occurred a certain length of time before they inhabited it, and he took them back there because he said he couldn't go anywhere else. He made an effort to get other lodgings, but it was known his family had had diphtheria and he was driven back to the same lodgings. Such things are constantly presenting themselves to our attention and necessarily make us desire, if possible, that something may be done for their relief.

With reference to the mortality at the City Hospital: I do not think it is a large mortality, as mortality from diphtheria is recognized. I think that the statistics of the text-books and of other hospitals will show that the mortality is expected to range rather above 30% than below it. Many of the cases at the City Hospital are not only the worst cases, but are also, many of them, in the worst possible condition; and I think that it is rather surprising that under these circumstances the mortality should be as small as it is. Without going into the question of treatment, I should like to say that for many years I have felt that the fact that the mortality has been kept at the point where it is has been largely owing to the extremely skilful and faithful nursing which these patients receive at the City Hospital. I don't believe that that class of diphtheria cases would stand anything like as good a chance anywhere else under other circumstances, and for such cases as these, whilst it is important to have a sensible and experienced physician. I cannot help feeling that it is of fully equal importance to have an intelligent and faithful and devoted nurse, who is always on hand to carry out the minutest directions in the most prompt and regular and efficient fashion.

DR. G. H. M. ROWE, Superintendent of Boston City Hospital said: This is a subject in which I am much interested, as it involves so much experience in regard to the care of the patients with diphtheria at the City Hospital. The board of health for several years have appealed to us for greater facilities for the care of patients with contagious diseases. The same thing has been done in the City Hospital Report, in the Trustees' Report, and in the Superintendent's Report, for at least seven years previous to the time when we received our appropriation. Formerly these patients were taken care of in the mixed wards called K and L. The mortality was thought then to be large. The number of nurses who contracted diphtheria was very much larger then than it has been since the new wards were erected. It was only by publishing openly in the city council the fact that patients had come in there with one disease and contracted another — nine cases in one winter, of whom four died — that the appropriation was gained. I think it is an open question whether diphtheria wards should be attached to a city hospital; but it was Hobson's choice at that time. The Glasgow Hospital which has been alluded to by Dr. Mason is, as far as my knowledge goes, the finest hospital in the world, and the regulations for the separation and isolation of contagious diseases are the best I know of, — rules we are not able to enforce at the City Hospital. Our new wards, of course, were experimental in a large measure, but experience has proved that they are eminently successful in heating and ventilation. There is one fault that could be remedied, and that is that the fresh air supply is not equal to the exit. The system of ventilation is such that fetid odors are carried off rapidly. The accommodations have never been filled to their utmost capacity. We have accommodations for forty-two patients with diphtheria. At no time have there been more than twenty-seven, and it is rare that there are above twenty-two. In previous years the board of health has been clamoring for a place to carry these patients. The city government through its council has supplied such a place, and yet it appears from statistics which are well known to the gentlemen connected with the hospital, that the mortality this year has been something that is, I may say, alarming. It is so much so, and recognized at the hospital to such a degree, that the nurses, although very anxious to see the result of the experiment, become depressed after they get into these wards and are glad to be relieved and sent elsewhere. They work with the utmost faithfulness, and yet patients who seem to be doing well often die suddenly from septic symptoms or heart failure. That has a very depressing influence upon the nurses. During the last week in November Dr. Prescott made some statistics. They are not made with reference to publication. They are very nearly the same as those by Dr. Mason. The total number of patients with diphtheria admitted this year was 337. Dr. Mason has given the statistics of the patients admitted on the medical side. I have those who were admitted on the surgical side up to about the 5th or 6th of December. To that date the total cases admitted on the surgical side was 139. Out of that number the deaths were as follows:— Tracheotomy was done in 35; of that number 5 recovered and 30 died. Intubations, 71; 54 died and 17 recovered. By another classification, of those cases on whom intubation was first done and subsequently tracheotomy, comprising 16 cases, all died. Out of 17 cases on whom no operation was done, for various reasons, mostly because they were septic and operation deemed useless, 4 recovered and 13 died. That makes a total of 87 deaths. The total deaths were 53% at that time. The total admissions to the City Hospital in five years have been 960: in four out of five years 333 cases have died. When the new wards were opened I sent a communication to the trustees recommending certain rules in regard to the isolation of the cases and to the limitation of visitors. It was decided that the practice of admitting friends should go on in a tentative way, and the attempt be made to limit them as far as possible. Practice has shown that what Dr. Durgin says holds true; it is almost impossible to shut out the parents from their children; and if any attempt of that sort is made they immediately take their child away. Our invariable rule is that patients with tracheotomies and intubations are considered as *dangerously* ill. The parents are admitted at all times before 8 o'clock in the evening. We are practically able to exclude all friends except the parents, but beyond that it is very difficult to go in wards attached to the hospital; it is only possible when we have them isolated and separated. The only way to bring this about has been intimated by Drs. Lyman, Shattuck, and others, and that is the creation of public opinion. If the board of health cannot do it by its rules and regulations and by expression of official opinion through their published reports, and in various other ways; if the City Hospital through its annual report and that of the superintendent and trustees are not able to accomplish it, the only way remaining would seem to be that the profession through its societies in some formal way should try to educate the people to a better state of public opinion.

A conference with the board of health has been suggested. Until public opinion is created so that it shall influence the uneducated classes, and until some such legal restrictions are made for diphtheria as for small-pox, it seems to me impossible to stop it; when that period is reached it seems to me that a great deal will be accomplished in decreasing the mortality, and also in reducing the amount of disease. At the present time there are eighteen or nineteen cases of diphtheria at the City Hospital. The ward for scarlet fever has been closed, with the exception of two cases, for nearly three months.

DR. C. F. WITHINGTON: My experience of diphtheria, so far as hospital work is concerned, is limited to the out-patient department of the City Hospital; and I am sorry to say that patients with diphtheria come there, and it is not an infrequent occurrence to find, in looking over the patients in the morning, that a person with diphtheria has been sitting in immediate contact with other patients in the waiting-room. That, I suppose, is not peculiar to the City Hospital out-patient department. The same necessarily must happen more or less in all outside clinics. It is to be hoped that when the new building is completed at the City Hospital some opportunities will be found to question patients at least sufficiently to indicate the possible existence, not only of diphtheria but of other contagious diseases, so that these patients can be removed from contact with the others.

A question which has been of a good deal of interest to me of late has been with reference to the comparative frequency of diphtheria in the various wards of the city. I would like to know if the records at the office of the board of health show the distribution as to the wards of the city, because, it seems to me, that is a matter of considerable importance. It is generally assumed that a great deal of the diphtheria comes from the North End districts and other more crowded portions of the city. In Roxbury there is considerable prevalence of diphtheria for the last year. One of the cases reported — Case III. — I saw before she entered the hospital. Her surroundings were certainly not such as to give any clue to the origin of the disease in her case. In one house in that district, apparently in perfect sanitary condition, a well-built, large house, in 1876 there was a case of diphtheria in a woman of sixty or upwards, who died. The family then moved away. Two years later a young woman was confined in the house and died of puerperal fever. Her servant went home with a sore throat, which was serious, and whether she recovered from it I do not know. A sister of the lady sick with puerperal fever went home and developed typhoid fever; she was seriously ill. Another family took the house for a year or two, and in 1880 another case of diphtheria occurred in the same house in a child.

Last summer a lecture was published in the *British Medical Journal* in regard to the relative frequency of diphtheria in urban and suburban communities. The conclusion was drawn from some fifty different outbreaks of diphtheria, mostly in suburban communities, that in a pretty large number of cases of diphtheria it was impossible to trace the first case of the epidemic from a previous case. In only four out of fifty could the writer trace the first case from a previous case of diphtheria, and he was inclined to believe that a certain number of cases of diphtheria may develop from general insanitary conditions, possibly irrespective of a specific contagion from a previous case. That evidence was tolerably strong in his cases. He cites a number of parishes of over 1000 inhabitants which had a small number of cases of diphtheria in this period of years, while in another series of smaller parishes the frequency of outbreaks was proportionately larger. The figures he gives seem to me not to be borne out altogether by the figures in this country, so far as I have been able to ascertain. The last monthly report of the New York State Board of Health, for instance, gives the frequency of the deaths from diphtheria for the month of November 1888, in the different districts of the State, and of course the mortality by direct conveyance of disease from one to another would naturally be expected to be greater in the cities, but in spite of the fact that treatment is more active there than in the country districts, the proportion was much greater in cities like Brooklyn and Albany and Troy than in the back country districts; whereas the report of Dr. Barnes just referred to gives a much larger number of occurrences in the remote districts than in the larger cities. I should like particularly to know whether the occurrence of diphtheria is very much greater in the wards in this city which approximate more nearly to country conditions than in the more crowded wards, or the reverse.

Dr. Durgin: I cannot reply with exactness; but in the past year the distribution has been scattered over the entire city much more than in any previous years. As a matter of guess-work I believe that the percentage of cases of diphtheria in the population of the outlying districts is rather greater than that in the more densely populated parts of the city. I think that Dr. McCollom could give a better opinion upon that question than I, because he sees more of the cases. Dr. McCollom and his assistants usually see most of the cases, particularly those in the central part of the city.

I would like to call attention to one or two more points in relation to this disease, and one is the repetition of the disease in the same patient. The text-books, I think, say that one attack seems to predispose the patient to subsequent attacks. Although my own personal experience has not been a large one, this statement of the text-books has not been borne out by my observation; and I have fallen in with very few physicians who have had a different experience. We occasionally hear a patient say that she or he has had diphtheria several times before. I know that some physicians have seen a second and perhaps a third attack in the same patient. Of course if this happens frequently it gives us a greater disadvantage in taking care of diphtheria than in taking care of most of the other contagious diseases. I should be glad to hear expressions of others who have had experience with diphtheria, on that point.

The matter of removing a patient with diphtheria from the City Hospital is a serious one; legally, I think, neither the trustees nor the board of health would have the right to detain such a patient contrary to his desire.

Dr. Rowe: We try to adapt our policy to the class of people we have to deal with. In a large number of cases we have dissuaded them from removing patients with this disease. In all cases where such patients are removed they are discharged as going on their own request and against advice. We have a printed form for such cases, and at the end we state that they remove their child or friend knowing the disease to be diphtheria and dangerous both to the patient and the public, and they take the entire responsibility, freeing the hospital and its physicians and the authorities from all responsibility. There is a certain more ignorant class to whom we say, "It is impossible to take your child away." We say it to the Poles and Huns. "You cannot do it without permit from the board of health." If we should make it a test case, there might not be sufficient power with the board of trustees to retain a given case. If patients are taken from the City Hospital it should be understood that it is not done until after all proper measures are used to retain them.

Dr. G. B. Shattuck: I should be sorry if any gentleman present had the idea from anything I said that I supposed or meant to indicate that there was any lack of effort in the City Hospital or its board of trustees to prevent such an occurrence. I cited the occurrence to indicate to the society the position of public opinion, and the difficulties in dealing with this question, where such a thing as this was possible, and legal, and could be done and could not be prevented. It is exactly one of those points which we want to educate public opinion to deal with, and to stimulate our lawmakers to make laws with regard to. With reference to the family I cited, the father was a very independent, intelligent New Englander. If he had been a Pole or Polish Jew or German or Austrian, then, as Dr. Rowe says, there would have been some hope of dealing with him, because he is used to a paternal form of government.

It is difficult to make a diagnosis in many of these cases. Then as soon as we have made our diagnosis, it is a pity we have not the power, by law or public opinion, to isolate our patients.

Dr. Durgin: In a case of small-pox we never take a child without its mother or sister with it if possible, and that generally constitutes all the visiting allowed in the hospital. In very few instances the mother has been allowed to come to the hospital after the child has been removed to the hospital, but is always retained until the anxiety is over and then thoroughly disinfected and carried home. I don't think that the City Hospital trustees or the superintendent can be held to blame at all for the withdrawing of the patients. I don't understand that they have any legal right to detain the patient.

Dr. Lyman: I should like to ask the law on that point: if the law gives the board of health the power to isolate a small-pox case, why should it not have the right to isolate a case of diphtheria?

Dr. Durgin: It has the same right.

Dr. Lyman: These patients come in by order of the board of health: ought not they to be retained until the board of health gives permission to have them removed?

Dr. Durgin: I don't understand that the board of health has control over a patient after entering the City Hospital. We have the power to take them to the hospital, but no control after they are in it, the hospital not being in charge of the board. The line where our authority begins and ceases in that case is not quite clear. I can only say that when we have left the patient in the charge of the officers of the City Hospital I do not understand that we legally can exercise any further control over him. In our own hospital,—one established and maintained by ourselves—we would have a perfect right to detain them until all danger from contact with others is past.

Dr. Lyman: I should like to ask whether under the law the board of health must isolate all persons in any one special place: cannot the board isolate them in the City Hospital as well as anywhere else? What is the difference? Does the law state that a small-pox hospital shall be for and under the control of the board of health, or that the board of health shall have authority to isolate these cases. Suppose they choose to isolate them in a tent?

Dr. Durgin: In that event we should do precisely as we do in a dwelling-house. We place our own officers there. They are our agents and have the right. We cannot make Dr. Rowe an agent of the board of health. We could go there personally if we had the right to retain a patient as in a dwelling-house or in a tent. I give an unprofessional opinion in the matter. It is purely a legal question, and I don't wish to stand in the light of a lawyer in answering.

Dr. H. Osgood: When a patient leaves the hospital after having been confined a few days it seems logical to suppose he is in a worse condition than when he enters, and consequently the patient is less protected than when first sent to the hospital, as we will suppose, by the board of health. I would like to ask Dr. Durgin if this society as a body could not present a memorial to any authority, either to the city or the State legislature, which will give the board of health the necessary power, and, if such a memorial would be of use, to what authority should it be presented?

Dr. Farlow suggested that the work of the committee should be directed particularly to investigating and to conferring with regard to diphtheria, and not take in the other contagious diseases.

Dr. Marion: I have been extremely interested in the papers and the discussion which has been elicited; and I feel quite unequal to saying anything of importance upon the subject, feeling as I do that the more I see of diphtheria the less positive I am in my opinions as to its nature, and everything concerning it; so uncertain am I of late, that when I see a case, with reference to diagnosis I very often say I don't know. What seems to be a case of sore throat may be a case of diphtheria. When asked how long it will last I tell them frankly I don't know. If the child is not better within a week I think it is very serious. In ward 25, with a population of between nine and ten thousand, during October, November, and December there were reported to the board of health seventy-four cases, I think, a very large proportion of diphtheria it seems to me, and this has been equally distributed about the ward, not being confined to any particular locality, not confined to streets where they have sewers, to houses where they have water-closets or privies wholly, or where they have used well water to water from the mains. No one marked feature has been noticed except that it has been generally distributed through the ward.

With the epidemic or endemic in Brighton there has been a large number of cases of measles running along with it in the same families.

The matter of heart-failure has been referred to. It seems to me I have noticed that phenomenon more in this epidemic than ever before. With reference to heart failure in one family not reported as diphtheria, the child, as the mother told me, was choking. Upon examination it seemed the child had faucial paralysis with enlarged glands. All the children had had sore throats, this child included. Within a week after I first saw the child I was called again and found three of the children down with measles, this child with the rest. It came on with the same symptoms, but instead of having a good square eruption it was very pale, the pulse hardly perceptible. The child died that night in the first stage of measles. I returned it as a death from heart-failure in the initial stage of measles, heart-failure from paralysis due to diphtheria. In two or three other cases of measles I have noticed heart-failure.

Dr. Durgin refers to the repeated attacks of diphtheria in the same individual. In this epidemic I had a rather interesting case where a child came down with diphtheria, went through the regular stage of about ten days and recovered, and a day or two following showed the first signs of measles; the measles went through its regular course and before the child was allowed to leave the room again a membrane developed on the fauces and I believe it also extended into the larynx, as the child entirely lost the voice and was hoarse several days, but recovered. On the repetition of diphtheria in the child, the mother also came down with diphtheria.

Another subject that Dr. Durgin has alluded to is with reference to croup. I suppose that that is, and always will be, a disputed point. I don't know that all croup is not diphtheria; there are some cases that certainly don't get reported as diphtheria. A case that has recently occurred in the ward might illustrate what I mean. The children were all sick with measles under the care of a physician practising sectarian medicine. This child after going through the measles was attacked with croup. The child had the operation of intubation and died within twenty-four hours; was allowed to have a public funeral, was embalmed and had a "wake." Two days after the funeral the remaining two children of the family were sent to the City Hospital by my brother. On the following day I sent the woman to take care of a child during intubation, and subsequent to that there were several cases of diphtheria, but still the first case was claimed to be a case of Simon-pure croup. I fancy that oftentimes it goes that way. In connection with diphtheria it was my fortune to see several cases of diphtheria following croup; in most of these instances there was laryngeal complication, even when not coming to a fatal issue.

I have an interesting case to allude to in connection with diphtheria in the puerperal state. On the 30th of November a lady called at my office with a very severe sore throat. Being unable to make a diagnosis I gave her directions to go home and let me know if she saw anything in the throat that looked peculiar. The next night she found a very slight patch. I at once instituted the treatment for diphtheria; and the following day the fauces, soft palate, and both tonsils were covered with the characteristic exudation of diphtheria. She expected to be confined on the 5th of December. The diphtheritic process went on its regular way, and she was confined on the morning of December 5th. Everything went well. She had a very slight elevation of temperature that day; it fell back where it had been before. It did not begin excessively high — 101° or 102°, and in ten days she was convalescent and within two weeks the fauces, I think, all cleared. The child was taken immediately from the room and to another part of the house. The child was covered with an eruption of sudamina which changed to a milky appearance and disappeared. The mother did well. When the boy was twenty-four days old I was called to see it, as it could not breathe through its nose. I found a characteristic discharge of thin yellow serum, and felt sure it was going to be a case of nasal diphtheria. The following day a whitish membrane had formed near the anterior opening in both nares, and three or four days after that a patch of diphtheritic membrane had formed in the roof of the baby's mouth and extended back with just a trace on one tonsil. Further than that it did not extend, and it is still under treatment. The exudation has not disappeared from the roof of the mouth as yet. It is a complication, and when it was first presented I did not know what to think or how to act. It was one of the unusual complications.

Dr. McCollom, in answer to Dr. Withington's question in regard to the prevalence of diphtheria in the differentlocalities of the city, presented a list of the number of cases in Boston in the different wards, and the number of inhabitants in each ward according to the census of 1885: —

Ward 1	63	15,656	Ward 14	47	22,738
" 2	17	15,700	" 15	52	16,219
" 3	15	12,328	" 16	71	16,435
" 4	32	12,518	" 17	33	14,747
" 5	27	12,827	" 18	41	14,141
" 6	126	17,244	" 19	104	20,577
" 7	85	12,038	" 20	95	20,993
" 8	35	11,286	" 21	41	15,620
" 9	13	11,289	" 22	52	15,834
" 10	16	9,745	" 23	42	17,424
" 11	33	17,865	" 24	126	21,500
" 12	27	13,845	" 25	148	8,523
" 13	42	22,547			

1383 cases.

Dr. H. E. Marion presented the specimen of a cast of a trachea which he took from a child in 1871, thinking it a case of croup.

Dr. Farlow: As an additional means of preventing the spread of diphtheria it seems to me there is something we can do toward the well children of the family. Diphtheria is a disease much more common in children than in adults. Children are subject to nasal catarrh, etc., consequently they are much more liable to the absorption of germs; so that if there is a contagious disease in the family I think it is incumbent on the family physician to institute preventive measures, to see if there is any catarrh about the gums, or tonsils in particular, and if so, some alkaline douche should be used. Where there is a suspicion of diphtheria I think the children should be rigorously inspected. I don't think a physician does his duty who comes into a house, gives a doubtful diagnosis, and says: "Wait two or three days," without instituting some preventive means with regard to the other children; and it seems to me that the prevention is much more important than the cure, although of course the cure is the thing the family look for. If we can prevent the disease by keeping the throat in a healthy condition we are doing very much more than most physicians are doing now. It is what we should endeavor to accomplish.

Dr. G. B. Shattuck: Dr. McCollom's remarks with reference to the doubtful cases represent another difficulty, — that you can't send these cases to the diphtheria ward of the hospital any more than doubtful cases of small-pox to the small-pox hospital. In cases of sore throat the question comes up, "Is this patient to remain here or be transferred to the diphtheria ward?" Of course, if you send a case of tonsillitis or mild sore throat to the hospital, and the patient develops diphtheria, it may indicate that your diagnosis is correct, or it may expose you to a law suit.

DR. A. N. BLODGETT: In relation to the question of recurrence of diphtheria I have had one or two cases sufficiently marked to convince me that this is more frequent than is generally supposed. I treated a case of diphtheria, in a young man twenty years of age, in which there was a moderate exudation in the throat of unmistakable character, followed by paresis of almost all the voluntary muscles, so that the limbs were powerless, speech was seriously interfered with, the patient could not move himself in bed, and was absolutely helpless for a period of two or three weeks. From this he gradually recovered, being some time in convalescing, and requiring no less than nine months for restoration of strength and vigor. About eighteen months after this attack he was prostrated by another distinct and unmistakable attack of diphtheria: the pharyngeal exudation was distinct and unmistakable, but there was no affection of the nervous system of the kind which occurred from the first case. The two attacks were treated by careful isolation, disinfection, the use of bichloride of mercury, and tincture of the chloride of iron, together with strychnine and other tonics; the patient recovered.

DR. A. L. MASON, in closing the discussion, said: In making these informal remarks about diphtheria I did not wish to convey the impression that the mortality rate seemed to me excessive in the City Hospital. It seems to me the wards are doing their work very well, and I should think would tend to diminish the amount of grave diphtheria that exists in the city. The object of a resolution of this kind is to aid the board of health in all its efforts. I am sure all of us are obliged to Dr. Durgin, Dr. McCollom, and Dr. Marion for coming this evening and giving us so much valuable information with regard to the course of this epidemic.

Of course the mortality rate at the City Hospital is made much larger from the number of moribund cases which enter; but the rate of mortality cannot be regarded as excessively high, I think, as compared with statistics from other countries.

DR. LYMAN then presented the following resolution, which was read by the secretary: —

Resolved, — That a committee of three be appointed by the Chair to confer with the board of health as to the desirability of further measures to limit the spread of diphtheria in Boston. The resolution was adopted.

The Chair appointed Drs. G. H. Lyman, G. B. Shattuck, C. F. Folsom, as that committee.

On motion of Dr. Lyman, amended by Dr. H. Osgood, it was voted that the subject for discussion at the next meeting of the section be "The Etiology and Treatment of Diphtheria."

Adjourned at 10.30 o'clock.

Recent Literature.

Treatise on the Diseases of Women, for the use of Students and Practitioners. By ALEXANDER J. C. SKENE. New York: D. Appleton & Co. 1888.

While the author distinctly states in the title that this book is intended "for the use of students and practitioners," we must confess to a conviction that it is better adapted for the use of the specialist than either the student or the general practitioner.

It is not arranged so as to be conveniently used as a text-book. The division of the various diseases into classes according to the age at which they occur, while valuable as presenting the subject from a new standpoint, is more confusing to the student than a more purely anatomical basis of classification; and the histories of cases, while interesting and suggestive to the practitioner, add to the bulk of the volume without increasing its value.

The practising physician will find it interesting reading, and, if he desires to keep abreast of the progress in gynecology, will add this work to his library.

But it is the specialist who will find it of the greatest value. There are so many workers in the field, that it is of the greatest interest to get the personal record of individual experience and research. Much of what such a book as this contains is naturally what is common property of the profession, but views of pathology, the hints as to diagnosis, and the methods of treatment peculiar to the author, are what constitute its claim to recognition.

For these reasons Dr. Skene's book deserves a warm welcome. As the specialist meets with difficult and puzzling cases he will turn with pleasure to this work to see what the author recommends.

As would naturally be expected from Skene's familiarity with diseases of the urinary organs, that part of the book is particularly full, and with this and Dr. Baker's treatment of the same subject in the "American System of Gynecology," the profession cannot complain that this branch is neglected. The last chapter, on "Gynecology as related to Insanity in Women," is also valuable as giving us a phase of the subject not often considered.

Too much cannot be said in praise of the illustrations. Many of them are entirely new and remarkably clear. The chromo-lithographs are the most admirable in their way that we have seen.

There is not time in a short review to discuss Dr. Skene's work chapter by chapter. We might take exception to some of his conclusions, but the book as a whole is so valuable that we can heartily recommend it to the profession.

A Text-Book of Medical Jurisprudence and Toxicology. By JOHN J. REESE, M.D. Second edition. Philadelphia: P. Blakiston, Son & Co. 1889.

The appearance of a new edition of Prof. Reese's text-book is at once an evidence that the merits of the original work were promptly recognized and an intimation that there is a growing interest in a long neglected subject of medical study. Within the limits deliberately set by the author, that he would make a text-book and not a treatise, this volume fulfils its purpose as a concise and comprehensive manual of medical jurisprudence, a work in which one may obtain an excellent and accurate knowledge of the essentials of legal medicine. Considerable new matter has been added by the author, and the entire volume has been revised and brought into harmony with the most recent advances in forensic medicine. Especially is this true of the chapter relating to the microscopic examination of blood-stain.

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MORPHIOMANIA.

The words *morphiomania*, or *morphinomania*, and *morphinism* are used to designate the sum of morbid phenomena resulting from the abuse of morphia. The word morphinism may be compared to alcoholism, and morphiomania to dipsomania: the propriety of calling inveterate addiction to the morphine habit a *mania* is obvious to any one who considers how completely the will and moral sentiments of the victim are dominated by the passion for the narcotic.

This is a disease of modern life, and of recent origin. Opium eating, the sum of whose baneful effects has been called *thebaïsm*, has been practised for centuries in the East, and in China numbers among its victims one-fifth of the entire population. But opium eating and opium smoking have never prevailed to any great extent among Western nations, while within a few years — since the time, in fact, when the hypodermic syringe first came into use, about the year 1859 (we hardly need to go back to the discovery of morphine by Sertürner in 1817) — a new vice has sprung into existence more peculiarly suited to the temperament and habits of occidentals, which on the Continent of Europe and in this country has made thousands of victims, and is said to be steadily on the increase. Synchronously with the discovery of the wonderful pain-assuaging properties of hypodermic injections, morphinism became known.

The way in which this malady is developed is generally as follows: A patient shall be suffering from frequent attacks of angina pectoris, sciatica, hepatic colic, or some other very painful affection, for which his physician has resorted to subcutaneous injections of morphine. The relief has been speedy and magical. The painful disease persisting, the hypodermic injections are continued, but larger and still larger doses are soon required to produce the effect which small doses at first produced. The patient obtains a hypodermic syringe of his physician or of some druggist, and a quantity of morphine, the doses of which he readily learns (sometimes a prescription given him by his physician enables him to get a standard solution any number of times he desires), and he is now on the downward road; he has become a morphiomaniac. This is the way the vice comes to be generated; no one ever becomes a morphinist without some powerful motive; pain, mental distress, or insomnia. If physicians, say Levinstein, Zambaco, Erlenmeyer, would take more pains to search out and remove the original cause of morphine malady; if they would be very sparing in the use of hypodermic injections, never resorting to them till other and safer means have failed; if, moreover, they would see to it that these hypodermic injections shall never be administered by the patient to himself, but always by the medical attendant; and if, finally, apothecaries could be brought to exercise proper care and vigilance in dispensing morphine, never giving it except under a physician's orders, the evil would be virtually suppressed.

While alcoholic abuses are especially prevalent in the lower walks of life, the morphine vice is almost peculiar to the higher, as it is in these classes especially that we meet with the nervous temperament and painful neurotic maladies (as migraine) excessive cerebral stimulation and all the developed passions and morbid cravings connected therewith.

The onset of morphinism is generally gradual; a person may long use daily injections of one-twelfth to one-sixth of a grain with apparently no bad results, unless it be an increase of the reflex excitability, which after a few weeks gives place to depressant symptoms. If the daily doses of morphine, necessitated by the supervention of these symptoms, be gradually increased after a few months (according to Levinstein, six or seven), the system becomes saturated with the poison; there is marked general disturbance of nutrition, the appetite fails, and emaciation appears. We can hardly, with Von Boeck,[1] attribute this train of morbid phenomena to diminished absorption of food in consequence of the catarrh of the stomach and intestine which now exists, although this is undoubtedly one factor in the failure of nutrition. Morphine diminishes in the economy the oxidation processes on which the movements of assimilation and disassimilation depend; it is a true protoplasmic poison. By its action on the higher nervous centres it undoes the finished results of evolution by a sort of reverse process to that which goes on in normal development: its effects are, in fact (to quote from Lauder Brunton), exactly similar to those produced by the successive removal of the different parts of the nervous system from above downwards; the functional activities of the cervical ganglia being progressively suspended, the individual becomes more and more like the brute or the automaton.

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[1] Ziemssen's Cyclop., vol. xvii., Art. "Opium and Morphine Poisoning."

This action, it may be stated, is not peculiar to morphine, but is possessed by the narcotics generally, by chloral and by alcohol.

The excitability of the sensory nerves is everywhere diminished in confirmed morphinism, hence the absence of the sensation of hunger, the imperfect reaction to the usual stimuli, etc. Torpor of the nerves manifests itself in a variety of ways, from the capillary stasis (vaso-motor paralysis), with its consequent depression of function, to the muscular enfeeblement and the mental dilapidation which characterize chronic cases of morphine poisoning.

Probably there are few conditions of misery more poignant. The morphinist suffers from insomnia, nightmare, hallucinations, trembling of the hands and tongue, impotence, hypochondriac moroseness, neuralgias, and frequent febrile attacks; he is lean and cadaverous, his face is expressionless, his eyes have lost their brilliancy, his memory is poor, the power of mental application is absent; he becomes treacherous, suspicious, untruthful, in fact, almost demoralized; a full injection of morphine for a time relieves him, and brings back a sense of *bien être* and the ability to work, but the relief is of but fleeting duration, and the miserable victim soon again sinks into the abyss of despair.

As to the amount of morphine which persons confirmed in the habit require, this is sometimes very large: seven or eight grains a day would be regarded by many a morphinist as a very moderate allowance. Physicians in New England are acquainted with morphine habitués who have been known to take doses of from fifteen grains to a scruple. This quantity, when injected into the cellular tissue under the skin has been known to cause troublesome abscesses, such as often, in fact, attend morphine injections in the cachectic.

The morphine habit is difficult of eradication. The percentage of reformed drunkards is greater than that of reformed morphiomaniacs. The baneful drug has become a necessity: if withheld, every cell of the organism cries out in agony. The harmonious exercise of function in the economy cannot be maintained without morphia; the organs have, in fact, adjusted themselves to a new and artificial condition in which the great element of equilibration is that deadly alkaloid. Hence the removal of morphine gives rise to an all-powerful organic craving. Yet the pernicious habit must be broken, the morphine must be discontinued, if the poor victim of the vice would ever rise to the dignity of true manhood again.

Hard as the struggle to break off may be, many have successfully gone through the trying ordeal. It is essential to the success of the treatment that the morphinist shall desire to be cured, and shall co-operate with his physician and friends in the earnest endeavor for restoration.

There are two methods of leaving off: the sudden method and the gradual method. Levinstein is the conspicuous advocate of the sudden method, which theoretically is the best. The supply of morphia is at once stopped and forever. It is to be remarked that this method of weaning from alcoholism is generally the best. But in respect to morphinism, the practical difficulties in the way of sudden suppression are very great; dangerous collapse is liable to ensue, and wild and maniacal delirium, and the treatment can only be carried out in an institute where the patient can be properly watched and guarded. With robust patients, however, it is probably the better method. In about a week the worst symptoms are over, and the patient is on the road to convalescence.

The gradual method advocated by Burkart, or the modification first proposed by Erlenmeyer and called by him "the quick method," or "the modified slow method," is the one in use by most specialists.

The patient is gradually weaned from morphine; the injections are not given so often, or more water and less morphine are given with each injection By this method, the acute accidents are avoided, but the patient is long kept in a state of irritation, teased and tantalized without being satisfied. The nightly doses are throughout the weaning process the largest. Collapse is to be met by full doses; this condition may often be prevented by the administration of alcoholic stimulants, coca, food. Restlessness and insomnia may be combated by chloral, urethan, bromides, with, if occasion demand, a little morphine. The attempt during the weaning process to substitute cocaine for morphine has not been very successful.

THE MANUFACTURE OF SYNTHETIC REMEDIES.

COMPLAINT is made in various quarters that the new synthetic remedies, whose demonstrated value has led to very general use, are manufactured under patented processes, and that the prices at which they can be obtained are unnecessarily high. It is argued that as these substances are valuable only as a means of alleviating human distress, their manufacture should be unrestricted and open to all, to the end that active competition may bring the price to its lowest possible point.

At first sight this would seem to be eminently proper, but in consideration of the subject it will be seen that there is another side to the question.

It is to be remembered that the discoverers and patentees are not in any sense medical men, and hence are not to be governed by that principle of ethics which forbids the patenting of medicinal agents or instruments. Their discoveries are the *occasional* pecuniarily valuable results of lives spent in purely scientific research, which work everybody knows is as a rule only remunerative in reputation.

These discoveries are, after a long and careful series of experiments, shown to have a decided therapeutic value, and the processes are thereupon patented. The discoverer thus reaps a not undeserved reward for his work; but is he the only person benefited by the patent? Assuredly not, for the medical profession and the public at large are alike participants in the benefits; and in this way the manufacture of any one of the new remedies requires great care and scientific manipulation, and it is of the utmost importance to the profession, to the public, and to the reputation of the drug that the latter shall be supplied only in its absolute and unchanging purity. The unrestricted right to manufacture would doubtless in many cases result in inferior preparations or at least in preparations variable in composition, whose inconstant effects would soon lead to distrust, disgust, and abandonment. Thus the patent secures proper manufacture, a fair trial, and correct therapeutic rating, and saves to the world medicinal agents of great value.

MEDICAL NOTES.

— The Quarantine Conference holding its session at Montgomery, Ala., adopted, March 6, the report of its Committee on Quarantine. The report recommends that the health authorities shall regulate the hauling of persons, baggage, or freight from infected places during yellow fever epidemics, and that regulations and restrictions shall be such as to afford protection to endangered communities; that at all seasons of the year and under all circumstances the simple passage of trains should be allowed, even when carrying sick refugees to other localities, and that well-digested rules to govern quarantines should be prepared, published, and enforced whenever necessary; that only competent physicians who have had experience with yellow fever should be made inspectors of quarantine stations and have power to administer oaths and detain passengers and baggage; that State boards of health should be authorized to enforce quarantine regulations; that quarantine stations at Southern seaports are of great advantage and should be continued; that ticket agents should be required not to sell tickets during the yellow fever epidemics, and that travellers shall be required to have health certificates.

— Some interesting observations were recently brought before the Paris Society of Biology by MM. Pouchet and Chabry, as we learn from the *Medical Press*, on alterations in structure in animals and vegetables brought about by modifications of chemical environment. The experiments were carried out on some of the lower marine animals with a bony skeleton. These were placed in sea-water deprived of its calcareous constituents, the conditions thus being those obtained in the case of vertebrates unable to procure an adequate supply of lime for the formation of bone, with the larvæ of the sea-urchin, the formation of whose calcareous spiculæ envelope is easy to observe; the spiculæ were found to develop slowly and imperfectly, never attaining their normal shape or size, and when the amount of calcareous salts in the water was reduced to a minimum, death invariably followed a tardy and abortive process of evolution.

— The Florida Medical Association completed the business before the convention at St. Augustine January 30th and adjourned. The bill providing for a State board of health was further discussed, amended, and finally accepted. Dr. Lancaster, of Gainesville, was elected president for the ensuing year. The next meeting will be held at Key West on the second Tuesday in April, 1890, at which time it was decided that the association should take a trip to Havana. The following resolution was then offered: Resolved, That this association has confidence in the official assurances which have been given by the boards of health, and by the representatives of the Marine Hospital department, that the State is free from yellow fever at this time; and the members so announce themselves.

— The New York Academy of Medicine has at last secured a site for a building worthy of it and of its objects, and one which is probably destined to become the scientific as well as the medical headquarters of that city. In all, the purchase comprises three lots on the north side of 43rd street, between Fifth and Sixth avenues, about two hundred feet from Fifth avenue. It is a most desirable situation for the academy; within easy distance of the elevated railroads, the Grand Central Station, and the horse-cars. Two years ago, during Dr. Jacobi's presidency of the academy, it was favorably regarded by some of the trustees, but no purchase was then made.

In addition to the three lots acquired by the trustees, two fellows of the academy have secured another, to be placed at the disposal of the academy in case it wants to extend its building. In the meantime, it will build on at least seventy-five feet. The new house will provide ample accommodation for the members. It will be fire-proof throughout, and will contain a big meeting hall, a library, reading-rooms, general rooms, and half-a-dozen rooms of middle size, which will be devoted to the uses of the academy's ten sections, which all hold regular meetings. A number of scientific societies will also hold their meetings there. It is expected that the academy will begin to build during the summer.

— A remarkable legal decision is reported in the daily press from one of the courts of Ohio: — In sustaining the demurrer of the Repository Printing Company and ex-Judge Lahm in the damage suits brought against them for $40,000 by Paul Field and William Volkman, Common Pleas Judge Raley decided that "it is not libel for a newspaper to publish a man before the world as a bastard." In the article for which suit was brought the plaintiff was stamped as of illegitimate birth. Judge Raley held, as reported, that "libel was that which would bring one into ridicule, contempt, or hatred; that which would tend to degrade one against whom it was directed. A number of his honor's associates on the bench had been born out of wedlock, but they stood high in social and legal circles. If anything, their being of illegitimate birth elevated them.

— The Quarantine Conference, composed of delegates from eleven Southern States, met at Montgomery, Alabama, March 5. President, Dr. C. P. Wilkinson, of Louisiana; vice-president, David B. Haddon, of Tennessee, and one from each State represented; Dr. J. N. McCormick, of Kentucky, secretary. A paper was read by J. C. Clark, general manager of the Mobile and Ohio Railway, on railroad quarantine. Gov. Seay addressed the conference by invitation. Papers were also read by J. Vayle, of Gainesville, Fla., on "Recent Epidemics at Gainesville." Surgeon-General Hamilton and Dr. Frank Hutton, of the United States Marine Hospital Service; Dr. Geo. M. Steinberg, of Baltimore; Dr. John H. Rauch, of Illinois, were present.

— The Madrid physician who made the post-mortem examination of the body of Pigott, the defaulting and self-confessed perjured witness for the *London Times* in the great political trial now going on in London, and who committed suicide in Spain, declares he never saw such a well-formed skull and brain, the latter indicating a man of superior force of character and imagination.

— The Meharry Medical Department and the Dental Department of Central Tennessee College, the former one of the only two medical schools exclusively for negroes, and the latter the only colored dental school in the country, held their Commencement exercises February 21st. The Dental School graduated six men and the Medical School fourteen.

— The chair, entirely novel in medical colleges so far as we know, of Physical Examination for Life Insurance, has been created in the University of Vermont, and Dr. Charles F. Stillman, of New York, has been elected as its first incumbent.

— The contributions made in New York on Hospital Saturday and Sunday in December last, including all subscriptions appended thereto, is officially announced at $51,250, — $800 more than 1887.

The Connecticut legislative committee has reported adversely upon the bill regulating medical practice. A similar bill in the Rhode Island legislature was lately defeated by a small vote in a thin house, as was also a bill for the same purpose in Tennessee.

BOSTON.

— Dr. Henry F. Sears has offered to present the Harvard Medical School with a building for a Pathological and Bacteriological laboratory not to cost over $30,000, and the donor to name the architect.

— The Dental School of Harvard University observed the twentieth anniversary of its first graduation exercises by exercises in Huntington Hall, Institute of Technology, Boston, on the afternoon of Monday, March 11.

The programme of the literary exercises, which were of much interest, included: 1. Welcome, by President Eliot; 2. Twentieth Anniversary and History of Dental School, by L. D. Shepard, D.M.D., Boston; 3. Relation of the University to its Professional Schools, by Rev. Alexander McKenzie, D.D., Cambridge; 4. Charitable Work of the Dental School, by Rev. Edward A. Horton, Boston; 4. Needs of the Dental School, by Thomas H. Chandler, A.M., D.M.D., Boston.

On the evening of the same day a banquet was held at the Hotel Vendome, at which Mr. Roger Walcott, representing the overseers of Harvard University, presided. Speeches were made by Governor Ames, Treasurer Hooper, Rev. Dr. A. P. Peabody, Rev. Dr. McKenzie; Drs. Chandler, Fillebrown, and Shepard representing the Dental Faculty; Drs. H. P. Bowditch, and H. W. Williams representing the Harvard Medical School and others. A characteristic letter was read from Dr. Oliver Wendell Holmes. The Harvard Glee Club furnished the music. An effort is making by the alumni to increase the present small endowment of the school. Grateful acknowledgment was made by several speakers of the favoring help which had been extended to the Dental School by professors in the Medical School.

NEW YORK.

— At the meeting of the Academy of Medicine held March 7th, the President, Dr. Loomis, announced that the Academy had secured the refusal of three lots, valued at $90,000, for the erection of its proposed new building; the lots being situated on West 43rd street, near Fifth avenue. He also stated that an increased subscription of $20,000 or $25,000 would be necessary before the project could be carried out, and expressed the hope that this additional sum would soon be raised.

— Mr. J. T. Andrews, a wealthy citizen of Rochester lately deceased, left in his will the sum of $10,000 for the use of the Rochester City Hospital.

— Several State officials connected with the prison system, including General Lathrop, superintendent of State prisons, Warden Brush, of Sing Sing Prison, and Dr. MacDonald, superintendent of the State Asylum for Insane Criminals, meet this week to witness the final experiments requisite before the Electrical Execution Act can be enforced. It is said that similar bills are now before the legislatures of Ohio, Illinois, and Missouri.

REPORTED MORTALITY FOR THE WEEK ENDING MARCH 2, 1889.

Cities.	Estimated Population	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Typhoid Fever.	Diph. and Croup.	Scarlet Fever.
New York	1,571,558	857	366	21.36	20.40	.72	6.46	6.00
Philadelphia	1,040,245	425	124	11.52	13.20	9.90	6.05	3.30
Chicago	830,000	296	136	15.64	18.70	2.16	8.50	1.36
Brooklyn	814.505	365	166	18.90	21.06	.27	11.34	1.62
Baltimore	500.343	158	51	7.56	10.71	2.52	2.52	1.26
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	197	61	9.69	19.89	—	6.63	.51
New Orleans	250,000	93	20	11.88	6.54	1.08	3.24	—
Cincinnati	225,000	114	—	8.77	20.14	1.76	7.04	—
Washington	225,000	100	27	10.00	17.00	1.00	4.00	1.00
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82.000	—	—	—	—	—	—	—
Nashville	65,153	24	6	8.32	29.12	—	8.32	—
Charleston	60,145	31	7	3.23	12.92	—	—	—
Portland	40,000	11	7	9 09	—	—	9.09	—
Worcester	78,292	29	27	10.35	31.25	—	6.90	—
Lowell	71,518	29	13	17.25	17.25	3.45	—	—
Cambridge	65,552	15	2	—	—	—	—	—
Fall River	62,647	26	10	11.55	3.85	—	—	11.55
Lynn	53,334	23	—	13.05	8.70	—	8.70	—
Springfield	40,731	12	—	16.66	16.66	—	16.66	—
Lawrence	40,619	20	5	25.00	20.00	15.00	5.00	—
New Bedford	37.253	12	2	—	—	—	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	11	2	9.09	—	—	9.09	—
Brockton	28.813	14	5	—	7.14	—	—	—
Chelsea	28,167	6	2	—	—	—	—	—
Haverhill	26,058	5	2	—	20.00	—	—	—
Taunton	25,179	7	3	14.28	—	—	14.28	—
Gloucester	24,263	3	1	—	33.33	—	—	—
Newton	21,553	5	—	—	20.00	—	—	—
Maiden	19,774	10	1	10.00	10.00	—	10.00	—
Fitchburg	17,534	2	1	—	—	—	—	—
Waltham	17,332	6	1	—	—	—	—	—
Newburyport	13,875	8	1	12.50	—	—	12.50	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	1	—	—	—	—	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2915; under five years of age 1049; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 436, acute lung diseases 499, consumption 356, diphtheria and croup 177, scarlet fever 73, typhoid fever 47, measles 44, whooping-cough 41, diarrhœal diseases 29, malarial fever 9, erysipelas 8, cerebro-spinal meningitis 8. From measles, New York 26, Brooklyn 7, Chicago 5, Boston 3, Philadelphia 2, Lynn 1. From whooping-cough, New York 18, Brooklyn 11, Philadelphia 8, Washington 2, Baltimore and New Orleans 1 each. From diarrhœal diseases, New York 15, New Orleans 4, Lowell 3, Philadelphia and Washington 2 each, Boston, Charleston, and Lawrence 1 each. From malarial fever, New York 3, Brooklyn, Baltimore, and New Orleans 2 each. From erysipelas, New York, 4, Chicago 2, Brooklyn and Baltimore 1 each. From cerebro-spinal meningitis, New York 3, Philadelphia, Chicago, Boston, Worcester, and Lowell 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending February 16, the death-rate was 19.8. Deaths reported 3624, infants under one year of age, 834; acute diseases of the respiratory organs (London) 376, measles 154, whooping-cough 92, diphtheria 54, scarlet fever 43, diarrhœa 30, fever 27.

The death-rate ranged from 13.9 in Leicester to 29.3 in Manchester; Birmingham 21.4; Bradford 21.5; Hull 17.5; Leeds 18.2; Liverpool 21.0; London 18.2; Newcastle-on-Tyne 26·3; Nottingham 20.6; Oldham 33.5; Sheffield 21.5; Sunderland 21.4.

In Edinburgh 19.2; Glasgow 25.4; Dublin 29.4.

The meteorological record for the week ending March 2, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Mar. 2, 1889.	Barometer.	Thermometer			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
Feb. 24	30 76	8.5	18.0	.1	62	77		70.0	N. W.	S.		10	6		C.	C.			.00
" 25	30.65	17 0	24.0	12.0	76	44		60.0	N. W.	N. W.		9	11		O.	C.		3.30	.01
" 26	30.83	20.0	26 0	12.0	81	88		86.0	N.	N. E.		13	4		F.	T.		1.50	T.
" 27	30.61	30.5	34 0	26 0	64	95		80.0	E	S. E.		5	4		O.	N.		4 30	T.
" 28	30.56	32 5	35.0	28.0	69	90		80.0	N.	N. W.		9	5		O.	C.		8.40	.01
Mar. 1	30 44	34.5	40.0	26.0	68	70		69.0	N. W.	S. E.		9	2		C.	C.			.00
" 2	30.26	37.5	44.0	31.0	68	68		68.0	W.	E.		1	4		F.	O.			.00
Means for the Week	30.59		30.0	19.0				73.0											

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 2, 1889, TO MARCH 8, 1889.

Webster, Major Warren, surgeon, U. S. army, retired from active service February 28, 1889. Par. 9, S. O. 50, A. G. O., March 1, 1889

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 9, 1889.

Marsteller, E. H., passed assistant surgeon, detached from Monitors at Richmond and wait orders.

Cabell, A. G., passed assistant surgeon, detached from the Naval Hospital, Chelsea, Mass., and ordered to Monitors at Richmond.

McClurg, Walter A., passed assistant surgeon, promoted to rank of surgeon.

Babin, H. J., surgeon, detached from the "Mohican;" proceed home and wait orders.

Bradley, G. P., surgeon, ordered to the "Mohican."

Lung, Geo. A., assistant surgeon, detached from the "Vermont" and ordered to the "Mohican."

OBITUARY.

GEORGE WYMAN FAY, M.D.

At the meeting of the Norfolk South District Medical Society, held on March 7, the following resolutions were unanimously adopted: —

Whereas, in the providence of God, George Wyman Fay, a fellow of the Massachusetts Medical Society, has been suddenly removed from the scenes of his earthly labor, therefore —

Resolved, That in the death of Dr. Fay the medical profession has lost a worthy member, the sick a trusted counsellor, and the community an honored citizen.

Resolved, That we, the surviving fellows of the Norfolk South District Medical Society, cherish with fond recollection the memory of our late associate, whose genial presence, whose kindly greetings, whose valued contributions and whose frequent attendance at our meetings will be sadly and irreparably missed.

Resolved, That we express to the bereaved family of the deceased our high estimate of his character as a man, as a physician, and as a friend, and extend to them our sincere condolence in this their deep affliction.

It was voted that a copy of these resolutions be spread upon the records of the Society, that a copy be furnished the BOSTON MEDICAL AND SURGICAL JOURNAL for publication, and that a copy be sent to Dr. Fay's family.

JOHN F. WELCH, *Secretary*.

FREDERICK WINSOR, M.D.

Dr. Frederick Winsor, a well-known resident of Winchester, Mass., has died at Bermuda, whither he went on account of his health with his wife and daughter, a few weeks ago. The immediate cause of his death, which occurred on the 25th ult., was pneumonia. Dr. Winsor was born in Boston in 1829, and was the son of Thomas Winsor. He was a graduate of the Boston Latin School in the class that entered in 1842 of Harvard University in the class of 1851, and of the Harvard Medical School, class of 1855. He practised in Salem for some time, but removed to Winchester in 1861, after his return from the war, where he served as surgeon in the Forty-ninth Massachusetts Regiment, and was at Port Hudson. Dr. Winsor had a large practice in Winchester, and was one of the most prominent citizens of the town, in which he had held many offices. He was for many years Medical Examiner for Middlesex county. He leaves a widow, three sons, and four daughters. His body was buried in Bermuda at his own request.

DEATHS.

Died at Quincy Point, Mass., March 8, 1889, James Frederick Harlow, M.D., M.M.S.Sy., aged sixty-nine years.

Dr. Johnston B. Jones, a prominent North Carolina physician, resident at Charlotte, died March 1, aged seventy-four years.

BOOKS AND PAMPHLETS RECEIVED.

Yellow Fever: Absolute Protection secured by Scientific Quarantine. New York. 1889.

Seventeenth Annual Report of the Board of Health of the City of Boston, for the year 1888. Boston. 1889.

The Year Book of Treatment for 1889, being a critical review of the practice of medicine and surgery during 1888.

Pressure Forceps versus the Ligature and the Suture in Vagina Hysterectomy. By E. C. Dudley, M.D., Chicago. Reprint. 1888.

Transactions of the Ophthalmological Society. Twenty-fourth Annual Meeting, New London, Conn., 1888. Hartford: Published by the Society. 1888.

How Micro-Organisms Enter the Body. By George N. Kreider, A.B., M.D., Springfield, Ill. Corresponding Editor St. Louis Courier of Medicine. Reprint.

The Early Recognition of Cancer of the Cervix Uteri. By Henry C. Coe, M.D., M.R.C.S., Pathologist to the Woman's Hospital; Assistant Surgeon to the New York Cancer Hospital.

Laparotomy for Ascites. By Thomas A. Ashby, M.D., Member of American Gynecological Society, etc., of Baltimore. Reprint. Baltimore: Journal Publishing Company Print. 1889.

J. M. Charcot. Maladies des Poumons et du Système Vasculaire. Tome v. des Œuvres complètes. Un beau volume in 8° de 640 pages, avec 51 figures dans le texte et 2 planches en chromo-lithographie.

Das Höhenklima in meteorologischer, physiologischer, und therapeutischer Beziehung. Von Dr. August Ladendorf in St. Andreasberg. Erster Teil: Das solare Klima. — Das Höhenklima. Berlin. 1889.

The Morton Lecture on Cancer and Cancerous Diseases, delivered at the Royal College of Surgeons of England, on Thursday, November 29, 1888. By Sir Spencer Wells, Bart. F.R.C.S. London: J. & A. Churchill. 1889.

Wood's Medical Monographs. Volume I., Number I: The Pedigree of Disease. By Johnathan Hutchinson, F.R.S. Common Diseases of the Skin. By Robert M. Simon, M.D.; Varieties and Treatment of Bronchitis. By Dr. Ferrand

Exploration of the Chest in Health and Disease. By Stephen Smith Burt, M.D., Professor of Clinical Medicine and Physical Diagnosis in the N.Y. Post-Graduate Medical School and Hospital, etc. New York: D. Appleton & Co. 1889.

Electricity in the Diseases of Women, with special reference to the application of strong currents. By G. Belton Massey, M.D., Physician of the Women's Department of Howard Hospital, etc. F. A. Davis: Philadelphia and London. 1889.

Essentials of Physics and Chemistry. Written especially for the use of Students in Medicine. By C. W. Cutler, M.S., M.D., Physician-in-Chief of the New York Dispensary, etc. Fifth edition, enlarged and revised. New York and London: G. P. Putnam's Sons. 1889.

A New Procedure in cases of Anticipated Complete Rupture o the Perineum. By Edward B. Watson, A.M., M.D., Fellow of the American Academy of Medicine; Fellow of the Chicago Gynæcological Society; Member of the Medico-Legal Society of Chicago; Surgeon to the Chicago, St. Paul, & Kansas City Railway, etc.

Lectures on Nervous Diseases from the standpoint of cerebral and spinal localization, and the later methods employed in the diagnosis and treatment of these affections. By Ambrose L. Ranney, A.M., M.D., Professor of the Anatomy and Physiology of the Nervous System in the New York Post-Graduate Medical School and Hospital. Profusely illustrated with original diagrams and sketches in color by the author, carefully selected woodcuts, and reproduced photographs of typical cases. Philadelphia: F. A. Davis, Publisher. 1888.

Original Articles.

DISLOCATION OF CERVICAL VERTEBRÆ.

FIVE CASES; RECOVERY WITHOUT OPERATION.[1]

BY GEORGE L. WALTON, M.D.,

Clinical Instructor in Diseases of the Nervous System, Harvard University; Physician to the Neurological Department of the Massachusetts General Hospital.

The prevailing view among earlier writers, that vertebral dislocation uncomplicated by fracture was of the rarest occurrence, if not impossible, has been materially modified during the past twenty years, and it is now generally acknowledged that this injury is by no means uncommon.

The mobility of the cervical vertebræ, together with the inclination of their articular surfaces towards the horizontal, render this region the common seat of simple dislocation, and it is probable that the list of recorded cases in this locality would be considerably lengthened were it not for the fact that many cases terminating favorably pass unrecognized through lack of familiarity on the part of the practitioner with the characteristic features, perhaps also through hesitation in making a diagnosis of so serious import. The prognosis, however, of cervical dislocation, as shown by Ashurst's tables, is not necessarily grave, particularly when the displacement is unilateral, — only eight out of twenty-nine cases of this variety there recorded having proved fatal; four having recovered without an attempt at reduction.

Since forwarding the title of this paper as it appears in the Programme,[2] three additional cases of cervical displacement have been brought to my notice, all terminating in recovery (as regards life) without operation. I shall therefore present these cases briefly before describing in detail the two which it was originally intended to report.

Of these five consecutive cases which have been treated at the Massachusetts General Hospital, two (one unilateral, the other bilateral) are practically well, with scarcely any deformity and no paralysis; a third (bilateral) with only a moderate irregularity of the vertebral column; a fourth is out and about, though with the head bent to one side and twisted in the manner characteristic of unilateral dislocation and with paralysis causing partial disablement; the fifth with the head in a similar position, and with progressive paralysis of an upper extremity which points to pachymeningitis, on account of which the prognosis is less favorable than in the other cases.

Reduction was attempted in one only of these five cases, and in this case it was unsuccessful, although spontaneous replacement occurred later.

The two cases which I shall first present briefly are of comparative rarity, in that dislocation was present with practically no paralysis.

Case I.[3] M. D., under the charge of Dr. M. H. Richardson at the Massachusetts General Hospital, six years old, is said to have fallen, twenty-five days before admission to the hospital, an unknown distance from a tree, striking on his head. He was unconscious for a short time. The head was bent forward on the breast, and deflected to the right side, the neck being held stiffly. Considerable swelling of the back of the neck followed. There was pain locally and over the occiput. There is said to have been some slight difficulty in swallowing, and some impairment in speech for two or three days after the injury, but no other symptoms. There is no history showing a likelihood of previous cervical caries. The patient is a well-nourished child. The following notes are taken from the hospital records: — There is considerable swelling on the back of the neck, the neck is held stiffly, the head bent forward on the breast. There is a local pain and tenderness. Movement of the neck unaccompanied by the body is impossible. There is a marked bony projection, apparently of the posterior arch of the fourth cervical vertebra. Through the mouth a projection of bone into the pharynx is felt. There is no trouble in deglutition; there are no paralytic symptoms whatever. Five days after admission he had retention of fourteen hours, relieved by a hot bath. The swelling over the neck lessened under rest in bed, and the pain disappeared. At the end of three weeks the swelling and flexion of the head disappeared, but the prominence was still felt in the neck, as well as the projection in the posterior wall of the pharynx. These were present when he was discharged, four weeks after admission into the hospital.

Case II. C. E., seventeen years of age. Referred by Dr. Mulligan, of Milford, to the Massachusetts General Hospital, where he was seen by Dr. J. C. Warren, at whose suggestion I examined him later at his home, when practically recovered. One year ago he fell from a trapeze about eight feet, striking the top of his head. Displacement of the neck followed, the head being bent forward on the chest and to the right, so that the chin nearly reached the shoulder. It was impossible to move the head without the body. There was pain and sensitiveness in the back of the neck. There was no trouble in deglutition, respiration, or micturition, no numbness or motor paralysis from the first. The head returned to its present position within three months. The head is now held somewhat stiffly forward, and there is an apparent shortening of the neck. Lateral motion is somewhat limited in both directions, and there is a tendency to turn the body with the head. There is a marked prominence over the fifth cervical vertebra; the third and fourth cannot be made out. The general condition of the boy is that of perfect health, and he is able to work as before.

The following is a typical case of unilateral dislocation, followed probably by pachymeningitis giving rise to paralysis of one arm, at present increasing: —

Case III.[4] F. L. applied for treatment at the Nervous Out-patient Department of the Massachusetts General Hospital, in August of this year. Dr. Putnam, who recognized the nature of the case, kindly referred him to me for examination. The patient, a boy of eleven, fell about eight months ago on the ice while skating, and struck on the back of his head, which was thrown forward and turned to the left. There was no trouble in deglutition or respiration. No paralysis was noted until about three months ago, when weakness appeared in the left hand. This has gradually increased. and there is now a marked impairment in all the movements in the left arm and shoulder. the patient being unable to place his hand on his head, to grasp firmly, or to approximate the thumb and little finger. He now complains of severe pain in the back of the neck, running up into the head; there is some tenderness over the region of the fourth cervical vertebra and above. The head is held stiffly to the left, the chin being depressed towards the left shoulder. The muscles are quite tense on the right and comparatively lax on the left. Rotation and flexion of the head are possible only in a very slight degree. There is a prominence over the fourth cervical vertebra; a prominence, which appears to be the spinous process of the second, is found to the right of the median line. There is atrophy of the scapular muscles, most marked on the left.

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[1] Read before the American Neurological Association, at the Congress of Physicians and Surgeons, Washington, September, 1888.

[2] Dislocation of Cervical Vertebræ. Two cases; Spontaneous Recovery.

[3] Two views in lower right-hand corner of illustration.

[4] Two views at left of illustration.

In marked contrast to these cases, as regards paralytic symptoms, are two cases which formed the original subject of this paper, and which I shall present more in detail.

The first of these cases was one of typical bilateral dislocation, the third cervical vertebra being dislocated forward on the fourth, paralysis of all extremities following, as is commonly the case, through pressure of the posterior arch on the spinal cord. The interesting feature is the fact that spontaneous replacement and recovery ensued after failure of operative interference, and after progressive paralysis and enfeeblement lasting over a period of fifteen months.

CASE IV. A. W., cook, single, thirty-five years of age, was admitted to the Massachusetts General Hospital in the service of Dr. J. C. Warren, with whom I saw him from time to time during his stay. He was seen also by a number of other physicians, including Dr. J. J. Putnam and Dr. M. H. Richardson.

The history was as follows: — On January 3. 1885, he fell down a flight of steps backwards, striking his neck on the edge of a doorpost. His head was thrown forward with the chin elevated, in which position it remained up to the time of entrance. He lost consciousness for six hours, and remained in bed about one month, complaining principally, apart from the displacement and rigidity of the head, of general weakness, numbness, and stiffness of the legs when getting up, and a slight twitching in the hands. There was no trouble in breathing from the first. He entered the hospital March 30th, about two months after the accident. He complained at that time of pain in the shoulders and across the back, and of gradually increasing weakness. The head was projected forward with the chin elevated. There was a marked prominence over the fourth cervical vertebra; above this point the spinous processes of the vertebræ were less prominent than normal. Digital examination of the throat showed a projection in the posterior pharynx. The patient was able to walk, but with a spastic gait. Ankle clonus was present; the patellar reflex was so greatly exaggerated that tapping the tendon produced a continuous clonus. Respiration was normal. There was at that time no objective disturbance of sensation. The grasp was weak on both sides, as well as extension of the wrist. The supinator longus was strong, as were the muscles of the upper arm, excepting the triceps on the left, which were feeble. There was no marked reflex in the arm. Every attempt at movement of the legs caused tremor. Flexion and extension of the thigh was fair on both sides; the tibialis anticus and gastrocnemius were fairly strong; the peroneal muscles weak. The legs were rigid; there was no atrophy or coldness. The plantar, abdominal, and cremaster reflexes were normal. The pupils were equal and reacted to light; there was nothing abnormal about the face. The respiration was 20, the pulse 86, the temperature normal.

Three days after, operation was undertaken by Dr. Warren. The patient was etherized; the cervical vertebræ was extended by pulling the head in one direction and the body in the opposite. No distinct snap was felt, but the prominence of the vertebræ was considerably diminished. The neck was held in position by bandaging the head and body to a broad leather splint. The second day after the operation there appeared to be an improvement in the patient's condition; the grasp was stronger and the ankle clonus less marked. On the fourth day the apparatus was omitted. On the sixth day careful examination by myself showed no improvement over his previous condition. On the sixteenth day the patient was gradually losing ground; he was growing feebler, and the cervical prominence, together with the peculiar manner of holding the head, had returned. Sensation was impaired in legs and arms. One month later the condition was not changed, excepting in the direction of increased feebleness. After two months the patient could not stand on his feet without assistance. After two and one-half months the head of the bed was elevated, and extension was applied to the neck with halter and weights. This apparatus was removed five days later. At the end of three months the patient was gradually failing. Bladder symptoms had appeared in the form of retention. There was tonic spasm of the legs. Sensation in the legs was lost to the groin, and in the arms to the middle of the upper arm. Four months after operation the patient was completely helpless and unable to grasp anything firmly in the hand; he was much troubled by constipation, and suffered at intervals from retention, which required the use of the catheter. At the end of four months and one-half further surgical interference was considered unadvisable, and he was discharged from the hospital, but was allowed to remain at the Convalescents' Home until ten months after the accident, when he was taken to the Almshouse, where he remained without improvement for three months longer. At the end of this time, that is, about fifteen months after the accident, while taking a lukewarm bath, ice-cold water being meantime thrown upon his back by a syringe, he suddenly felt a sensation like an electric shock. He was rubbed down and put to bed, and the galvanic current was applied to all extremities.

The next morning he found he could rise in bed. Cold water was thrown after this in large quantities on his back every other day, after which the galvanic battery was applied. Improvement was steady and rapid, and within a month he was at work in a restaurant, where he was seen by Dr. Richardson. The head had become gradually replaced during this time. No further symptoms appeared.

I examined the patient carefully three years after the accident. The gait was normal and free, the tendon reflex was normal; there was no rigidity nor ankle clonus; all movements of the extremities were perfect, and the lightest touch was everywhere felt. The head was held rather stiffly, canted slightly to the left, with the chin elevated and turned to the right, the whole head being held somewhat forward. The fourth and fifth cervical vertebræ were rather prominent, though no more than is sometimes found in health. The spinous processes above were distinctly felt; there was no prominence in the posterior pharynx.

The duration of life and final recovery in this case are quite remarkable. Liddell,[5] under the subject of bilateral dislocation of the last five cervical vertebræ, in discussing the question of operation, says: "In pursuing such a course (operation) I would be guided by the following considerations: — (1) *The almost complete certainty of a fatal termination within two or three days if an expectant plan of treatment be followed.* Of thirty-six perfectly analogous cases treated at Guy's Hospital *all died within seventy-two hours.* . . ."

That respiration was unaffected is not unique, a fact probably due to the departure of the roots of the fourth cervical nerve from the cord above the articulation of the third and fourth vertebræ. This is illustrated by the case of Cushing, quoted by Shaw,[6] in which a patient lived two days after dislocation of the third or the fourth cervical vertebra. The rule is, however, as stated by the same author (Shaw), that where the cord is crushed above the level of the fourth cervical vertebra, that is, above the origin of the phrenic nerve, it may be considered certain that instant death will ensue.

The last case is one of unilateral dislocation of atlas on the axis, produced by violent muscular exertion in wrestling. I saw him, for the first time, one year after the accident, when he was sent to the neurological department of the Massachusetts General Hospital for an opinion, by Dr. H. W. Boutwell, of Manchester, N. H. Dr. Warren saw him with me in consultation at the hospital, and considered it an undoubted case of dislocation. I afterwards saw him in Manchester with Drs. Boutwell and Wilkins.

Case V.[7] L. C., forty-four years of age, a weaver. The patient is a stout man of short stature, but unusual muscular development. While wrestling, about a year ago, he put up his right hand to throw off his opponent's arm, which was about his neck, his own head being bent at the time to the right. He made a violent effort, and as he did so suddenly felt dizzy and heard something snap, as did also the bystanders; he immediately found that his head was fixed on one side (to the right). He did not lose consciousness. When given a glass of water shortly after, he found he could not swallow. His articulation was indistinct, he "talked thick," but had no difficulty in choosing words; he does not think he talked through his nose, but as his speech is still decidedly nasal, without his realizing the fact, this condition probably obtained at the time of the accident. About an hour and a half afterwards, on trying to eat, he found that food caught between the teeth and the cheek on the right, and that when caught he could not remove it with the tongue; liquids ran out at the nose. The physician who was summoned about an hour and a half after first noticed that the tongue was deviated to the right. There was no trouble in breathing from the first. The patient was unable to whistle, which he could do perfectly before. There was constant tinnitus auris dextræ for some time. There was a large protrusion over the triceps which gradually subsided (rupture ?), but a weakness of the right arm has persisted.

Physical Examination. — The patient is a stout man of excellent muscular development. The gait is normal. There is no paralysis of the lower extremities, motor or sensory; the skin is everywhere natural, and the flesh well nourished; there is no rigidity; the tendon reflex is active, but not exaggerated; there is no ankle clonus. The grasp of the right hand is not quite as strong as that of the left, and the same is true in a slight degree of all the movements of the right arm, though there is no localized paralysis, wasting, or coldness, and no disturbance of electrical reactions. The head is held stiffly bent to the right, with the chin turning somewhat to the left, the face looking downwards, the position being somewhat similar to that produced by contracture of the right sterno-cleido mastoid muscle. This muscle is, however, quite lax, as are all the muscles of the neck on the right side, while those on the left are comparatively tense; this is quite apparent in the photograph. The head, besides being bent to the right, is set off, as a whole, to the left, as is also apparent in the photograph, especially the posterior view. Attempts to straighten the head forcibly cause pain under the occiput on the right side, a point which seems somewhat sensitive to pressure. A certain amount of rotation of the head is possible, principally to the right. The extreme excursion of the end of the nose is, however, only three and one-quarter inches. Flexion and extension of the head are practically impossible. No weakness is detected in the sterno-cleido mastoid or trapezius; no prominence is felt in the fauces, nor depression over the spinous processes of the vertebræ. The tongue is deviated markedly to the right and cannot be moved to the left; it is also greatly atrophied on the right side, comparatively few fibres being left. The electrical reaction on the left side of the tongue is normal; on the right there is only very slight reaction to the faradic current, the response being apparently that of a few intact fibres. The uvula is deviated to the left, and the right side of the palate reacts only slightly to mechanical stimulus. The speech is thick and somewhat nasal in character. The patient can now whistle, though not perfectly; there is still some difficulty in mastication, the food lodging in the cheek on the right. The forehead wrinkles normally and the eyes shut well, there being only a trace of paresis remaining in the facial muscles, all of which react perfectly to the faradic current. Movements of the eyes are perfect. The right pupil is slightly larger than the left, and reacts less promptly to light. Vision is good in both eyes; the fundus is normal. There is no loss of sensation in the face or elsewhere. The watch is heard at a distance of four inches on the right, of ten inches on the left. Both drumheads are retracted, the reflex dull on the left, and broken on the right; bone conduction is normal. Examination of the vocal cords is impossible on account of the elevation and immobility of the back of the tongue. There is no special rigidity or exaggerated reflex condition of the right arm, but the muscles are not quite as firm as those on the left; the right forearm measures, however, the same as on the left and the upper arm a quarter of an inch more.

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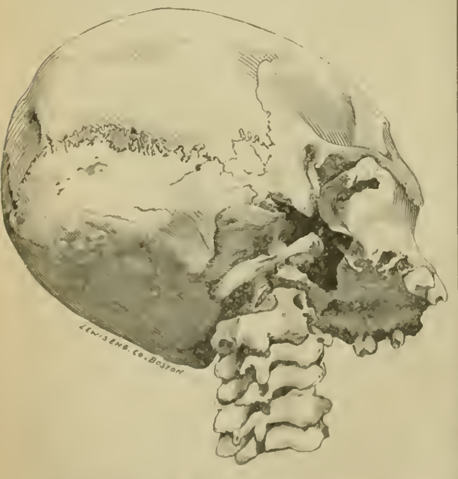
[5] International Encyclopædia of Surgery, Ashurst, 1884, vol. iv.
[6] Holmes's System of Surgery, 1881, p. 807.
[7] Two views in upper right-hand corner of illustration.

The lesion in this case was probably a unilateral dislocation of the atlas on the axis, which "consists essentially" (Liddell)[8] "in the displacement of the inferior articular process on one side of the cervical vertebra from the corresponding superior articular process of the vertebra which lies next below; this causes the victim's face to be turned towards the side opposite to that on which the luxation is situated."

The diagnostic features correspond closely with those described by the same author, and consist in the twisting of the neck, the fixed position of the face with the chin pointing towards the left shoulder (the luxation being on the right), the immobility, and the tenseness of the muscles on one side of the neck, combined with relaxation of those on the other side. Paralysis of an arm, and sometimes of the lower extremities, may also occur in greater or less severity; in our case the paralysis of the right arm alone being observed from the first, and this slight in degree. I have found no record of paralysis of cranial nerves like that from which this patient has suffered; the cause being probably, in this case, an extensive effusion in the region of the medulla, pressing on the hypoglossal, glosso-pharyngeal, facial, and auditory nerve-roots.



The position of the head resembles very nearly that of the skull in the accompanying photograph, which I was able, through the kindness of the curator, Dr. Whitney, to obtain from a specimen in the Warren Anatomical Museum at the Harvard Medical School, which was called to my attention by Dr. J. C. Warren. The description in the catalogue is as follows: —

"970. Vertebræ. Fracture of the second left articulating process of the vertebra, with dislocation of the atlas (co-ossified to the skull) downwards and to the left. The two vertebræ firmly united in the new position, and the head tipped to the left at a considerable angle. A young adult. One of the incisors had not completely come down, although the skull is evidently of an adult. — J. Mason Warren Collection."

Unfortunately the ante-mortem history of this case is not known, the skull having been purchased in Paris by Dr. J. Mason Warren. The intact odontoid process is plainly seen in the posterior view, and it is evident that, notwithstanding the extreme lateral displacement, a canal was left sufficient for the passage of the spinal cord. That such a canal was left in our case is evident from the absence of paralysis of the extremities, excepting in a slight degree in the right arm, and from the fact that respiration was unimpaired. The transverse ligament cannot have been ruptured, as the escape of the odontoid process causes instant death by pressure on the cord, the unfortunate victim being practically pithed. Our case differs from that of the anatomical specimen in that there was probably no fracture, but a simple unilateral dislocation, and also in that a false joint has been formed, allowing some lateral rotation, whereas in the anatomical specimen the bones are firmly fixed in their new position. Quite extensive hemorrhage probably accompanied the dislocation in our case, as it can hardly be supposed that the paralysis of cranial nerves resulted from direct pressure. The difficulty in swallowing resulted, perhaps, in part from mechanical obstruction in the pharynx, although it is probable that the glosso-pharyngeal nerve was involved in the hemorrhage; indeed it is not improbable that the paralysis of the palate results from injury to this nerve, which it has been suggested, may furnish the fibres (generally credited to the facial) which pass through the Vidian, and supply the levator palati and azygos uvulæ. That the hypoglossal and facial nerves were included there can be no doubt, as the paralyses resulting have in great part remained permanent. It is notable that the auditory nerve suffered so little, the only evidence of its implication being the tinnitus aurium and temporary increase of deafness in the right. The deafness now existing in the right ear, like that in the left, is that which would be expected from chronic catarrh, the bone conduction being equally good on both sides, with a tendency in the direction of increase.

Unfortunately, apparatus has not been at hand during the examinations I have been able to make, to test for various tones, or for high tones, or possibly some defective fibres might have been detected.

The recovery in this case as in the other unilateral cases, is less remarkable than that of the patient with bilateral dislocation, the prognosis in these cases being, as already stated, much more favorable on account of the spinal cord being less liable to damage.

Perhaps the most interesting feature in the case is its ætiology, the manner in which the dislocation was produced being probably unique. The causes mentioned in the tables above referred to consisted in turning the head quickly, falling on the head, falling on the neck, a bundle slipped on the shoulder, a fall in running, direct violence, being thrown against a wall, tumbling heels over head on a bed.

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[8] Ibid., p. 782.

It is not improbable that an attempt at early reduction would have produced a more favorable result, but in consideration of the absence of imminent symptoms, and considering also the comparatively favorable course of cases of unilateral dislocation without operation, the patient is perhaps quite as well off as if operation had been attempted. Whether the nature of the trouble was recognized at the time of the accident I do not know.

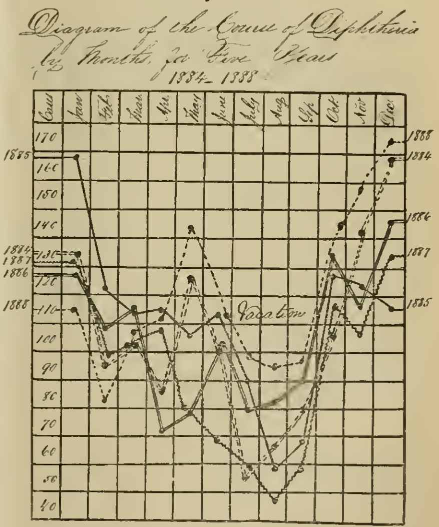
OBSERVATIONS ON DIPHTHERIA IN BOSTON DURING THE YEAR 1888.[1]

BY J. H. MCCOLLOM, M.D.

It is known that diphtheria has been quite prevalent in the city during the past year; but it is not so well known that it has been very generally distributed throughout the *whole extent* of the city. That imperfect drainage and poor hygienic surroundings have much to do with the prevalence of the disease is admitted; but an additional factor is required to explain the dissemination in localities which have been hitherto comparatively free. This factor is contagion; not so much from the severe and recognized forms of the disease, as from the mild and unrecognized types, particularly the nasal. The children who have this form of the disorder are often apparently well, attend school, are brought in immediate relationship with other children and communicate the disease to them. In many of these cases an absolute diagnosis is impossible, for there is nothing to be seen in the throat; and there is only a small patch of membrane to be found in the nose. This is transient in its nature, and by the time a physician is summoned there may be no positive trace of the disease.

It frequently happens that the youngest child, too young to attend school or be much in contact with children outside of the family, is attacked with a severe form of the disease, and the question immediately arises as to the source of the contagion. Careful investigation reveals the fact that a short time previous an older child was ill with what the parents considered to be a severe cold, but which was probably a mild attack of diphtheria, and the origin of the disease in the younger child. Of course this is not capable of absolute demonstration, but as it has occurred so frequently the past year, it would seem to be a very important element in explaining the prevalence of the disease. In support of the theory of contagion from ambulatory cases, the following statistics show that, during the ten months of the year when the schools were in session, the number of cases reported was far in excess of those reported in vacation.

A mild and unrecognized case of any contagious disease is far more dangerous to the public than a severe case; for the latter is recognized, and proper precautions are taken, while in the former there is nothing done. Experience has shown this to be true in innumerable instances in cases of small-pox and scarlet fever. During the year 1888, in the month of January, there were 110 cases of diphtheria reported; in February 77 cases; in March 102; in April 106; in May 139; in June 108; in July 94; in August 91; in September 92; in October 143; in November 153; in December 168 cases. It will be seen from this that the disease was most prevalent in January, March, April, May, June, October, November, and December, or while the schools were in session; and that there was a marked diminution in July and August, or during vacation. In February, it is true, there was a smaller number than during any month in the year. This is the only instance in which there was a diminution in the number of cases during term time. The same relative frequency of the disease has been observed each year for the past five years; and would seem to show that this increase could not be a mere coincidence.



No. 1.

	1888	1887	1886	1885	1884
January	110	128	122	164	130
February	77	93	104	117	90
March	102	96	110	108	97
April	106	103	66	109	81
May	139	75	73	101	122
June	108	68	95	108	95
July	94	53	75	85	50
August	91	41	78	54	61
September	92	53	85	64	75
October	143	112	130	123	132
November	153	101	111	119	137
December	168	130	141	111	163

A glance at diagram No. 1 shows that while there is a certain irregularity in the course of the disease during the first five months of the year, there is invariably a marked increase in October. Meteorological conditions certainly cannot explain this fact.

A study of diagram number two, which indicates the total number of cases of diphtheria for five years, by months, with the average mean temperature for the same time, proves that although there is a decrease in the number of cases in warm weather, this diminution does not become marked until vacation time; and also that although there is a sensible decrease in the first four months of the year the variations in the temperature are so slight that they cannot be considered important agents in causing this diminution. Again, there is an increase in the number of cases in May, and at the same time there is a higher temperature. It is a still more interesting fact that the greatest increase in the number of cases is from the middle of September to the middle of October, when there is a difference of only ten degrees in the average mean temperature.

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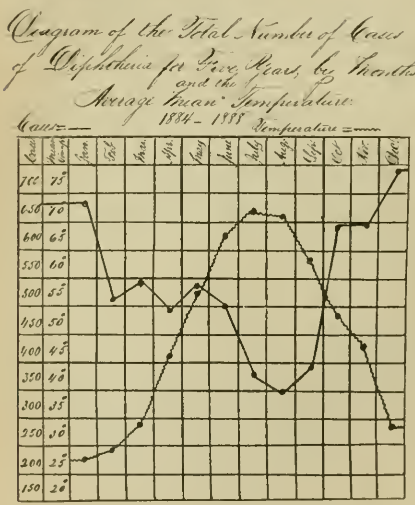
[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, Feb. 13, 1889.



No. 2.

January,	654	cases	Temperature	25	degrees.
February,	481	"	"	27	"
March,	513	"	"	32	"
April,	465	"	"	44	"
May,	510	"	"	55	"
June,	475	"	"	65	"
July,	357	"	"	69	"
August,	325	"	"	68	"
September,	369	"	"	61	"
October,	610	"	"	51	"
November,	621	"	"	46	"
December,	713	"	"	32	"

In the Eleventh Annual Report of the Board of Health in this city, Mr. Ernest W. Bowditch published some very interesting investigations regarding the prevalence of diphtheria in East Boston from January, 1878, to December, 1882. He found that there was a marked diminution in the number of cases during vacation. This same observer also found that imperfect drainage did not seem to have any important bearing on the causation of the disease. An examination of his map shows that the disease was very generally disseminated throughout the whole of the district, and also, that it was even more prevalent in ward 1, the more elevated portion of East Boston, than in that section bordering on the flats.

Dr. Henry B. Baker, in investigating an epidemic of diphtheria that occurred in Lynn, shows that there was a marked falling off in the number of deaths when the schools were closed.

In regard to the effect of the soil upon the causation, Maier says: "The nature of the soil does not exert that influence in the production and propagation of the disease which has been ascribed to it by various persons. According to the generally accepted idea, damp, low lands, bogs, and marshy regions with poor drainage, the country near stagnant bodies of water, half-dried river-beds, and places where, in a word, the poisonous decomposition of organic matter is prevalent, all these favor diphtheria; while on high, dry lands the disease as a rule appears somewhat more rarely, and does not extend so widely. Still, although at times the influence of such local conditions appears to be especially marked, yet statistics show that diphtheria, after all, is not to be wholly gotten rid of by any peculiarity in the local conditions, nor can these peculiarities even exert a material influence in diminishing the intensity of the epidemic. In England the disease passed through the marshy lands of Essex and Yorkshire, crossed the fertile regions of Devon, and those of Cornwall which are but little cultivated, and over which the sea-breeze sweeps freely, appeared on the banks of the Thames, reached the heights of North Wales, and disappeared in the Cornish mines. In Holstein the disease has been observed with almost the same frequency (Bartels) in the swamp districts and on the dry highlands, on the moist clay and the dryest sand. Even the sea-coast exerts no influence for or against it; for while the regions near the coast of the North Sea have been visited by comparatively few cases of diphtheria, in certain parts of the Baltic coast the number has varied very greatly; for instance, in Kiel and its neighborhood there were very many cases, while in other places there were almost none at all. It is more than doubtful whether the geological position of the place influences the epidemic appearance of diphtheria; or whether the chalk-formation proves more favorable to its development than the marl-formation."[2]

"Dr. C. W. Earle, of Chicago, has prepared an interesting statistical paper on the occurrence of diphtheria in salubrious rural localities, free from sewage gas and water pollution. The statistics collected show that this disease is as severe and fatal in the salubrious localities of the newly settled and mountainous States and Territories of the North-West, where it happens to be introduced, as in the foul air of the cities. But dampness and decomposing animal and vegetable substances in rural localities, as in the cities, afford a nidus favorable for the propagation of the diphtheritic germ, and therefore increase the prevalence and malignancy of diphtheria."[3]

Dr. Steinberg, in a recent valuable prize essay, says: "It is chiefly by exposure of the children to the sewer gas, carrying with it the diphtheritic germ, which ascends from this widely extending underground culture-bed, and to walking cases, often so mild that there is little or no complaint of the throat, or impairment of the general health, that this disease is so prevalent. Children with this mild form of the disease sit among other children in the schools, in the city conveyances, in the churches, and in the dispensaries, and not unfrequently communicate a malignant form of the disease, from which the unfortunate victims quickly perish. The germ of diphtheria is of such a nature, and quickly becomes so established in a sewered city which it enters, that it probably never can be "stamped out" as cholera or yellow fever may be, by the active measures of health boards, or by legislative enactments, although these may do much in the way of protection."[4]

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[2] Vide Ziemssen's Cyclopædia of Medicine, vol. i. p. 582

[3] Vide Annual of the Universal Medical Sciences, 1888, vol. iv. p. 303.

Dr. Lancey cites cases to show that the area of contagiousness is small, limited to a few feet. Dumez states that in a school the boys and girls in the same hall were separated by an open space a few yards wide. Diphtheria prevailed among the girls, but did not affect the boys. Other instances are cited showing that the area of contagion, like that of scarlet fever, is within narrow limits, and unlike that of pertussis and measles. The latter diseases, when they enter a domicile or asylum, usually affect all the unprotected children, so wide or so far extending is their contagiousness.[5] In regard to the relative degree of contagiousness, experience seems to demonstrate that diphtheria should occupy a place between measles and small-pox among the vaccinated. Small-pox among the unvaccinated, measles, scarlet fever, diphtheria, and, separated by a wide interval, small-pox among the vaccinated, is the order in which these diseases should be placed as to the degree of contagiousness. The extent of the area of contagiousness has a very important bearing on the subject of isolation. It is comparatively easy to isolate a case of diphtheria in a house occupied by one family, and in an apartment house, or one of the model lodging-houses, while it is practically impossible to do this in the ordinary dwelling-house used as a tenement house and occupied by four or five families.

During the past year there have been 1411 cases of diphtheria in Boston and 470 deaths from this disease; with a percentage of mortality of 33.3. Of these 1411 cases, however, twenty-eight were imported, making the actual number of cases occurring in this city 1383. The disease has been of an extremely malignant type, as will be seen from the high percentage of mortality. For the five years ending with 1882, there were 7318 cases, with a yearly average of 1463.6. The deaths were 2486, an average of 497.2, with a percentage of 33.971, a greater average number of cases than during the past year, with a smaller population. For the five years ending with 1887 there were 6127 cases, a yearly average of 1225.4; 1769 deaths, with an average of 353.8 and a percentage of 28.872.

In ward 1, with a population of 17,208, there were, in 1887, 43 cases of diphtheria. In 1888, 63 cases, 37 cases of scarlet fever and 19 cases of typhoid fever. The drainage was found defective in 32 instances.

Ward 2, which is quite low and damp, the tidewater flowing into many of the cellars, with a population of 15,876, had 40 cases in 1887, while last year there were only 17, a marked diminution. Neither have scarlet fever and typhoid fever been prevalent during the year in this locality. There have been 22 cases of the former disease, and 23 of the latter. Drainage was reported as defective in nine instances. In these wards (East Boston) the source of contagion could be traced in 15 instances. It is of some interest to notice that as the cases of diphtheria increased those of scarlet fever diminished.

Ward 3, with a population of 12,775, had in 1888 15 cases of diphtheria; while in 1887 there were 34 cases. No particular locality seemed to be infected. Out of 15 examinations defective sanitary conditions were found in 10 cases.

In ward 4, with a population of 13,265, there were, in 1887, 21 cases of diphtheria; 32 cases in 1888; 52 cases of scarlet fever, and 34 cases of typhoid. This section is not particularly crowded. Out of 22 examinations defective drainage was found 15 times.

Ward 5, with a population of 13,065, had in 1887 24 cases of diphtheria, and in 1888 there were 27 cases. In about 50% of the houses examined, defective drainage was found. In the three preceding wards the source of contagion could be traced with a comparative degree of certainty in 19 cases. In this locality there were five more cases in 1887 than in 1888. From the very general dissemination of the disease throughout the whole extent of Charlestown it is evident that imperfect drainage cannot be considered an important factor in the causation, for we find that the elevated portions suffered quite as much as, if not more than, the less salubrious districts.

The population of ward 6 is 14,868. This ward is composed almost entirely of tenement houses, has many narrow streets, and a very small area. In 1888 there were 126 cases, and in 1887, 49 cases. In this locality we should expect to find a large number of cases of scarlet fever and typhoid fever; there were, however, only 52 cases of typhoid and 27 cases of scarlet fever the past year. Out of 106 examinations in only 40 cases was the drainage found to be imperfect.

In the 7th ward, which has a population of 12,996, 85 cases of diphtheria were reported in 1888, and 56 in 1887. Of scarlet fever and typhoid fever, 13 and 42 cases respectively. Nearly the same condition, so far as tenement houses are concerned, exist in ward 7 as in ward 6. Forty-three examinations showed defective drainage in 21 instances. In this and the previous ward the source of the disease could be traced in about 45 cases; a large proportion occurring in the members of the same family; but there were many instances where the disease was communicated to the members of other families occupying the same house.

Ward 8 has a population of 15,562. There were 35 cases of diphtheria in 1888, and 47 in 1887. In this ward there are crowded tenement houses and a good class of dwelling-houses in equal proportions. Typhoid fever and scarlet fever were not very prevalent. About one-half of the houses examined had defective drainage. In 15 cases the source of the infection could be traced.

In ward 9 there were 13 cases of diphtheria in 1888, 22 cases in 1887. There were 32 cases of typhoid fever. There were six reports of imperfect drainage. In only four instances was it possible to trace the source of the contagion with any degree of certainty. The population of this ward is 12,844.

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[4] Ibid., p. 304.
[5] Ibid., p. 307.

Ward 10 has a population of 11,940. In 1888 there were 16 reports of diphtheria. Six in 1887. In only one instance was imperfect drainage found. The source of the contagion was traced in four cases.

In the 11th ward, with a population of 22,083, where on general principles we should expect to find very few cases, we have, in 1888, 33 cases reported, and in 1887, 31 cases. In 31 examinations, imperfect drainage was found in 9. There were, however, 53 cases of typhoid and 32 of scarlet fever. Direct infection could be traced 8 times.

Ward 12 has a population of 13,948. In 1888 there were 27 cases of diphtheria, and in 1887, 10 cases were reported. The disease was not confined to any particular locality in the ward. Twenty-seven examinations revealed imperfect drainage in 16 houses. Contagion was traced in only five instances.

In wards 13, 14, and 15, with a population respectively of 23.253, 23,726, 16,353, containing all sorts of dwellings, a great difference in elevation, a marked diversity of soil, we find a diminution in the number of cases of diphtheria. In 1888 there were reported 42, 47, 52; in the year 1887, 44, 56, 56, cases respectively. An examination of 70 houses revealed imperfect drainage in 44. In 27 instances the infection could be traced.

In ward 16, in area one of the smallest if not the very smallest ward in the city, eighth in size as regards population, having 19,651 inhabitants, we have 71 diphtheria cases in 1888, and 30 in 1887. A large number of the houses in this ward belong to the class of dwellings in which we should expect to find the disease most prevalent; formerly private residences, now used as tenement houses. Fifty-six examinations revealed defective drainage in 36 instances. A connection between a previous case and subsequent cases could be traced ten times.

Wards 17 and 18, population 16,304 and 14,510, show 33 and 41 cases in 1888; 37 and 21 in 1887. There seems to be no general law in regard to the distribution of the disease in these wards. Connection with a previous case could be established in 14 instances. About 50% of the houses examined in these wards were found with the drainage in an imperfect condition.

Ward 19, has a comparatively small area, but has the largest population of any ward in the city, namely 23,867. In 1888 there were 104 cases; in 1887 there were 85. As in the previous wards, the disease has been very generally disseminated throughout the district. Defective drainage does not seem to have been the most important factor in the causation of the disease in this ward, as the ratio of houses in which the sanitary condition has been found defective has been smaller than in many other wards. Seventy-three houses were examined and 60 were found in good condition. Thirty cases could be traced with a reasonable degree of certainty. If we look to soil-moisture and imperfect drainage for the cause of the prevalence of diphtheria, we are met by the fact that there has only been a small number of cases of typhoid fever, a disease dependent to a certain degree on defective drainage.

In Ward 20, with a population of 22,621, there were, in 1888, 95 cases reported, and in 1887, 61 cases; 42 and 34 cases respectively, of scarlet fever and typhoid fever. About two-thirds of the houses examined were found defective. No general law can be framed from the dissemination of the disease in this ward. In this district 15 cases could be definitely ascribed to preceding cases.

Ward 21 has a population of 18,357. In 1888 there were 41 cases; in 1887, 38 cases. The difference between the two years is so slight, that no deductions can be drawn from it. In 38 examinations, 16 houses were found to have imperfect drainage. No particular locality was infected. Typhoid fever was not very prevalent, 17 cases being reported. Scarlet fever was, however, quite common in proportion to the number of cases of diphtheria, there being 35 cases of the former disease. The general drainage of this section is good. Six cases could be traced.

Ward 22, with a population of 16,173, had 52 cases of diphtheria in 1888, 35 in 1887. The contour of the country is about equally divided between hill and vale. The inhabitants are not crowded. There were nine cases of scarlet fever, and twelve of typhoid fever. In this section, as in other portions of the city, the condition is the same; no particular locality seems infected. In 42 examinations, defective drainage was found 24 times; 16 cases could be traced with a moderate degree of certainty.

In Ward 23 the population is 20,106. In area it is the largest ward of the city, and also presents a greater diversity of conformation. Sewers are found in certain parts, while in other portions there is no attempt at drainage. In some districts the houses are in close proximity, and in others are widely separated. A comparatively small number of tenement houses exist. In 1888 there were 42 cases of diphtheria, and in 1887, 95. Scarlet fever 56 cases, typhoid fever 27 cases, in 1888. Nearly 50% of the houses examined were found defective in drainage. Eight cases were traced. There has been quite a marked diminution in the number of cases of diphtheria this year; but there has been a slight increase in the number of cases of scarlet fever.

Ward 24 has a population of 23,660. This ward has an extent of territory nearly as large as the previous ward. The natural formation of the land is very similar. The district is perhaps a little more thickly settled than West Roxbury, but nowhere can it be said to be crowded. There is considerable marshy land in this section: the southern and eastern border are drained by the Neponset river. There were 78 cases of diphtheria in 1887; 126 in 1888. Scarlet fever 53; typhoid fever 58 cases. Imperfect drainage does not explain the prevalence; and therefore we must look to contagion; 43 houses were found defective, out of 95 examined; 35 cases could be traced in the ward.

Ward 25, with a population of 10,139, is the smallest ward in regard to the number of inhabitants, and the third in area. The soil is in places somewhat clayey. The north-western portion is drained by the Charles river. Vaults and cesspools are common, while in certain parts sewers have been built the past year. There are comparatively few tenement houses. There were 148 cases of diphtheria in 1888; 25 cases in 1887; 38 cases of scarlet fever, and 20 cases of typhoid fever the past year. Imperfect drainage or full and offensive vaults have been found in 70 instances out of 126 examinations.

The theory advanced by some recent observers that diphtheria prevails more extensively in the vicinity of old water-courses and dry river-beds certainly is not tenable so far as this district is concerned; neither does the theory of defective drainage explain the prevalence of the disease, for in the first instance there are no old water-courses or dry river-beds in this locality, and in the second place the drainage the past year, when there has been a large number of cases, has been much better than in 1887, when there were very few cases. Contagion is, therefore, the only possible explanation for this condition.

From the opinion of the observers cited; from the fact that the disease has invaded districts where the sanitary conditions were remarkably good; from the fact that out of 1117 examinations in only 596 instances was defective drainage found; from the fact that the source of contagion could only be traced in 276 instances out of 1383 reported cases; and from the fact that there has been a marked increase in the disease when children were brought together in large numbers, — *it would seem that the general extension of the disease must be attributed to contagion; not from the recognized, but from the unknown and mild cases.* If this conclusion is not absolutely correct, it is perhaps worthy the consideration of the members of this society.

REPORT ON PROGRESS IN SURGERY.[1]

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

INFLATION OF THE STOMACH WITH HYDROGEN GAS IN THE DIAGNOSIS OF WOUNDS AND PERFORATIONS OF THIS ORGAN, WITH THE REPORT OF A CASE.

Senn [15] has again given us some interesting facts on this subject. He has performed a number of experiments on dogs, from which he concludes that it is more difficult to inflate the alimentary canal from above downwards than from below upwards. He has satisfied himself that great distention of the stomach constitutes an important factor in causing or aggravating intestinal obstruction, as it effects, by compression, which again causes impermeability of the intestines, or aggravates conditions arising from an antecedent partial permeability, by producing sharp flexions among the distended coils of intestines. For diagnostic and surgical purposes, the stomach can be readily inflated almost to any extent through a stomach-tube, and when it becomes necessary to ascertain the presence of a visceral wound or perforation of this organ, this method of inflation may be resorted to with advantage. He reports a case of pistol wound of the stomach which resulted fatally.

ENTEROSTOMY FOR ACUTE INTESTINAL OBSTRUCTION.

Supplementary to B. Farquhar Curtis's paper that appeared in the *Annals of Surgery* on "Laparotomy for Acute Intestinal Obstruction" is the present one, which considers enterostomy.[16]

In this he has carefully collected all of the recorded cases, and arrives at the following conclusions in regard to the comparative value of the two operations: —

1. The mortality for laparotomy is 68.9%. The mortality for enterostomy is 48.7%.

2. In enterostomy 4.8% of the sixty-two cases died because the operation did not relieve the constriction; but even in laparotomy 5.8% of the three hundred and twenty-eight cases died from the same cause.

3. Enterostomy restores the natural passage of fæces in 60% of the cases recovered; while even laparotomy preserves it only in 79% of the recoveries.

4. Laparotomy is therefore so very little better than enterostomy that, in consideration of its greatly increased risks, it is indicated only when the patient's condition is so good that he can bear the shock, and when the intestines are not so greatly distended as to offer a serious obstacle to a thorough exploration of the abdomen.

5. Under all other circumstances enterostomy should be performed, and if necessary this can be done without an anæsthetic. Laparotomy may be resorted to later, to remove the obstruction and to close the artificial anus.

6. Whichever operation may be chosen, it is necessary to operate early, for every delay greatly increases the risk of failure.

ON THE DIAGNOSTIC VALUE OF "BALLOONING OF THE RECTUM" IN CASES OF STRICTURE OF THE BOWEL.

As a contribution to the diagnosis of strictures of the rectum, Bryant [17] brings forward the symptoms of ballooning of the rectum, which he refers to in the following terms: —

The rectum in its normal condition is a collapsible tube, and when a surgeon introduces his finger through the sphincter into this tube, in its healthy state, he finds the walls of the bowel in contact, and these he has to separate to complete his examination. When a stricture of the rectum exists, this condition does not always hold, and the surgeon will often find, when his finger has passed the sphincters, that he has entered a cavity, the walls of which are expanded or "ballooned." In this cavity the surgeon will be able to move his finger freely, and the walls of the cavity will only be felt when searched for. The extent of ballooning will be found to vary in every case. When this condition of bowel is met with, the surgeon will be justified in more than suspecting the presence of a stricture, for I have never found this ballooning of the rectum to be present under other conditions than that of stricture. In cases of obstruction, complicated with symptoms which suggest the possibility of a stricture being their cause, this ballooning of the bowel becomes, therefore, a symptom of

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[1] Concluded from page 262.

[15] Med. News, Aug. 25, 1888.

[16] Medical Record, Sept. 1st, 1888.

[17] Lancet, Jan. 5, 1889, page 8.

some importance, and is one which should materially help towards the confirmation of the diagnosis of stricture. This observation holds good in all cases of obstruction in which the disease is beyond finger reach. I believe this condition of the lower bowel to be due, primarily, to the atrophy of its muscular coats, brought about by the arrest of all peristaltic action from above at the seat of stricture; and, secondarily, to the distention of the atrophied bowel by retained flatus. This state of the rectum seems to be in stricture of its upper segments what a patulous anus and the want of fæcal retention is in stricture of the lower segment. It is not met with in all cases of stricture, and particularly in those of rapid formation. It is, however, present as a rule in examples of chronic stricture, and should be looked upon as a characteristic symptom. So valuable has this fact been to me in my clinical work, that it has often enabled me to confirm a doubtful diagnosis, or to make one in cases in which much doubt had previously existed, and consequently to carry out a line of treatment with confidence.

CHOLECYSTECTOMY VERSUS CHOLECYSTOTOMY.

Considerable activity has existed in this field of surgery, and it is becoming a procedure which has passed out of the field of experimentation into that of statistical results.

A. Deparge[18] gives the following statistics of seventy-eight cholecystotomies.

Of these operations, 6 were done according to the method of Spencer Wells, 72 with suture of the gall-bladder to the abdominal wall. Of the first-named series, 3 died from acute peritonitis, 1 cured case was followed by recurrence, and 2 cases were completely cured. Of the second series there were 11 deaths, 5 from hæmorrhage and collapse, 2 from biliary retention, 2 from effusion of bile into the peritoneum, and 2 from undetermined cause; there were also 4 deaths from secondary complications. Amongst the "cures" are 24 cases of biliary fistula, some permanent. The number of cholecystectomies has been 22, with 2 deaths from obstruction of bile duct, and 1 after recovery from the operation from a cause independent of biliary lithiasis. Thus in cholecystotomy with suture of the gall-bladder, and its return free into the abdominal cavity, a mortality of 50% resulted; in cholecystotomy with suture of the bladder to the parietes, 15.27%; and in cholecystectomy, 9.99%; and as the last-named figure comprises the two cases of permanent occlusion of the common bile duct, the result, if they be excluded, is to greatly enhance the position of cholecystectomy as an operation to be preferred to cholecystotomy.

EXTIRPATION OF THE SPLEEN.

Dr. Robert Asch[19] has collected ninety cases of this operation, the first record bearing the date of the middle of the 16th century. Of these ninety cases, fifty-one recovered. At first the prolapse of the spleen through wounds of the abdomen furnished the only opportunity for the operation. Twenty-six of such cases recovered. No deaths are reported. He reports also thirteen recoveries from extirpation of wandering spleens, two from sarcoma and echinococcus, and three from splenic cysts. Of two cases of echinococcus cysts one recovery and one death. Of twenty-one splenic hypertrophies from malaria or other causes, only four recoveries. Of twenty-two leucæmic spleens only one recovery. Asch reports in detail the last two of these cases; operator Von Fritsch; one for a lympho-sarcoma; recovery; one for leucæmia; resulting in death from hæmorrhage. Notwithstanding the fatal results which have followed the removal of leucæmic spleens, on account of the hæmorrhagic diathesis, Asch does not consider that this condition contraindicates an operation, but claims that this should be done for this affection as well as for other cases of splenic tumor, and that such operation must be performed before the increase in size has exceeded certain limits.

ECHINOCOCCUS CYSTS OF THE SPLEEN.

Casanova and A. Poulet have reported their conclusions obtained from a careful review of thirty-two cases.[20] The cysts were found to develop, as a rule, slowly; they attained in some instances an enormous size, and are apt to become adherent to the surrounding organs, colon, diaphragm, stomach, and abdominal wall. The surgical procedures for their relief are —

1. Simple puncture, generally unsuccessful and in some cases dangerous.
2. Causation of adhesions and incision, now discarded.[21]
3. Extirpation of spleen with cyst.[22]
4. The incision of the cyst, either primary or secondary, gives the best results,[23] and is recommended by the writers.

A NEW "SUPRA-PUBIC" METHOD.

Rydygier,[24] being struck with the readiness with which wounds in dogs' bladders unite, explained the result by the fact that the suture in these animals was placed in surfaces covered with peritoneum, which caused the rapid union. He proposes to take advantage of this, and to operate on the bladder intraperitoneally. For the detail of this method, those interested are referred to the original monograph. It is possible that this method may be of advantage when the bladder can be immediately closed; but when operations on the bladder wall are performed, which are apt to be followed by intravesical hæmorrhage, its immediate closure by suture is undesirable, and in such cases it seems doubtful if it would prove to be of practical value.

RESTORATION OF THE BLADDER.

Professor Tizzoni and Alfonso Foggi in Bologna[25] have been experimenting with dogs for the purpose of developing a method by which an isolated loop of intestine can be substituted for an excised bladder. The attempt is reported as successful in one dog. The operation was completed in two sittings. At the first operation a freely movable portion of the small intestine, seven cm. long, was isolated by dividing it transversely, cleaned of its contents, and both ends closed. One end was fastened in front of the bladder neck. The resected ends of the intestine were united by a circular suture. Four weeks later the abdomen was reopened, the isolated loop found. It was well nourished through its mesenteric attachment, but much contracted. The ureters were separated from the bladder, the bladder cut away, the lower end of the intestinal loop opened by a transverse incision, and sutured to the resected vesical neck. The ureters were then fastened by suture to the sides of the intestine, and the abdomen closed. The new-formed bladder was drained through a soft rubber catheter inserted through the urethra. Result: At first incontinence of urine for several days. At time of publication the dog micturated hourly; amount about 10–14 c.c. General condition perfectly normal.

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[18] Jour de Med Brux., 1888, No. 24.

[19] Arch. f. Gynäkol., 1888, xxxiii. 1, p. 130.

[20] Revue de Chir., 1888, viii. 3, p. 206; 5, p. 393.

[21] Recamier.

[22] Koeberle, fatal; Bergmann, successful

[23] Von Volkmann.

[24] Wien. klin. Wchnschr., 1888, xxxviii. 15

[25] Centbl. f. Chir., xv. 50, 1888.

RADICAL CURE OF HYDROCELE.

An investigation[26] of the final results of fifty-one cases of hydrocele treated at the Tübingen klinik since 1877 by the Volkmann method (incision) shows that forty-five patients were permanently cured. Failure was known to have occurred in two cases only. One hundred and thirty cases collected from other sources show recurrence in 3 to 4%, against 8% in two hundred and ninety-nine cases treated by injection with iodine. The duration of treatment by the Volkmann method averaged 16⅔ days, the injection treatment much longer. Hence the incision method is recommended on account of the large percentage of recoveries, and the shorter period during which the patient is incapacitated for work. The method of injection by carbolic acid recently described by Keyes is not discussed.

COCAINE IN THE SURGICAL TREATMENT OF HYDROCELE.

M. Alezais[27] uses cocaine to diminish or obliterate the pain from the injection of hydrocele by tinct. iodinii. The tunica vaginalis is thoroughly evacuated. Then an injection of a two and a half grain to the ounce of cocaine is made, and is allowed to remain a few minutes in contact with the tissues that they may be completely anæsthetized. This is followed by an injection of a strong solution of iodine, which causes practically no pain.

VASCULAR SUTURES.

V. Horoch[28] finds by experimentation that a suture of arteries causes a clot formation, which finally occludes the lumen of the vessel as effectually as after ligation; the difference between the results following ligation and suture being that after ligation the occlusion is immediate, while after suture this is delayed for some time, and that the obstruction is limited to the site of the suture. Catgut failed as a material for such sutures. Silk is to be preferred. H. claims that an arterial suture is indicated where large arteries are injured, whose ligation experience has proved to be undesirable. Three attempts at vein-suture are reported as successful, the lumen remaining more or less free. The venous suture is to be preferred to lateral ligation, which usually results in occlusion from thrombus formation.[29]

TREATMENT OF WOUNDS WITHOUT DRAINAGE.

Rydygier, Krakau,[30] has tested this method at the Krakau klinic during the past winter semester, and obtained in forty-three cases, including operations for ligation of arteries, amputation of the breast, resections, amputations, and similar procedures, with only eight failures. In the latter cases no especial disaster resulted. He concludes that only such wounds should be so treated as can be considered free from all pathological material (a corroboration of the statements of Neuber and Schéde). Also that the most scrupulous disinfection should be made before the operation; that antiseptic irrigation during operation should be as infrequent as possible; and that the wound should be loosely closed, preferably by the Kürschner suture (a continuous suture). His dressing is iodoform and sublimate gauze intermingled (principally the latter), moistened with a one-tenth per cent. sublimate solution. Where "dead" spaces exist this layer is covered with gauze or cotton, to obtain light compression, and a final layer of dry sublimate gauze or cotton fastened in place with a bandage: either cotton or starched gauze.

ON WOUND HEALING BY BLOOD-CLOT ORGANIZATION.

C. Lauenstein, Hamburg, has contributed the result of his experience with the Schéde method of wound treatment. Of seventy-four cases he had only ten unsuccessful results (12.5%). The wounds were of all varieties, some the result of operation, some of traumatic origin. Lauenstein states that most of the cases were of a character that rendered primary union under one dressing impossible, except by the Schéde method. Cases where large defects either in bone or soft parts existed: these cavities were closed only by a blood-clot, which at the removal of the dressing (at end of from three to five weeks according to the size of the defect), was found to have cicatrized to the level of the surrounding skin. In tuberculous cases Lauenstein thinks that recurrence depends not on the manner of wound healing but upon the fact that the disease was not wholly recovered. Among the ten unsuccessful cases no deaths occurred. Two cases of erysipelas were the only complications. The failure caused the patient no especial danger. Since the wounds were in no case sutured the clots quietly broke down, and complication from retained secretions occurred. The wounds eventually healed by granulation in the usual way. The causes of failure, Lauenstein thinks, resulted from failure to perform a complete aseptic operation; failure to remove all portions of diseased tissue from the wound; failure to secure the necessary rest of the region operated upon. In technique Lauenstein's method is that of Schéde's.[31]

TREATMENT OF SUBCUTANEOUS FRACTURES, PARA ARTICULAR, OR INVOLVING JOINTS.

Oberst,[32] in this class of fractures, which frequently result from impaired motion and anchylosis, believes that these complications may be avoided by removal of the hæmatoma or hæmarthros by puncture, methodical massage, and compression, suitable dressings to prevent dislocations of fragments and passive motion of the affected joint during the union of the fracture. This method, during a year's experience at the Poliklinie at Halle, has given quite satisfactory results in fractures of the radius and fractures of the humerus into the elbow-joint. His method is to etherize the patient, reduce completely any displacement, and fix the hand and forearm in a "Schéde" splint. If there is no especial extravasation the apparatus is removed at the end of three or four days, the hand and forearm cautiously massaged and dressed with plaster of paris bandage. The latter is removed on the tenth to eleventh day; massage and passive motions repeated. This is continued to the fifteenth or eighteenth day, when the "fracture usually seems united," and the patient is allowed to go without apparatus, and carefully use the hand. If marked extravasation is present at the time treatment is begun, a light compression from a rubber bandage is added to above treatment. The patient is watched closely, and bandage continued till swelling ceases. Then the splint is removed, and the arm and hand gently massaged and manipulated daily. After complete absorption the remainder of the treatment is as above. The results in forty-one cases are stated as highly satisfactory. Fractures of the elbow are freed from splints every three or four days, gently massaged and moved. Plaster of paris is only used when apposition of fragments is difficult to maintain. When used it was removed every fifth or sixth day, and arm placed at different angle when reapplied after the massage and passive motion. Apparatus, whether splints or plaster of paris bandage, is omitted at the end of three weeks, and a diligent but cautious use of massage completes the treatment. These statements are authorized by the results in ten cases.

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[26] Herzberg, C. Beiträge zur klin. Chir., Bd, iii. Hft. 3.
[27] Rev. Gen. de Clin. et de Thérap., July 5, 1888.
[28] Allgemeine Wien. med. Zeit, 1888, Nos. 22 and 23.
[29] Experiments of Blasius.
[30] Arch. f. klin. Chir., 1888, xxxvii. 3, p. 249.
[31] Arch. f. klin. Chir., 1888, xxxvii. 3, p. 634.
[32] Sammlung klin. Vorträge, No. 311.

THE TREATMENT OF FRACTURES OF THE OS CALCIS.

Gussenbauer[33] records a case where a patient, æt. forty-nine, on falling into an excavation, threw his right foot forward, and, landing on the point of his foot, fractured his os calcis. There was a marked swelling over the right astragalo-calcanean articulation and over the lower third of the leg. Plantar flexion was impossible; dorsal flexion painful; the tuberosity of tibia was raised two inches by the tendo Achilles, which separation was increased to three inches and a half on dorsal flexion.

The fragments might have been adjusted by tenotomy of the tendo Achilles, but this would have obliged a long confinement to bed. Gussenbauer therefore brought down the fragment of bone with a "Langenbeck" bone hook fastened into the os calcis, in this manner accurately opposing the fragments. While so held a triangular nail was driven horizontally into the os calcis, thus securely fastening the bony fragments in apposition. Iodoform gauze bandage. The foot was then placed on a "Petit" splint, and in fourteen days the patient could move the foot without pain; in six weeks the fragments were perfectly united and the nail was withdrawn through the skin. Complete union. He was then discharged between the sixth and seventh week, with the foot perfectly restored to usefulness, so that he could pursue his avocation as a restaurateur.

Gussenbauer recommends this method as the simplest and surest for these fractures.

DISINFECTION OF INSTRUMENTS.

To more recent investigators the value of heat as a sterilizing agent is more and more evident. The reports of Davidsohn and Redard are the most extensive of the later publications on this subject. Davidsohn,[34] at the Hygienischen Institute in Berlin, has endeavored to discover a method which shall be a practical one for ordinary surgical practice, and claims that after a very large number of very interesting experiments the following method was found most convenient and efficient.

Davidsohn claims that moist heat is by far the safest, simplest, and most certain method of absolute disinfection. It invariably destroys all forms of life, even the anthrax bacilli, by exposure to moist heat carried to 212° F. for five minutes.

Immediately after an operation the instruments should be well washed in cold water. Canulæ, trocars, and syringes should be cleansed by a current of water forced through them and be left filled with water. Other instruments should be cleansed by a brush. They should then be boiled for five minutes in a covered water-bath at 100° C. (with no portions unsubmerged). Afterwards removed and dried by wiping with a sterilized cloth (and put in an aseptic place). Previous to use the instruments should be boiled five minutes (under the same conditions as above) and used from the water in which they were boiled without any disinfecting solution.

Redard[35] has made a very extended investigation of the subject, and has done some very valuable work. He claims that submerging instruments in antiseptic solutions at operations, as is generally employed at present, is an uncertain method. His report is too extended to give in detail, but his conclusions are that heat is the surest and best means of disinfection, and is most satisfactorily employed by means of an apparatus, which he describes, in which the objects to be sterilized are subjected to a temperature of 110° C., obtained by steam under pressure. Fifteen to twenty minutes of such exposure gives sure and absolute disinfection. To sterilize by liquids one must have a prolonged exposure to at least a temperature of 110° C. Knives for ten minutes, sounds, trocars, clamp forceps, and similar instruments only after forty-five minutes at 110° to 120° C. With Redard's apparatus one can sterilize both instruments and dressings.

DISINFECTION AND HARDENING OF RUBBER TUBES FOR DRAINAGE.

Dr. Javaro[36] states that rubber tubing (preferably red rubber) is rendered more suitable for purposes of wound drainage by immersing it in strong sulphuric acid for five minutes. It is then washed in alcohol (75%) and preserved in a carbolic (5%) or sublimate (.1 to .2%) solution. The rubber becomes a dark chestnut color and hard. Such tubes are not in danger of occlusion from compression, and are not more liable to cause sloughing from compression of wound surfaces than the soft tube in common use.

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[33] Prager Med. Wochenschr., No. 18, 1888.

[34] Berl. klin. Wchnschr., 1888, xxv. 35.

[35] Revue de Chir., 1888, viii. 5, 360.

[36] Centbl. f. Chir., 1888, Bd. xv. 601.

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Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY, AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

February 13, 1889.

Dr. S. N. Nelson read a paper on

THE ETIOLOGY OF DIPHTHERIA.[1]

Dr. Rotch said that in looking over the literature of the disease, diphtheria, it would be found to be immense, and that the greatest number of drugs had been used in its treatment. This clearly points out to us that as yet no specific has been found, and at once reduces the drug treatment to a minimum. We are, however, continually hearing physicians state that their treatment with certain drugs has proved successful in diphtheria, and yet where this same treatment is repeated in other cases it fails to prove satisfactory. The explanation of these apparently contradictory results is found in the cases of diphtheria not being classified. To speak of the treatment of diphtheria in general, and not to specify and separate the malignant from the benign cases, gives an erroneous idea as to the value of the especial treatment, and yet this is all which has so far been done with this dangerous and insidious disease. The age of the patient, the idiosyncrasy of the individual for this especial poison, and the vital force which he possesses to resist it, are all-important questions which will influence the success of the treatment.

The anatomical distribution of the disease, as represented in the throat, is also of the greatest importance, in its influence both in responding to or resisting the treatment. We have observed clinically that the most favorable location for the membrane is on the tonsils, while the danger increases as the disease extends downwards, causing stenosis of the larynx, or upwards, attacking the naso-pharynx. In the former class of cases the surgeon has accomplished brilliant results; in the latter we have need of the most active treatment, guided by our anatomical knowledge of the pharynx. The absence of lymphatics in the tonsils is probably the reason why that class of cases where the local disease is limited to the tonsils is comparatively less dangerous, the surface of the adenoid tissue of the tonsil being less readily absorptive than that of the naso-pharynx, where there are lymphatics forming a network and emptying by four trunks one above and one below on each side, thus making the danger of continuous septic poisoning greatest in this class of cases. Professor Dwight supports this view of the case. Dr. Rotch explained that unusual opportunities were offered in the diphtheria wards of the City Hospital for studying the different methods of treatment, through the intelligence of the house physicians aided by the skill of the trained nurses.

The results of any especial drug treatment had been disappointing. A careful trial of the corrosive sublimate treatment had failed to convince him that it was in itself of any material benefit, and indeed it was hard to see why it should affect the disease when we considered that the amount of the drug which was necessary to kill the bacterium of diphtheria outside of the body could not be introduced into the patient's stomach without acting in itself as a poison to the patient. This same reasoning held good for the other drugs which were given internally, according to the fashion of the day or preference of the individual physician. Dr. Rotch then said that it was useless to discuss the question as to whether the disease was constitutional or local, as it was now recognized to be a general constitutional disease, with its local manifestations in the throat. In considering the rational treatment of the disease, we should be guided not by theories but by exactly what we knew about it. It has been shown that a specific bacterium causes the disease;

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[1] See page 256 of this Journal.

this bacterium cannot, according to our present knowledge, be reached by the internal administration of drugs: it can be reached locally by disinfectants, continuously applied to the mucous membrane of the throat. The most important part of the throat to protect from septic absorption is the nasopharynx. Hence a thorough cleansing through the nose of the above-spoken-of network of absorbents becomes a necessity for the safety of the patient. This cleansing should be done with the nasal douche, and some disinfectant used, such as corrosive sublimate one to ten thousand, which practically has been found not to be dangerous and yet sufficiently antiseptic. The cleansing should be frequent, every one or two hours, the patient not being allowed to sleep longer than this, for sleep in diphtheria is only too apt to be a lethargic condition produced by the septic poisoning. We must also consider that we are dealing with a disease which is essentially depressing to the vitality from the very beginning, and which calls for an amount of alcoholic stimulant far beyond what is demanded by diseases in general. Finally, Dr. Rotch said that he would summarize the treatment of diphtheria as follows:

1. Carefully determine which portion of the throat is the seat of the local sepsis.
2. Apply to that portion a disinfectant which is not irritating locally or dangerous generally.
3. Apply the disinfectant frequently.
4. Give stimulants in large amounts.
5. Treat generally as for any exhaustive contagious disease.

Dr. Gay: I have been invited to say a few words upon the mechanical treatment of laryngeal diphtheria, and more especially upon intubation. No arguments are required in this vicinity to prove the value of this mode of treatment. In other portions of the country some physicians whose experience is derived from a few cases are of the opinion that tracheotomy is of no use, as most of the patients operated upon die. Of over three hundred tracheotomies, and over one hundred intubations, performed at the City Hospital, from one-fourth to one-third recovered. Such being the fact, and, moreover, as I have never seen a case of laryngeal diphtheria recover without operation, I can but conclude that the mechanical treatment of this affection is of some benefit. (Two cases of instruments for intubation, one for children and the other for adults, were shown, and the method of using them was explained.)

Intubation is a more available operation than tracheotomy, from the fact that, as there is no knife and no cutting, it is not looked upon by the laity in the light of a surgical procedure, and consent is more readily gained. In fact, it is seldom that any opposition is made to it by the parents. Almost no preparation is requisite beyond a sheet or blanket, and two assistants. In fortunate cases the operation is over in a few moments, and nothing remains in sight as a reminder of what has been done.

If the child is very septic, great care is necessary in doing this operation to avoid collapse, which is produced under these circumstances with startling rapidity. It requires great tact, patience, and perseverance to get the intubed patients to take sufficient nourishment. As little or none of the liquids pass into the air-passages, the coughing and choking induced by efforts to drink need not deter us from persisting to urge them upon the patient. In some cases the patient can swallow very easily while lying upon his side. In a majority of instances a clever person can succeed in getting enough food into the child to compensate for the presence of the laryngeal tube.

While the new operation is not free from accident, complications, and disappointments, yet it is a most valuable one, and from the fact that it is more readily performed than tracheotomy, and in a majority of instances is fairly effectual, it will continue to grow in favor with the profession and with the public.

Dr. F. B. Harrington offered the following Remarks on the Surgical Treatment of Diphtheria:—

Whatever reduces the vitality adds more to the danger in diphtheria than in almost any other disease. Laryngeal stenosis, from whatever cause, exhausts the vitality with great rapidity. There is no more difficult question to decide than how early should dyspnœa in croup be relieved by tracheotomy. The dyspnœa may be of the most marked character, and seem to threaten speedy death, when a fortunate cough or vomiting may bring away the obstructing membrane. Severe dyspnœa may last for hours, then subside, and recovery take place. I think that every physician who sees much of diphtheria has had cause to regret the hopeful delay of tracheotomy. I think that every surgeon who has performed intubation many times feels that it is a less serious undertaking than tracheotomy; that he is asking less of the patient and of the parents when he advises intubation. Instead of waiting until he feels certain that the child will die unless he operates, he is justified in doing intubation when he sees the child losing ground from obstruction. The paper of Dr. Gay on "The Comparative Merits of Tracheotomy and Intubation in the Treatment of Croup" seems to the reader a most concise and accurate statement of the value of intubation. I do not think it is desirable or necessary for me to defend the operation of intubation. I desire to state, however, that from a condition of great distrust of the operation, I have come to look upon it as the first and most desirable operative procedure in cases of diphtheritic laryngeal stenosis. My experience has not been large (five tracheotomies with three recoveries, and seven intubations with two recoveries). It is very decidedly my opinion that more lives might be saved if tracheotomy were done earlier, and that more lives will be saved because *intubation will be done earlier.* The difficulties of the operation are not so great that most physicians could not perform it with facility after practice. The dangers are not great enough to make it undesirable.

My cases have been under what might be called "home treatment." In their care I am indebted to Dr. G. M. Sears for much assistance. The cases, however, have had only the nursing which untrained members of families of the poorer classes can give. They gave me anxiety, but no more than similar cases of tracheotomy do. It seems to me to be the duty of every physician to familiarize himself with the operation of intubation, unless he has some one near at hand whom he may call upon. Any man of ordinary skill can learn, by practice upon the cadaver or upon small dogs, to apply these tubes on the living. I think that no one will deny that the simplest tracheotomies are much more difficult than the simplest intubations, and that the difficult tracheotomies are among the most trying operations in surgery, and far more difficult than any intubation of the larynx. I therefore consider intubation a distinct advance in the treatment of diphtheria, and I believe that ultimately more lives will be saved by its use. At best the failures will always outnumber the successes, but I doubt if we shall see in the future that disinclination to intubation which many physicians have to tracheotomy. I do not think that it is too much to say that many a child, who at least might have died without agony, has been allowed to die of suffocation, because of the difficulty of tracheotomy or the half-heartedness of the physician in urging an operation which is more than likely to prove a failure as far as life is concerned.

Dr. J. Orne Green spoke on

EAR-DISEASE IN DIPHTHERIA.

The important diseases of the ear are four in number: —

Acute: I. Diphtheritic inflammation.
II. Suppurative inflammation.
Chronic: III. Adhesive processes in tympanum.
IV. Disease of muscles.

I. A true diphtheritic inflammation, with true membrane, generally in tympanum, and an extension of the disease from the naso-pharynx through the eustachian tube to the tympanum, but occasionally occurring in the meatus; the former giving us otitis media diphtheritica, the latter otitis externa diphtheritica. Both fully established by dissections and microscopical studies.

II. A suppurative inflammation of the tympanic mucous membrane; so far as it is yet proven, the ordinary otitis media purulenta.

Both these forms of inflammation are very frequently attended by ulceration, with loss of large portions of the drum-membrane, of the ossicles, and by ulceration of the bone with resulting caries. It is the universal experience that no disease is so liable to produce great destruction in the ear as diphtheria. Even in scarlet fever the diphtheritic element is the great menace to the ears. The great characteristic of both these varieties of tympanic inflammation is the tendency to ulceration and destruction, which is very much greater than is found in simple inflammations even when associated with other severe debilitating diseases, leading one to expect that eventually a distinctly specific element will be proven to exist in these cases. In severe cases the destruction is often of frightful rapidity, and I have known the entire drum-membrane to be destroyed within twenty-four hours in a case of suppurative inflammation due to scarlatinal diphtheria.

The two chronic forms of ear disease are rather sequelæ of the diphtheria than accompaniments of the disease; they are

III. An organization of the fine cells, which are infiltrated in the mucous membrane of the tympanum, either as the result of one of the two preceding varieties of inflammation or of a slight catarrhal inflammation which generally escapes notice. After these cells become organized the whole mucous membrane undergoes often a sort of cicatricial contraction, by which the vibratory apparatus is seriously impaired.

IV. The muscles of the pharynx and the intrinsic muscles of the tympanum appear in some cases to be affected so as to impair the various accommodative powers of the ear.

In the two acute forms of inflammation early recognition and appropriate treatment of the disease will often avoid the great destruction so frequently seen, and a few words on the symptoms and indications for treatment may not be amiss.

Subjective symptoms, if noticed at all, are those of congestion and swelling of the tympanum, viz., fulness, pain in the ears or over the side of the head, throbbing, subjective noises, and deafness. In very sick patients, however, all of these symptoms are unnoticed, and it should be remembered that the most serious ear-disease may exist without any complaint being made of the ears.

Objective symptoms: deafness of a certain degree is often the first thing noticed, and should always lead to an examination of the ears. This will show in I. the false membrane covering the deeper parts: in most of the cases which have been reported the drum-membrane was already destroyed at the time of the first examination, and the false membrane was covering the exposed tympanum and deeper meatus. I myself have never seen this variety of the disease. In II. examination even in the earliest stages shows a dense redness along the manubrium and in the osseous meatus, the individual capillaries not being seen as in the early stages of the common tympanic inflammations. This redness extends to the whole drum-membrane, which rapidly, often within twenty hours, becomes almost purple. Rupture next follows, and often simultaneously ulceration and sloughing; then a profuse otorrhœa and sometimes, later, sloughing of the ossicles, caries, and mastoid inflammation.

Treatment. In the early stage of this intense inflammation a free incision of the entire posterior half of the drum-membrane by relaxing tension, by free bleeding, and by evacuation of retained secretion will, in many cases, prevent ulceration and sloughing, and the subsequent treatment should consist of antiseptic cleansing and drainage as thorough as the general condition of the patient will allow.

During the course of the tympanic inflammation two symptoms are of very grave importance, viz., 1st, the loss of bone-conduction, which points to serious involvement of the labyrinth, often resulting in total deafness; and in case both labyrinths are lost, this, in a child under six years of age, means deaf-mutism; 2nd, symptoms pointing to the brain, which usually result in meningitis.

Dr. Durgin, Chairman of the Municipal Board of Health: Inasmuch as it seems evident that among these contagious diseases there are a large number of mild cases unrecognized or unknown, it may be of advantage, instead of giving the ordinary gargles, washes, and sprays, that some efficient and well-known disinfectant be used as a wash, spray, or gargle from the beginning, when there is a doubt as to whether the disease is an ordinary tonsillitis, pharyngitis, or something else. A disinfectant might prevent the spread of the contagion from one child to another. That might be as easily done as to give the ordinary gargle.

I was very glad to hear the suggestion that a great deal more care be given to early diagnosis, followed immediately by the reporting of a case. This is of service not only in enabling the board of health to visit the premises early and try to remove the child to the hospital, but also of service in preventing some of the children of that household attending school and thus spreading the disease. I have no doubt that a great deal of the spread of this disease is from the mild cases which are allowed to attend school. I have known quite a number of cases where a child, sitting next another with a sore throat which subsequently proved to be diphtheria, took the disease. It seems to me that the secret of the vast spread of the disease over so large a portion of this city is found in the mild cases, which it is almost impossible for physicians to diagnosticate early, and sometimes not at all. I also hope that there will be a tendency on the part of physicians to regard cases of croup as at least possible diphtheria. It has been shown that very many cases of so-called *croup* have been followed by well-recognized cases of diphtheria in the same family, evidently coming from the first case, regarded as croup.

The proceedings of the board of health in cases of diphtheria may be given briefly as follows: We require notice from physicians in each separate case. This is generally given as soon as the physician is able to make the diagnosis. A circular, of which a copy is appended, is immediately sent to the family, giving general information, and the school officers notified on the same day.

A physician is sent to see if the patient can go to the hospital and to urge or compel the use of all prudent means to prevent the spread of the disease, recognizing it as a purely contagious disease.

Another officer is sent to examine the house and premises to see if any local condition is operating against the case.

On the recovery, removal, or death of the patient the apartments are cleansed by the use of sulphurous acid gas, and the sponging of the walls, floors, carpets, and woodwork with 1–500 corrosive sublimate and other measures noted in the circular.

We regard it as of the greatest importance that the patients should go to the hospital, and the other members of the family having been exposed should be isolated and kept under watch, but this cannot all be done now. We keep an ambulance in readiness, and with the aid of the City Hospital and its ready officers and ambulance, move as many as we can.

The many difficulties in the way of finding out the large number of mild and undetermined cases, and the consequent uncontrolled spread of the disease, will be much better understood in consequence of this discussion.

Boston Board of Health,
12 Beacon Street.

The following circular is issued for the purpose of more widely extending the knowledge of a few well-attested facts concerning diphtheria, and reminding all persons that greater care should be exercised to prevent the spread of this much-dreaded disease. Diphtheria is contagious and infectious, and may be easily communicated, either directly or indirectly, from person to person. It may be conveyed directly in the act of kissing, coughing, spitting, sneezing; or indirectly by infected articles used, as towels, napkins, handkerchiefs, etc. The poison clings with great tenacity to rooms, houses, articles of furniture and clothing, and may occasion the disease even after the lapse of months. Diphtheria attacks all classes, at all ages, and at all seasons of the year. By preference it attacks children and those who are debilitated from exposure to filth, dampness, or foul air from whatever source. When a case of diphtheria occurs in any family, the sick person should, if possible, be taken to a hospital, otherwise he should be placed in an upper room apart from the inmates of the house, and should be nursed, as far as possible, by one person only. The sick chamber should be well warmed, exposed to sunlight, and well aired; its furniture should be such as will permit of cleansing without injury, and all extra articles, such as window and table drapery, woollen carpets, upholstered furniture, and all hangings, should be removed from the room during the sickness. The physician and nurse, as a rule, should be the only persons admitted to the room.

Visitors to the infected house should be warned of the presence of a dangerous disease therein, and children especially should not be admitted. All clothing removed from the patient or the bed should be at once placed in a solution of corrosive sublimate — two drachms to the gallon of water, in a wooden vessel — by the nurse, before being carried through the house or handled by any other person. They may be soaked in this fluid for a convenient time and then boiled for one hour. It is better not to use handkerchiefs for cleansing the nostrils and mouth of the patient, but rather soft rags, which should be immediately thereafter burned. All vessels for receiving the discharges of the patients should constantly contain some of the disinfecting liquid. Water closets and privies in the house should be disinfected daily with a solution of fresh chloride of lime — half a pound to the gallon of water. Every kind and source of filth in and around the house should be thoroughly removed, and disinfectants freely used. Cleanliness tends both to prevent and mitigate the disease. Drains should be put in perfect order and ventilated by a four-inch straight pipe extended above the highest point of the roof of the house in every instance, terminating at a distance from any chimney or other ventilator. Children in the family should not attend school or mingle with other children until the patient has wholly recovered and all infected articles have been disinfected, and these facts certified by a responsible physician. On the recovery, removal, or death of the patient the most thorough disinfection should follow. Close up all apertures in the room tightly; hang up, unfolded, all articles of bedding, clothing, etc.; remove all mattress covers for the free exposure of their contents; place in an iron pan four pounds of brimstone for each 1,000 cubic feet of space in the room; place the pan on two bricks or an iron rest in a tub containing water; pour a little alcohol on the brimstone, ignite it with a match, and leave the room closed tightly and guarded for not less than ten hours. The fumes of burning brimstone are dangerous to breathe and will kill animals and plants. After fumigating has been done, the room and everything in it should be thoroughly aired. The walls and ceilings should be brushed, and the floors and other wood-work washed with water containing two drachms of corrosive sublimate to the gallon of water, and all vessels and utensils used in the room should be thoroughly washed with the same solution. All wash-bowls, water-closets, sinks, and slop-hoppers should be thoroughly washed with a solution of fresh chloride of lime — one half-pound to the gallon of water. When death occurs, the body should be immediately placed in the coffin, wrapped in a sheet saturated with a solution of corrosive sublimate — two drachms to the gallon of water — and the coffin *tightly* and *finally* closed. No public funeral should ever take place at the house where the patient died, or elsewhere, unless the coffin remains hermetically sealed. Corrosive sublimate is a poison.

By order of the Board of Health,
Samuel H. Durgin, M.D., *Chairman.*

A Member of the section, who was detained by sickness, sent the following formula for use in cases of diphtheria, stating that he had employed it in a great number of cases, and had been gratified by the results obtained. At the request of the section the formula was read by the secretary: —

Into a thoroughly warm, dry, wine bottle put of coarse chlorate of potass grs. viii., to which add of chemically pure hydrochloric acid ʒi. by measure, slowly. Agitate until the chlorate of potass is quite dissolved. Add, of water ℥xvi., ounce by ounce, shaking at each addition. Dose ʒii.–ʒiv. every hour, "vel, pro re nata."[1]

I have not used in follicular tonsillitis, or in the early or later stage of diphtheria, so potent and, in every way, acceptable an antiseptic as this of which I offer the formula. Little children take it readily; to whom I give it in little toy cups, not from a spoon.

Dr. A. P. Weeks: The unrecognized cases of nasal diphtheria have been referred to during the discussion. I have been taught, and have found, that nasal diphtheria is the most serious form of the disease that we have to contend with. I cannot understand how a child can have nasal diphtheria and be about his play and have an ordinary appetite, and the disease remain entirely unrecognized. One of the gentlemen spoke of the power of absorption from that locality. We know it is very much greater than from the tonsils, or from the larynx, but I cannot see how we can look upon that as an active source of contagion. When we see how often scattered cases will appear, one in one extreme of a town, another in another, all unconnected, we cannot trace contagiousness in it. I think we all forget that we have sewers in our own bodies that should be kept well open, cesspools that should be well ventilated. We know that children are liable to irregular habits; they generally eat like gormandizers, and too fast at all times. The blood becomes loaded with impurities from such cases, and bacteria can be developed in the alimentary canal; that seems to me to be one reason why children are so much more subject to this disease than adults.

As regards the method of treatment: it seems to be very unsettled in the minds of practitioners, so many specifics have been lauded. The formula read to-night was published some few years ago by a Canadian physician who had not lost one case out of a hundred. I used it and lost the very first case, and have lost others since. I think I have lost confidence in the remedy; and I have learned, as Dr. Rotch has suggested, to recognize the constitution of my patient as one of the great elements of success or failure. When we are called to one of the loose, lymphatic, phlegmatic families we find ready absorption, and the glands about the neck and throat readily take up the poison; it is very easy to anticipate what will be the result in these cases within five or six days; whereas, on the other hand, if we get into families more nervous, muscular, and of quicker circulation, we see little of that absorption, and we may contend with very serious throats and yet come out all right.

There is one method of death that has not been spoken of, that occurred in one of my cases a few days ago, — the gathering of a heart-clot. I saw that in one of my cases, post-mortem. From that there had been sent off clots which produced thrombi in the brain, in the kidneys, lungs, and somewhat through the general circulation. I don't know how we can forestall that. I noticed, in a patient I lost recently, that the heart was very slow throughout the disease, although the patient did not seem very much exhausted, did not have that languid and listless appearance that many of them have; but for the last four or five days the patient complained of periodical pains in the head and for the last few days quite continuously.

Dr. Morton Prince: I did not intend to say anything, but I cannot resist the opportunity of saying a few words especially on the subject of contagion. I think we are indebted to Dr. McCollom for bringing forward this matter of the part played by contagion from the mild cases. I think it a point of great practical importance. It has been my lot to investigate a very large number of these cases of diphtheria recorded on the chart, and it has been my constant, I might say almost daily, experience to meet with case after case of undoubted diphtheria, where there were patches of membrane in the throat, and yet the symptoms so mild as not to compel the patient to be put to bed, and the child was allowed to run about mingling with the rest of the family, going about the streets and alleyways; I think there is no question that such cases are the most prolific sources of contagion.

Another source of danger arises from the severer cases that are allowed, before thorough convalescence, to go around in the same way. I am satisfied that it is very common for the children of the poorer classes to go about during convalescence, the physician often saying that the danger is past simply because the membrane has passed away. I think Dr. McCollom is right in saying that contagion arises from these milder cases, although it is difficult of demonstration because they are unsuspected and can't be got at. Inquiry into the antecedent history of many of these cases, I think, will satisfy even the most sceptical.

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[1] July, page 257, Amer. Journal Med. Sciences, 1867.

With regard to sanitation, a great deal is required. In the first place there must be in every case inspection by the board of health, as is already done.

In the second place, a hospital should be established, where not only the child who has the diphtheria will be received, but the mother along with the child in those cases where the child is too young to be sent by itself. We can't expect the mothers to send children in arms to the hospital and stay at home themselves. There should be established along with the hospital a *home* where other members of the family can be sent when the mother goes along with the child to the hospital. It is impossible to send the mother with the child if no one is left at home to take care of the rest of the family.

In the third place, in those doubtful cases where we are not quite satisfied it is diphtheria, and those few where it is not right to send the sick person to the hospital to be amongst diphtheria patients, a home of that kind could easily receive the well members of the family and the doubtful cases could be isolated at their own homes. Without such a home a hospital would be useless.

In the fourth place, I think that an early report of the cases should be insisted on. Many cases are not reported, as Dr. Durgin has said, and many cases are reported at a late stage of the disease, during convalescence, or after death has taken place. For any good to be done it is essential that early reports should be made.

In the fifth place, there should be a thorough disinfection, fumigation, and cleansing of the premises. All this will involve much expense, and whether or not the taxpayers are willing to pay so much is a question I will not go into. I think as much as that is necessary if we are to obtain any practical results.

Dr. C. F. Folsom said: At the last meeting I was asked to bring in a chart with reference to the prevalence of diphtheria in the State, but not being able to come then, I now present it, representing the number of deaths from diphtheria (including, of course, croup) and other prominent infectious diseases in the State of Massachusetts for thirty years. The name diphtheria appears in our mortality returns for the first time in 1858, although severe epidemics of the disease occurred early in this century and late in the previous century. The epidemic which reached its height in 1863 caused 2284 deaths in that year, decreasing to 676 in 1870, and again rising rapidly from 913 deaths in 1874 to 3294 in 1876. The State Board of Health began the inquiry regarding the conditions affecting the spread of diphtheria with the usual preconceived belief of that time in favor of filth-propagation, but the facts disclosed by several years' examination showed that filth was a subordinate factor, and that infection was the chief element.

The investigation in all the towns of the State entirely corroborates Dr. McCollom's statement. I will mention only two towns.. In 1874 the little town of Conway, of 1400 inhabitants, had 140 cases with between 70 and 80 deaths, a mortality of a little over 50%. The houses were isolated; the people intelligent. Every single family was personally well known by some doctor, and the conditions for investigation could not have been better. It was a high town and well situated; a rapid river flowed through the bottom of it. There were four tenement houses in the town occupied by foreigners, and scarcely a case occurred there. There was an extremely filthy slaughter-house in the town, but the houses near the slaughter-house suffered less than the others; and a family actually lived in the same building with the slaughter-house and not a single case occurred there. All the filth from the slaughter-house was carried to a large field and spread over the ground, and the houses nearest it had scarcely a case. Almost every case could be traced to contagion or infection, whichever you call it. The primary source of infection, however, was not discovered.

In Gloucester there was quite a severe epidemic. That was deemed a very good place for investigation, considering the peculiarities of the town, which everybody knows: no sewers, no water-supply, and wells in a very bad condition. There were two hundred and eight deaths during four years; seventy-five in one year. Thorough examination of the sanitary condition was made, and every house where a case occurred was noted. The same facts were found there, and that the relation of the disease to filth was decidedly obscure; but the matter of contagion was the prominent one and the chief one. The wells were in the worst condition of any town in the State; the soil shallow, with rock underlying. In two wells I made a computation of the value of the drinking water as manure, and found it of precisely the same value as the sewage from the Pittsfield sewers. Two very large families habitually drank that water and not a single case of diphtheria occurred. I might give many towns where the same series of investigations were made with the same results.

For the Thirty-ninth Registration Report of this State I prepared an analysis of the mortality record from diphtheria for ten years.

And in the 18,714 deaths from diphtheria, in the ten years from 1867 to 1878, the fact holds true that insanitary conditions had no direct relation to the prevalence of the disease.

With regard to personal investigation from town to town and house to house, I think I can say that no sort of question was so clear of contradiction as that there are hundreds and hundreds of cases that go about in the streets and among the schools without the parents knowing that the children are sick, and they are never referred to a family physician. My own impression is very decided that those form a very large source of infection.

These 18,714 cases showed the prevalence of diphtheria to be most reduced in the month of August, gradually increasing until it reached its height in December and January and gradually decreasing again until August, a fact which not only shows the influence of the schools in spreading the disease, but also the fact, which seemed to me of some prominence, that during those times of year which favor catarrhal inflammations of the throat, if diphtheria be present, the diphtheria is more likely to spread.

It seems to me beyond question that these 18,714 cases bear out unequivocally Dr. McCollom's conclusions; and in the treatment of the disease the first thing we have to do, I think, is to combat the element of infection and contagion. I don't see how we are to do this until we have a hospital especially for that purpose, as required by law in English towns of large size. One further remark with regard to Dr. Prince's statement that this hospital for infectious diseases is of comparatively little avail unless there is a house to which the families exposed to the infection could be carried. That has been a very large element in the treatment in Glasgow for the last ten years. There is quite a large number of houses at the disposal of the sanitary authorities, and when diphtheria appears in a house those actually sick are sent to the hospital and those exposed are sent to these houses, while the infected dwelling is thoroughly cleaned and disinfected.

Dr. Buckingham: *Apropos* to what Dr. Folsom has said about mild cases being about, it certainly is not a very uncommon thing for me to see patients in the out-patient department who come with diphtheria, and who are found sitting side by side with patients affected with other diseases, thus exposing many persons to the danger of infection during the time they remain in the waiting-room of the hospital. This is a source of danger which is always to be apprehended, and which should be guarded against as much as possible.

Dr. Lyman: I would like to emphasize what has been said as to the reporting of cases. I don't think it is out of place to say that a great many cases are kept away from the board of health — and I say this individually, and not as a member of the committee — by physicians who ought to know better: that is "the long and the short" of it. I think a great many cases are kept from the board of health, which if reported would save the spread of the disease in certain localities. I think this society is bound to consider its relation to the community, and that the members should use their influence to induce their friends and neighbors to report all cases. We are sometimes in doubt as to a case, whether it is diphtheria or not, and we are apt to say: "I guess I will let it go." Now, I think that every single case should be reported, and let the responsibility come upon the board of health of taking care of that house.

As to the difficulty of diagnosis. That is said to be one of the reasons why cases should be reported. That is true. I have had two or three cases at the City Hospital which I would not remove from the general ward to the diphtheria ward, because I was extremely doubtful as to whether it was diphtheria. I have had one in private practice within ten days. I at first said: It is nothing but tonsillitis. There is a little cheesy exudation and nothing more." I didn't report it at once, but in a few days the membrane was unmistakable, and I felt bound to report it to the board of health. It was in a house where the patient was perhaps just as well off as he could be at the hospital or anywhere else. That difficulty of diagnosis does exist, no one will dispute; and one reason, I think, why many cases are not reported is that many of the older men, and perhaps some among the younger gentlemen, say: "I won't report that case because I don't know whether it is diphtheria or not." Who does know? There isn't a gentleman who has been in practice a long time who has not made mistakes in a doubtful case. Ask your friend to come and look at it with you. Don't let the case go unreported if it is possibly a case of diphtheria. We have got to do our share, or the board of health cannot do their part.

I have nothing to add with reference to the course of treatment. I think we all have our own ideas as to the value of each method of treatment in diphtheria. It is the *indications* that I think are important. What are the indications? Principally and chiefly to remember what the possible result may be — what the mode of death. In one case there is great danger of extension to the larynx. Then it passes into the hands of the surgeon. But the greatest danger, it seems to me, in treating diphtheria is the lack of an early appreciation of its extremely debilitating character. At the very beginning of diphtheria we should begin to stimulate our patient, the disease being in this respect unlike pneumonia, or typhoid fever, in which we may wait for indications. In diphtheria we know we have a most debilitating disease before us, and I think almost the first prescription should be brandy and food. Watch the pulse. Do everything that possibly can be done to prevent heart-failure. We have a great many cases of diphtheria in which the case goes on very well; the membrane clears away and if you are not watching the pulse you say: "The patient is doing very well." He feels "first-rate" when you speak to him in the morning, and suddenly you find that patient has collapsed. The things to be borne in mind are, I think, the fear of its extension to the larynx and the fear of heart-failure.

I saw one young man at the City Hospital this winter — eighteen years old, I think. He was over his diphtheria. The membrane cleared up and he was "first-rate," but still his pulse didn't come up. In a week that boy died of pure heart-failure. There was nothing in the world to cause his death other than simply a loss of vital power, or heart-failure.

As my contribution to the treatment of diphtheria I would urge upon everybody to be extremely cautious in the very beginning to keep up the strength of the patient.

Dr. Lyman then presented the following

REPORT OF COMMITTEE ON DIPHTHERIA.

Report of committee appointed at the last meeting to confer with the board of health. Dr. G. H. Lyman, chairman: —

"The committee appointed to 'confer with the board of health as to the necessity and the feasibility of further measures to limit the spread of diphtheria' respectfully report, as the result of said conference, that under the existing laws the board has authority to isolate cases of diphtheria which are reported to them, or in any way fall under their observation, but that this power is not in all cases available for lack of proper financial means.

They may, for instance, send cases to the City Hospital or other institutions willing to receive them and having proper facilities for isolation and treatment, but once there, the authority of the board ceases and they cannot prevent the removal of the case at any time by its parents, guardians, or friends, nor can the hospital authorities compel their patients to remain. The board can also compel proper disinfection when cases are made known to them. They can enforce the legal penalties for non-report on the part of physicians, but are here met with the well-known fact that in many cases it is impossible for the most skilful diagnostician to differentiate for the first twenty-four or even forty-eight hours between non-contagious, tonsillar, pharyngeal, and nasal diseases and genuine diphtheria.

It is thought again that there is a belief among those not well-informed, of the community, that this disease is neither infectious nor contagious and may therefore be safely and more conveniently treated in their own houses. It is believed by your committee that very much may be done in this direction through the influence of this society by creating more correct views in the public at large as to the contagiousness of the disease, the absolute necessity of isolation, and a more earnest co-operation with the board of health.

The public has now become so fully enlightened as to the dangers from small-pox that the board meet with comparatively little opposition in the most stringent and arbitrary enforcement of isolation, so far as that disease is concerned; and it is believed that the same enlightenment with regard to diphtheria would do very much towards diminishing its spread by inducing a more ready compliance with the necessary measures of isolation and disinfection.

Your committee would therefore recommend that this society, both collectively and individually, should foster so far as they can a proper sentiment in the community as to the contagiousness of this disease and more especially should encourage its earliest possible recognition and report to the board of health in each individual case.

By these methods a public sentiment will sooner or later be created justifying and requiring from the proper authorities a suitable separate hospital for the treatment of infectious and contagious diseases, such, for instance, as is required by law in England, with ample means for its support, and over which there shall be as absolute authority as already exists over the hospital for small-pox.

In the absence of these necessary facilities for thorough isolation it is impossible to exercise an efficient control over the various dangerous diseases that from time to time become epidemics in our city, or which have gained a permanent foothold here.

Committee, { G. H. Lyman, *Chairman.*
G. B. Shattuck.
C. F. Folsom.

The report of the committee was unanimously adopted by the society.

Adjourned at 10.30 o'clock.

— Dr. A. H. Johnson, of Salem, Mass., was tendered a complimentary banquet by his brother physicians of that city recently on the occasion of his leaving home for a six-months' tour abroad.

— Prof. H. C. Wood, M.D., of Philadelphia, has consented to deliver the annual address at the next commencement before the alumni and friends of the Yale Medical School.

THE BOSTON
Medical and Surgical Journal.
THURSDAY, MARCH 21, 1889.

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THE LIMITATION AND TREATMENT OF DIPHTHERIA.

The frequency and the large mortality of diphtheria at the present time make this disease a natural subject of comment at medical society meetings. In the present and the preceding numbers of the Journal will be found a full report of the discussions, with the papers, upon diphtheria in two recent consecutive meetings of the Clinical Section of the Suffolk District Medical Society. No more important topic can engage the attention of the profession than this. As one of the speakers pointed out, diphtheria caused more deaths in Boston alone last year than yellow fever caused in the whole of Florida. Consumption, pneumonia, and diphtheria may be considered the three great scourges of New England to-day.

Small-pox, so long the king of epidemic terrors, has been deposed from that position by the practice of compulsory vaccination and of segregation of the sick. But the Jenner of diphtheria has not yet appeared.

The committee appointed to confer with the Board of Health regarding the possibility of limiting the spread of the disease made their report, which our readers will find in another column.

They point out one difficulty which can be overcome only when public opinion is so instructed and informed as to sustain the health board in enforcing not only the removal of the sick but their retention in hospital until the danger of contagion is passed. This means a special hospital under the authority of the health board (precisely as is the small-pox hospital), and in addition the provision of isolated quarters for "suspects" and for the parents of sick children.

One question which has been sometimes looked upon as a point merely for abstract discussion acquires great practical importance in this view, namely, the relation between croup and diphtheria. Many a case diagnosticated as simple croup and not considered as contagious, has been followed by similar cases among neighboring children, and we feel that an important contribution to the limitation of diphtheria is within the power of the medical profession if they will treat their cases of croup as having infectious potentialities.

Another difficulty in the way of the prevention of diphtheria lies in our ignorance of many of the conditions which cause its spread. Direct contagion is the one important factor that we can and should deal with, but the many outbreaks in which the first case cannot be traced to an antecedent one, and the lack of any uniformity as to the conditions of drainage, water-supply, etc., in the most infected communities, often overturn all our theories as to the extension of the disease. This was well brought out by Dr. Folsom's remarks in the discussion. It is further illustrated by the relative prevalence of the disease in some of the wards of Boston. For instance, ward 25 (old Brighton), which has of late been the heaviest sufferer of any in the city, has no conditions which offer any satisfactory explanation of the fact.

As to the treatment of an actually developed case of diphtheria, medical science has little to congratulate itself upon. The long list of suggested remedies discredits the value of any of them. A specific remedy would seem to be a great desideratum, but the exceeding shortness of the list of true specific medicaments does not offer any immediate encouragement in this direction.

MEDICAL NOTES.

— Further experiments were made March 13 by the New York State authorities to satisfy themselves as to the best means of executing condemned criminals by electricity, says a press correspondent. The first animal experimented upon was a small white cur, weighing 21 pounds. One of the wires was wrapped over some cotton waste, saturated with water, on his right front leg, and the other attached in the same way to his left hind leg. The alternating current at 700 volts pressure was applied for 10 seconds, and the animal died painlessly, without noise or struggle. The second was a black mongrel Newfoundland, weighing 87½ pounds. Connections were made upon the middle of his forehead with a metal plate covered with felt, and upon the right hind leg. Eight hundred volts of alternating current for 15 seconds killed him instantly. Two other dogs, weighing 60 and 35 pounds, were killed in the same way, with the alternating current at 500 and 700 volts for 10 seconds. Four calves of approximately the weight of a man were killed in the same way at 800 volts pressure for contacts of from 15 to 20 seconds. An 800-pound horse then took the alternating current in the same way at 1000 volts pressure for 15 seconds, and died instantly. In every case death was instantaneous and without sound or struggle.

— According to Dr. Ozeretskofski, of Moscow, says the *Lancet*, the existence of hysteria among Russian soldiers is by no means an exceptional occurrence. The affection presents the same diversities of form that it does among women. Frequently men suffering from this affection are put down as malingerers. Other cases are looked upon as instances of serious but somewhat obscure organic disease, the true nature of the case being nearly always overlooked, because it is not generally supposed that soldiers are liable to hysteria. So real, however, does Dr. Ozeretskofski consider the existence of this male hysteria, that, having had an opportunity of studying no less than thirty-eight cases in the Moscow Military Hospital, he is convinced that hysteria ought to be recognized as one of the affections which entitle the subject of it to exemption from military service.

— Carl Zeiss, the widely known manufacturer of lenses, microscopes, and microscopical instruments has lately died at Jena, aged seventy-three years.

BOSTON.

— The monthly report of the Boston Board of Health shows that in February the total number of deaths in Boston was 750. The chief causes of death were: Consumption, 118; pneumonia, 78; heart disease, 56; diphtheria, 42; bronchitis, 38; cancer, 20; croup, 12; measles, 10; typhoid fever, 7. The mildness of the winter has been favorable, for the number of deaths in February of last year was 852, which is a higher death-rate, even allowing for the extra day in the month by reason of leap year. Last year there were only 23 deaths from diphtheria in February, but there were 153 deaths from pneumonia (nearly double the number in last month), and 61 from bronchitis.

NEW YORK.

At a meeting of the Society of Medical Jurisprudence and State Medicine held March 14th, Judge Willard Bartlett, of the New York Supreme Court, read a paper on "Some Relations of Scientific Experts to the Administration of the Law." He first spoke of medical experts used as witnesses in suits for injuries received, and expressed the opinion that it was an unwise plan, and one likely to prove detrimental to the case in which he was interested, for an expert to act both as witness and adviser to counsel on his side, since, no matter how careful and true his evidence might be, a jury would be apt to regard as prejudiced a man whom they saw aiding counsel by suggestions as to questions to be asked. "The attitude of the medical man who is called upon to testify as an expert," he said, "should be, as nearly as possible, one of absolute impartiality as between the litigants. He should be actuated wholly by a desire to be true in his statements of fact, and sound in his expressions of opinion. Many expert witnesses, and particularly young men, are placed at a disadvantage by cross-examining counsel because of their apprehension that they may prejudice the case of the party who has called them if they give the answers which particular questions obviously require. Such fears lead to evasions or objectionable responses, by reason of which causes are sometimes suddenly lost. The really qualified medical expert, who understands what he is testifying about and does not testify about what he does not understand, has nothing to fear from any cross-examiner, provided the doctor is willing to answer the lawyer fairly and candidly."

As to physicians regularly employed by railroads and other corporations to look after suits for damages against them, he regarded their testimony as having less weight before a jury than the evidence of physicians called in for particular cases only, because a jury might be excused for thinking that if a physician so employed were to testify adversely to the interests of his employers his future term of service would not be a long one; but he said that he had no disposition to criticise such corporations for employing physicians to protect them against false or exaggerated claims on account of personal injuries. Indeed he believed they were often instrumental in procuring the adjustment of well-founded claims, and no doubt hundreds of suits were settled every year upon the recommendation of the medical advisers of railway companies.

In speaking of the part acted by physicians in the commitment of persons believed to be insane he said: "It has been urged that a physician who possesses merely the statutory qualifications is not really qualified at all to say whether a person is insane or not, and that a layman could form an opinion just as valuable. But probably very few cases occur in which a certificate of lunacy is given by a physician who does not know something more about insanity than is necessarily implied in the simple statement that he had practised medicine three years. And it is to be observed that the certificate of which we are speaking is not a final determination that the person whom it concerns is insane. It is more like a complaint, containing a statement of facts, which, if true, authorize a temporary detention, at least, of the person against whom the complaint is made. The law contemplates a further inquiry into the mental condition of the alleged lunatic, either by a commission *de lunatico inquirendo*, the medical member of which can be a specialist, or before a jury in open court, where specialists can be called as witnesses. In view of the purpose of the certificate, the requirement that it must be concurred in by two physicians and approved by a judge, and the fact that it is not final or conclusive, I doubt the expediency of changing the law so as to demand evidence of greater special knowledge on the part of physicians before permitting them to act as examiners in lunacy." He said that he knew of no good reason to suppose that there is a single sane person held in restraint as a lunatic to-day under the laws of the State of New York. The popular distrust of the management of lunatic asylums had always been so great, and the horrors attending the incarceration of a sane person in a madhouse appealed so vividly to the imagination, however, that he thought the State could well afford to do something to assure the public from time to time that none but lunatics are confined in these institutions. This might be accomplished through the supervision of the courts, to whose care the interests of all persons of unsound mind are expressly committed by statute. If in each of the five judicial departments into which the State is divided the Supreme Court were empowered to appoint a qualified expert in insanity every year, whose duty it should be personally to examine every person imprisoned as a lunatic within that department, and report the results of his examinations to the court, it would be rendered tolerably certain that no abuses were being perpetrated, and the assurance would be worth all it might cost in the way of compensation to the five physicians for their services.

Judge Bartlett concluded his address by alluding to the part which physicians will take in carrying out the new law providing for the infliction of capital punishment by electricity, and to the difficulties which scientists would have to overcome before that law could be successfully enforced; and expressed the opinion that if the new system was to be successful it could only be made so by the intelligence and effort of scientific experts. "Singularly enough," he went on to say," the people are not to be informed in what manner the new method works — at least, not through the agency of the press. The legislature has resolved upon one of the most important changes in the method of inflicting the death penalty which has ever been attempted in any civilized country, and yet has forbidden the newspapers from publishing any account of an execution under the new law, beyond a simple statement of the fact that the convict was duly executed. I think the propriety of this prohibition is open to grave doubt, irrespective of any question as to the liberty of the press. The endeavor to repress publications which tend to cultivate a morbid and idle curiosity should not be carried so far as to prevent the people from readily finding out how their laws are administered in respect to the gravest offence of which these laws take cognizance."

In the discussion which followed the reading of the paper Judge Hilliard said that the purpose of suits for damages ought to be to develop the actual facts, but that in reality it was generally merely a grab for money. The suits became simply fencing exhibitions between lawyers and lawyers, and doctors and doctors, and he believed that a little more honesty, a little more manhood, displayed by the members of both professions in such cases would be a great gain.

— The annual commencement of Bellevue Hospital Medical College was held at the Carnegie Laboratory on the evening of March 11th. There were 138 graduates, and among the past honor men, entitled to appointment on the house-staff of Bellevue Hospital, was Dr. Austin Flint, Jr., a son of Prof. Austin Flint. The exercises were of an informal character, and included a short address on recent advances in surgery by Prof. Frederick S. Dennis. At their conclusion the annual dinner to the graduating class was given by the faculty at the Hotel Brunswick.

— On the same evening the twenty-third annual commencement of the New York College of Dentistry, was held at Chickering Hall. There were seventy graduates, and the prizes were awarded by Prof. Faneuil D. Weisse. The valedictory address was delivered by John C. Oberle, D.D.S., of the graduating class, and the address to the class by the Rev. Henry Y. Satterlee, rector of Calvary Church.

— The commencement exercises of the Medical Department of the University of the City of New York were held at the Metropolitan Opera House on the 12th of March. The valedictory was delivered by Herbert Lee Costello, and the address to the graduating class, which numbered 180, by the Rev. Howard Crosby, D.D., formerly chancellor of the University.

— The commencement exercises of the Long Island College Hospital were held at the Brooklyn Academy of Music, March 14th. The valedictory was delivered by Carlos Alvarez de la Mesa, and the address to the graduating class, which numbered forty-seven, by the Rev. L. T. Chamberlain, D.D.

— The crew of the bark Fanny Skolfield, which arrived from Calcutta on the 13th of March, after a voyage of 149 days, were in a deplorable condition from the effects of scurvy. One of the number has since died, and it is thought that four other cases will also end fatally.

Miscellany.

A COMPLIMENTARY LETTER TO DR. BIGELOW.

The following letter has been recently forwarded to Dr. Henry J. Bigelow:—

March 12, 1889.

Dear Sir,— Not only in our own name, but equally in that of one hundred and ninety-three members of the Boston Medical Library Association, we desire to express to you the satisfaction that it would give us to have your portrait in the rooms of the library.

We ourselves want, and those who shall come after us will want, to see the portrait of the eminent Boston surgeon to whom such permanent improvement in surgery is due, hanging on the walls of the Medical Library Association, which is the common centre of Medical Science and Art in our community.

G. C. Shattuck.
H. Derby.
E. H. Bradford.
O. W. Holmes.
C. F. Folsom.
H. P. Bowditch.
H. I. Bowditch.
Abner Post.
F. S. Watson.
H. C. Ernst.

Correspondence.

AN INDESTRUCTIBLE COTTON-HOLDER.

Salem, March 16.

Mr. Editor,— Over fifteen years ago the writer stopped using cotton-holders of silver, malleable iron, and the like (Dr. Pomeroy had not then suggested the ingeniously straightened hair-pin with a roughened tip), in cleansing the ear and in making applications of silver, chromic acid, and so on, because it was impossible to prevent them from becoming eroded.

In their stead, he has since used a piece of platinum wire about ten centimetres in length and less than a millimetre in thickness (No. 23 Stubb's gauge). The distal end is scratched with a file, so the cotton may cling to it, while about five or ten millimetres of the proximal end is turned at a right angle (or formed into a ring), which, like the ring on an eustachian catheter, indicates the position of the point when either probing or applying any agent within the middle ear.

It is light, malleable, non-corrosive, so tenuous as not to cut off the light and yet sufficiently stiff for common uses. Its cost is greater but it lasts longer than other holders. One is tenderly called to mind that was lost after ten years of excellent service, and which was still as good as ever.

To those practitioners who desire something more satisfactory than the ordinary cotton-holders, especially in ear-work, one of platinum wire can be confidently recommended. — Truly yours,

David Coggin, M.D.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 16, 1889.

HESLER, FREDERICK A., Assistant Surgeon, detached from Naval Hospital, New York, and ordered for examination preliminary to promotion.

OGDEN, FREDERICK N., Assistant Surgeon, ordered to Receiving Ship St. Louis, Navy Yard, League Island.

BRYANT, PATRICK H., Assistant Surgeon, detached from Receiving Ship St. Louis, and to the Naval Hospital, Chelsea, Mass.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A Regular Meeting of the Society will be held Monday, March 25, 1889, at the Medical Library, 19 Boylston Place, at quarter of eight P.M. Drs. Clarence J. Blake and William S. Bryant: "Reduplications of Mucous Membrane in the Tympanic Cavity, their Frequency and Clinical Importance." Dr. A. T. Cabot: "Laparotomy for Accidents occurring in the Reduction of Hernia"

F. B. HARRINGTON, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

The Sixteenth Regular Report of the Medical and Surgical Staff of St. Francis Hospital, Hamilton Square, Jersey City, N. J., under the charge of the Sisters of the Poor of St. Francis. For the year 1888. Jersey City. 1889.

Handbook of the Diagnosis and Treatment of Diseases of the Throat, Nose, and Naso-pharynx. By Carl Seiler, M.D., Instructor in Laryngology, and Lecturer on Diseases of the Upper Air Passages in the University of Pennsylvania, etc. Third edition, thoroughly revised and greatly enlarged, with two lithographic plates containing 10 figures, and 101 wood engravings. Philadelphia: Lea Brothers & Co. 1889.

The Pathology, Clinical History, and Diagnosis of Affections of the Mediastinum, other than those of the Heart and Aorta. With tables giving the clinical history of 520 cases. Being an essay to which was awarded the Fothergillian medal of the Medical Society of London, March, 1888. By Hobart Amory Hare, B.Sc., M.D. (Univ. of Penn.), etc. Philadelphia: P. Blakiston, Son & Co. 1889.

The Relation between Trophic Lesions and Diseases of the Nervous System. By E. C. Seguin, M.D., President of the American Neurological Association; Member of the Association of American Physicians etc.; Corresponding Member of the *Société de Biologie*, of Paris; of the *Verein für innere Medicin*, of Berlin, etc. Reprint. New York. 1888.

Contribution to the Diagnosis and Surgical Treatment of Tumors of the Cerebrum. By R. F. Weir, M.D., Surgeon to the New York Hospital; Professor of Clinical Surgery in the College of Physicians and Surgeons, New York; and E. C. Seguin, M.D., Member of the Association of American Physicians, etc. 1888.

Lacerated Cervix Uteri as treated at the University Hospital by Professor William Goodell. By Lewis H. Adler, Jr., M.D., Resident Physician, University Hospital, Philadelphia. Reprint. 1889.

REPORTED MORTALITY FOR THE WEEK ENDING MARCH 9, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diph. and Croup.	Scarlet Fever.	Measles.
New York	1,571,558	877	395	21.23	20.13	7.26	5.94	2.31
Philadelphia	1,040,245	435	111	10.12	16.56	2.99	1.84	—
Chicago	830,000	295	149	18.02	8.08	11 56	2.04	2.72
Brooklyn	814.505	398	158	18.50	20.25	9.00	1.50	2.00
Baltimore	500,343	151	48	7.92	12.54	2.64	.66	—
St. Louis	450,000	172	75	16.82	16.82	6.96	—	2.90
Boston	413,567	178	56	12.88	20.72	6.16	1.12	1.12
New Orleans	250,000	114	29	7.92	8.78	5.28	—	—
Cincinnati	225,000	119	—	15.48	18.92	10.32	—	—
Washington	225,000	87	28	10.71	20.23	1.72	—	—
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	17	5	17.64	23.52	5.88	5.88	—
Charleston	60,145	21	7	—	4.76	—	—	—
Portland	40,000	15	1	—	—	—	—	—
Worcester	78,292	31	12	3.23	35.53	3.23	—	—
Lowell	71,518	36	7	13 90	5.56	5.56	—	—
Cambridge	65,552	18	5	11.11	5.55	5.55	—	—
Fall River	62,647	28	9	14.28	7.14	—	7.14	—
Lynn	53,334	15	6	—	6.66	—	—	—
Springfield	40,731	26	9	7.70	11.55	7.70	—	—
Lawrence	40,619	13	3	23.07	—	—	—	—
New Bedford	37.253	6	2	16.66	16.66	—	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34.418	—	—	—	—	—	—	—
Salem	29.011	10	1	—	—	—	—	—
Brockton	28,813	8	1	—	25.00	—	—	—
Chelsea	28,167	10	3	10.00	10.00	10.00	—	—
Haverhill	26,058	8	1	—	25.00	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24.263	—	—	—	—	—	—	—
Newton	21,553	7	2	14.28	14.28	14.28	—	—
Malden	19.774	5	1	—	—	—	—	—
Fitchburg	17.534	3	1	—	—	—	—	—
Waltham	17.332	3	1	—	—	—	—	—
Newburyport	13.875	7	2	42.84	14.28	42.84	—	—
Northampton	13.726	—	—	—	—	—	—	—
Quincy	13.728	5	—	40.00	20.00	40.00	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 3111; under five years of age 1128; principal infectious diseases (small pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 489, acute lung diseases 571, consumption 381, diphtheria and croup 209, scarlet fever 77, measles 49, typhoid fever 47, whooping-cough 44, diarrhœal diseases 31, malarial fever 16, erysipelas 9, cerebro-spinal meningitis 7. From typhoid fever, Philadelphia 21, Baltimore, St. Louis, Cincinnati, and Lowell 3 each, New York, Chicago, Brooklyn, and Washington 2 each, Boston, New Orleans, Cambridge, Fall River, Lawrence and New Bedford 1 each. From whooping-cough, New York 21, Brooklyn 8, St. Louis 3, Philadelphia, Chicago, Boston, and Washington 2 each, Baltimore 1. From diarrheal diseases, New York 15, St. Louis 4, Chicago 3, Boston, and Lowell 2 each, Brooklyn, Cincinnati, Washington, Nashville, and Fall River 1 each. From malarial fever, Brooklyn 5, New York 4, Baltimore, St. Louis, and New Orleans 2 each, Cincinnati 1. From erysipelas, New York 4, Brooklyn 3, Boston and Washington 1 each. From cerebro-spinal meningitis, New York 3, Chicago, Baltimore, Cincinnati, and Boston 1 each.

Original Articles.

A CASE OF HEREDITARY MUSCULAR DYSTROPHY.[1]

BY JAMES J. PUTNAM, M.D.

The patient whose case is to be reported is a woman forty-five years of age and in comfortable circumstances. She has always been in good general health, and has not been exposed to severe muscular fatigue. In brief, her early history offers no explanation of her present symptoms.

She can remember that even as a child she was unable to run and jump like other children. When she was about seventeen years old the failure of muscular power became prominently noticeable, and it has slowly but steadily increased ever since. Her condition at present is as follows: —

She walks excessively slowly, with a waddling gait, using her legs as little more than crutches. When she throws her whole weight upon either foot, as in going up or down stairs, the foot turns so that the leg almost rests upon the ground, and she is wholly unable to get up or down stairs without either clinging with her hands to the balustrade, or going on all-fours.

The hands and arms are still useful members, though feeble. When examined more closely, it is found that the movements of the feet and toes are practically, though not absolutely, abolished, but that all others are possible to a greater or less degree.

The thigh-trunk muscles are excessively feeble, as is shown by the manner in which the trunk is thrown from side to side when the patient walks. She can, however, sit erect, and stands without marked lordosis. Her best movements are those of the shoulders, and the muscles there appear to be in the best condition. The muscles below the knees are excessively wasted, but rather dense, and with the skin drawn tightly over them. The biceps of both sides is also much wasted, looking as if hollowed out at its middle portion. The bellies of the flexor muscles of both forearms are short and rather prominent, and slightly dense to the touch, while at the same time they are very deficient in strength, as is shown by the feebleness of the patient's grasp, and by the fact that the effort is attended by a throwing back of the hand into a position of hyperextension.

There is no sign of muscular hypertrophy or pseudo-hypertrophy, except as indicated by this relatively dense consistency of the flexors of the arms, and the fact that these muscles, although short and feeble, are more rounded and prominent than would be expected.

It will be shown later that hypertrophied fibres were, however, met with, not only in these muscles, but also in others where no outward trace of any hypertrophic process was to be seen. The calves though small are also dense.

The patient's skin is of a dark color, and has been for more than twenty years the seat of chronic psoriasis. The dark color is not, however, confined to the diseased portions. The face is of the same dark shade with the rest of the body, and the muscles there are also rather feeble, although all motions are possible. In masticating food the muscles of the jaw feel weak and get fatigued. The intrinsic muscles of the hand are well preserved.

The patient, who is a very intelligent person, complains that for a long time past she has had an indescribable sensation in her head, which she says makes it impossible for her to collect her thoughts. She also falls down occasionally, not from tripping or losing her balance, but in consequence of some cerebral cause, although she feels sure that she does not wholly lose consciousness, certainly only for a very brief space. Ever since she was seven or eight years old she has found increasing difficulty in committing to memory.

The electric examination, which was made several times with great care, gives the following result: —

Faradic current; facial nerves, separation of coils necessary for minimal response, 120 mm. (that is, a very weak current; the reaction being normal). Ulnar nerve, separation of coil, etc., 123 mm. Median nerve, separation of coil, 105 mm.

The muscles of the thenar eminence react at 120 mm., extensor digitorum longus at 105 mm., flexors of forearm at 105 mm., biceps at 105 mm. (contractions very feeble).

In other words, the facial nerve, the small muscles of the thumb, and the ulnar nerve, show a normal reaction. The reaction of the median nerve is apparently diminished, but perhaps on account of the condition of the flexor muscles. The reactions of the biceps and of the flexors of the forearm are much diminished. The muscles of the lower extremity, below the knee, respond only to maximal currents, — upwards of 70 mm., — when the electrode is applied to the nerve; and a still stronger current than this is required to make the muscles contract by local stimulation. The reaction of the extensor quadratus longus is slightly better, but the contraction is excessively slow and feeble. The reactions to the galvanic current are exactly proportional to those of the faradic. No trace of degenerative reaction is anywhere to be seen.

The patient reports, with regard to her family history, that her father was a vigorous man, and died of cancer at the age of seventy. Her mother was in good health, but had three paralytic attacks in late life and died at eighty six.

The father had two brothers, one of whom began at seventeen to have a similar trouble with that of the patient, and after a time became entirely crippled, so that he could not even hold his head erect, or use any part of the body; but he lived for several years in this condition, and was over sixty years old at the time of his death.

The other brother was well until about twenty-five years old. Then he had some weakness which was called "rickets," and from this he never recovered. He became gradually helpless, so that he could not stand or walk, but could wheel himself around in a chair. He lived to be about sixty, and died within a day or two of the elder brother above mentioned.

The patient's paternal grandfather died from injury, at sixty-five years; health good.

The paternal grandmother died from a paralytic shock at seventy. This grandmother had a sister who became a cripple. The patient does not know at just what age her weakness came on, but she became finally so helpless that she had to be lifted in and out of bed. The family history back of this point is not known.

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[1] Read before the Boston Society for Medical Observation, Dec. 3, 1888.

The patient has a brother who was in the army, and of late has lost his health and is supposed to be in consumption. She has recently heard from him that he is losing the power in his legs, but cannot say to what extent.

The patient had one sister who died of consumption. Four brothers have also died, but mainly from acute affections.

On the mother's side the family were not considered very healthy; one branch was liable to what was called "numb palsy." The psoriasis from which the patient herself suffered, is said to have occurred in the mother's side of the house.

For the five months previous to June, 1888, the patient was treated daily with strong applications of electricity, the combined faradic and galvanic current being used; and has also taken phosphorus, cod-liver oil, and arsenic most of the time. Under this treatment there was a marked improvement in her general condition, which seems to be well established.

The patient can now walk longer distances than before, with less fatigue, and can use her hands for sewing, knitting, and feeding herself better than before the treatment was begun.

Moreover, the universal psoriasis had, by June, practically disappeared, there being only a few spots on the back and on the feet remaining. This disappearance has been gradual, having begun about February or March.

The abscesses also ceased reforming early in the spring. The feeling of confusion and distress in the head also became less, especially during the last few weeks of treatment, when galvanism was applied to the head.

During the summer she was in the country, and soon discontinued the arsenic and electricity, but kept on with the phosphorus and oil. The gain in strength maintained itself, but the distress in the head increased, and the psoriasis returned.

I attribute the previous gain mainly to improvement in nutrition and nervous energy, through the tonic, and in part through the electric treatment, rather than to a definite change in the muscular condition. The electrical investigations led me, however, to think highly of the use of the combined faradic and galvanic currents as recommended by De Watteville, which made it possible to obtain contractions with weaker faradic currents than would otherwise have been necessary.

It was remarkable that the contractions obtained in this way were increased not only at the moment of closure of the galvanic circuit, but during the flow of the current.

As regards the psoriasis, its disappearance may of course have been accidental; but as this had never happened before, within the patient's memory, it seems fair to attribute it mainly to the arsenic treatment.

Two pieces of muscle were removed last June for examination, — the first from the right biceps, at the part where the muscle was so much atrophied that a sort of excavation had taken the place of the usual bulging of the muscle; the second from the right flexor communis digitorum.

The biceps was one of the muscles that still responded to voluntary effort, and also to the faradic current, but slowly and feebly. The reaction to the galvanic current was also diminished; but there was no excessive action of the positive pole, nor was the contraction slower than under the faradic current.

The forearm muscle contracted better than the biceps, where the cut was made, but still slowly and feebly. The belly of the muscle was also markedly shorter than normal.

The piece from the biceps muscle was examined fresh, and also after hardening in Müller's fluid. The fresh specimens showed, here and there, a partial or complete loss of transverse striation, though most of the fibres had preserved their striations. Many of the fibres were marked longitudinally by fine granules, arranged in lines and spindle-shaped forms, and probably consisting of fat. Another change, seen in both fresh and hardened specimens, was a tendency to split up into fibrillæ, some of which showed transverse striations, and some no striations.

The hardened specimen was cut in both longitudinal and transverse directions, and the sections stained in various ways.

The transverse sections showed, first, a very striking variation in size between individual fibres, the smallest being less than half the size of an average muscle fibre; the largest, much larger than an average fibre. The corners and edges of these fibres, instead of fitting together, with fine lines between them, are rounded off, and more or less widely separated, the interstices being filled up by connective tissue containing here and there a large number of small round cells, and in other places but few cells.

The shape of the individual fibres also varies greatly, not only because of the direction in which they happen to be cut, but also because a portion of the fibre is often destroyed.

When examined separately, a large proportion of the muscular fibres appear to be altered. They are marked longitudinally by fine lines, as if teased with a comb, and the fibre is thus broken up into smaller or larger divisions. There is also evidence of a gross destructive process which has sometimes gone so far that the central portion of the fibre seems to have been destroyed. In other places the fibre looks as if only irregularly thinned toward its centre. Many of the fibres have a practically normal appearance. At one point, a fibre, in the midst of a muscular bundle, seems to have been entirely destroyed, only its outline being left, filled with cells which are about the size of muscle cells, though varying sometimes in dimensions.

The blood-vessels appear, on cross sections, to be surrounded with round cells to a moderate degree.

On longitudinal sections the most striking appearance is that of the splitting up of the muscle into fibrillæ, both where the section cuts obliquely across the end of a muscular fibre, where the fibrillæ appear frayed out, as by a comb, and also in the course of the fibre, giving rise to a marked longitudinal striation, with sometimes an appearance as if the fibre had been scored with a knife. Most of the fibres, even where this change has taken place, have preserved their transverse striation.

There is almost everywhere a considerable number of cells in the interstitial connective tissue, but in some places this is greater than in others. The sarcolemma nuclei are also here and there increased in number, but not uniformly.

No intramuscular nerves could be found on these sections.

The piece taken from the forearm was examined fresh, and also after treatment with chloride of gold and formic acid, this method being chosen in the hope of finding the nervo-muscular, terminal plates. It may be said, in brief, that a similar difference was found in the size and shape of the muscular fibres from this specimen, as in that from the biceps; but both large and small fibres presented a more normal appearance than those from the biceps, and had preserved their striation.

A small nerve-fibre was found in one preparation and traced up to the muscle, but no terminal plates were seen. The nerve-fibre itself appeared to be perfectly healthy.

The subject of the muscular dystrophies and their relation to the muscular atrophies of spinal origin has recently received exhaustive treatment at the hands of Schultze[2] and Wagner,[3] and, more recently still, of Dr. B. Sachs, of New York, whose views are set down in a paper read at the recent congress at Washington.

It is not my purpose to speak of this part of the subject further than to make it clear where the case just reported belongs, and the grounds on which the diagnosis is based.

The dominating theory with regard to the pathology of muscular atrophy for the last twenty years has been that of Prof. Charcot and his school, whose brilliant generalizations assigned to the anterior gray matter of the spinal cord a greater share in controlling the nutrition of the muscles than later observations have shown to be well founded.

Friedreich had previously reported certain cases for which no unequivocal spinal cause could be discovered, but in the desire for pathological simplicity these cases were usually passed by by later writers, or thought to be exceptional, or to be based on insufficient microscopic examination.

Even the so-called pseudo-muscular hypertrophy was widely believed to be also of spinal origin, although the anatomical evidence in favor of this view was of the most meagre description.

The almost universal content with the spinal theory was temporarily shaken by a publication on the part of Prof. Lichtheim of Jena, in 1878,[4] of a case, not precisely similar to those which have been considered most characteristic of spinal diseases of this class, but still of the same general character, where no affection of the spinal cord was found.

Since about this time the pendulum has been swinging slowly backwards. German, French, and English observers have reported cases, usually presenting certain clinical peculiarities as regards the distribution of the affected muscles, age of the patient at the time of the outbreak of the disease, and other points, which distinguished them apparently from the typical progressive muscular atrophy of spinal origin on the one hand, and pseudo-hypertrophy on the other, and some of these cases were shown to be unassociated with spinal lesions.

In the course of the few years, moreover, another pathological group has come into prominence, tending to introduce still further complications. This is the group of muscular atrophies due to peripheral neuritis. So far as we now know, these are generally characterized by the presence of sensory symptoms, by the relative rapidity of their onset, their curability, and their etiology, but these marks are not always present.

As the matter now stands, the question presents itself, can we, in a given case, distinguish with confidence whether a progressive, generalized muscular atrophy is of spinal origin, or is due solely to a primary affection of the muscles, or, finally, whether it is due to neuritis?

The most satisfactory way to approach the problem is to take first the typical cases. Thus, we have at one end of the line the typical progressive muscular atrophy, to which the names of Aran and Duchenne are often attached, of spinal origin, and of such cases there are several forms, distinguished by the distribution of the primary symptoms.

The most familiar form is that where the small muscles of the hands are the first to be attacked, but it is now well recognized that other muscles of the body, such as the shoulder and lumbar muscles, and, as Dr. Sachs points out, certain muscles of the leg, may be the first to suffer.

In all these cases there is usually fibrillary twitching, and sometimes a history of muscular strain or hereditary predisposition, and a careful electrical examination usually shows in certain muscles, and at one or another stage of the disease, the so-called reaction of degeneration. Not infrequently, in these cases, the deep reflexes are exaggerated, either on account of a condition which we can only describe by the vague term gray matter of the spinal cord, or else on account of sclerosis in the lateral columns, which Dr. Gowers believes to be regularly present.

The mention of the latter change leads us naturally to mention the opinion which has been expressed by various writers, that this form of progressive muscular atrophy is indistinguishable from the so-called amyotrophic lateral sclerosis. The progressive muscular atrophy of spinal origin is almost always a disease of adult life.

At the other end of the line we have the typical pseudo-muscular hypertrophy of children, with its strongly marked hereditary taint, its great liability to occur in the earlier years of life, and its peculiar distribution of local signs.

The examination of pieces of muscle, obtained after death or by excision, are apt to show, besides an excessive proliferation of fat and connective tissue, changes in the size and shape of the fibres themselves, the hypertrophy of individual fibres being considered especially characteristic.

In this disease no evidences of marked changes have been found in the spinal cord, and observers generally agree in considering it a developmental and formative disease of the muscle. There is no fibrillary twitching, no exaggeration of the reflexes, no disorders of sensibility, and no reaction of degeneration.

Between these typical forms of progressive muscular atrophy there are intermediate cases, with regard to which the diagnosis is not so easy: and if we examine closely the features that are supposed to characterize one and the other group we find that there are none which are absolutely pathognomonic (compare Schultze, *loc. cit.*).

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[2] Progressive Muskelschwundt, etc., 1886.
[3] Deutsches Arch. f. kl. Med., vol. 40, Polymyositis Acuta.
[4] Arch. f. Psych., vol. 8.

The best that we can do in a given case is to make a diagnosis according as the symptoms resemble the most strongly those observed in one or the other of the typical extreme cases, and it must be admitted that if we follow this rule with care we shall rarely go wrong.

In the present case, for example, the first symptoms were seen in childhood; the progress has been excessively slow: the disease is markedly hereditary; the excised fibres show the peculiarities in size and arrangement usually considered characteristic of the muscular dystrophies, and no unequivocal signs of disease in the spinal cord or peripheral nerves have been present.

Reference has already been made to a paper of great interest by Prof. Wagner, published in the *Deutsch. Arch. f. klin. Med.*, 1887, and it is in place here to speak of it a little more at length.

This paper gives a description of a case of progressive muscular atrophy, terminating eventually and pretty rapidly in death from affection of the respiration, which presented the striking history of an acute onset, with signs of muscular inflammation, so unusual in both the primary and the spinal form of progressive muscular atrophy, and suggesting in some respects the muscular atrophy due to acute neuritis, or infectious disease.

Here also, changes in the size and shape of the muscular fibres were present, together with signs of destruction of the central portion of the fibres, as in the present case.

No change of consequence was found either in the central nervous system or the peripheral nerves, and the case, especially in the light of the critical analysis which is given with it, is important as pointing to a new relation of these chronic muscular degenerations, namely, to inflammatory disease.

The importance of this inflammatory influence has likewise been pointed out by Dr. George Jacoby of New York, both in his paper on progressive muscular hypertrophy, published in the *Journal of Nervous and Mental Disease*, 1888, and in a communication at the recent meeting of the Neurological Association in Washington.

It has already been said that there is an occasional difficulty in distinguishing the muscular atrophies due to peripheral neuritis from these other, more chronic, central and primary forms. This is a difficulty, it is true, which does not often exist, but it is one which, when it does occur, is of the highest possible importance, because the muscular atrophies due to neuritis, even though they may progress to an extreme degree, are, as a rule, curable, which the others are not.

To this generalization as to the incurability of all these latter forms the exception should be made that cases similar to Wagner's, which have been believed to be of inflammatory origin, have once or twice recovered, but in this case, of course, the question at once arises whether the diagnosis was correct. This doubt becomes all the greater in view of the fact which recent investigations have proved beyond question, namely, that subacute neuritis may run its course and give rise to muscular atrophy of a high grade, without giving rise to any disorders of the sensibility such as are usually considered to be necessary for the diagnosis.

A striking case of this kind has recently been reported, which is all the more important because it was observed by Pitrès and Vaillard, who have long been careful investigators of the subject of neuritis (cited in the *Centralblatt f. Nervheilkunde*, for October 1, 1888).

The case was, in brief, one that from its history and course was believed to be one of subacute, anterior poliomyelitis, whereas careful examination showed the spinal cord to be practically normal, while peripheral neuritis was found to be present, and was the evident cause of the symptoms and death.

I will refer also, in this connection, to three cases, all of my own observation.

One of these was reported in the BOSTON MEDICAL AND SURGICAL JOURNAL of July, 1888, as a case of possible arsenical paralysis. Here also, in view of the rapid improvement, the diagnosis of neuritis seems the most probable, but the possibility of primary myositis could not be excluded. No disorders of the sensibility were present, except pain.

The second case, for the opportunity of examining which I am indebted to Dr. Francis Minot, was that of a young man of fifteen, the only assigned cause being a moderate over-exertion and exposure in athletic sports. Here also the muscular atrophy, for some months rapidly progressive, came on and ran its course without either marked or lasting disorders of sensibility, and presented a symptom suggestive, though not pathognomonic, of progressive muscular atrophy of spinal origin, namely, early atrophy of the small muscles of the hands, which however, never reached a high grade. His eventual complete recovery makes it, however, more than probable that we have here also to do with the elusive neuritis.

The third case is that of a man now under observation at the Massachusetts General Hospital, whose muscular system has undergone such excessive wasting, in the space of less than three months, that one arm hangs motionless at the shoulder and elbow, and the deltoid scapular muscles and biceps have almost wholly lost their electrical irritability to both currents. The intrinsic muscles of the hands are moderately affected, but the forearm muscles are relatively intact.

All four extremities are involved to some degree.

The only sensory disorders have been an initial severe pain in one calf, and a temporary and moderate paræsthesia of the legs and right arm.

There was no fibrillary twitching.

A history was given of alcoholism and exposure.

The diagnosis of neuritis seemed to me well justified, and the case interesting as one of those in which the larger trunk-extremity muscles are the ones most severely attacked.[5]

With regard to the significance of the apparent hypertrophy of some of the fibres seen in this case, and so frequently commented on by writers, it is to be remarked that Dr. Gowers, in his admirable treatise upon pseudo-muscular hypertrophy, claims that these appearances are not found except in specimens which have been excised, or obtained with the aid of the harpoon, and believes them to be merely an indication of ante-mortem contraction excited by the excision.

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[5] See a paper by the writer on "Paralysis and other Serious Symptoms from Medicinal Doses of Arsenic," Boston Med. and Surg. Jour., July, 1888.

In support of this view he described some interesting experiments on the muscles from an amputated limb, and also points out that the striations in these larger fibres are apt to be nearer together than in the smaller ones. I am inclined to believe with Dr. Gowers that this is at least one cause of the change observed; especially as I have recently seen a statement of the finding of such fibres in a case of arsenical paralysis.

It seems to me, however, that it would be hasty to assume that it is the only cause, and it is not necessary to go further than to Schultze's paper, in which the muscles were carefully examined after death, as well as through excision, to show that it is incorrect to say that the enlargement has not been observed in specimens obtained through autopsy.

The same change has also been observed, as Wagner points out, in the neighborhood of muscular tumors.

It is certainly not peculiar to pseudo-muscular hypertrophy, or the muscular dystrophies in general; and in looking over a series of very interesting sections from a typical case of chronic spinal muscular atrophy prepared by Dr. W. F. Whitney, I found many to which the term hypertrophy seemed quite applicable, although the great majority were exceedingly narrow.

I did not, however, find anywhere very large and very small fibres jumbled together side by side, as in the case here reported.

DERMATITIS GESTATIONIS;

THE HISTORY OF A RECURRENT DERMATOSIS.[1]

BY JAMES C. WHITE, M.D.,
Professor of Dermatology in Harvard University.

I PURPOSE to give a brief account of the changes which have taken place in the skin of a young married woman during the past two years. I first saw her in November, 1886. She was then twenty-two years old. Her general health, and the condition of her skin, had been perfectly normal until after the birth of her first child in July of that year. Three weeks after that event, from which she made a good recovery, there appeared upon her front chest a "fine rash," which her attending physician called an eczema. Three days after its outbreak she visited the seashore and ate some clams, and on the following day her whole skin became intensely red, and a few wheals made their appearance, accompanied by great itching. The affection was supposed by the family to be nettle-rash, but as it persisted Dr. Whittier was called, who has kindly given me the following account of her condition at that time: —

"I first noticed across the upper portion of the chest in front, and not dependent upon any disturbance in the breasts, a pronounced erythema, with papular elevations and wheals, varying in outline and in length from a few lines to nearly an inch. The entire surface conditions were associated with slight constitutional disturbance (fever, etc.), but with a degree of heat and irritation very difficult to allay or control. My period of observation of Mrs. X. covered about six weeks. During this time, beginning on the chest, and quite rapidly at the outset, and more slowly as the extremities became involved, the eruption invaded the whole surface of the body, but did not involve to any particular extent the face or scalp. About the waist and genitals, on the inside of the thighs and forearms, the redness was extreme, and papules and vesicles abounded with exudation and desquamation, and most intolerable burning, itching, and painful sensations. I concluded that the disease in its entire stages was an intense urticaria, dependent upon parturition and some error in ingesta or digestion, and that later on, and because of the intense local irritation, much aggravated by a lack of power of control on the part of the patient (it was impossible to keep her from scratching), a true eczema was set up. The treatment was local and constitutional, and a wash of zinc oxide with lime water was most satisfactory, while iron, quinine, and strychnia in the earlier stages gave place to Fowler's solution later on."

I first saw Mrs. X. as an out-patient at the skin department of the Massachusetts General Hospital nine weeks after her confinement, whither she had been referred to me by Dr. Whittier. Her face then presented appearances which would have been regarded as those of an ordinary eczema of subacute type, viz., papules, excoriations, and scales, with diffused redness and considerable cell infiltration. The general surface elsewhere, however, exhibited manifestations of chronic urticaria, areas of fugitive erythema, and sparse wheals. The skin in all parts returned to a normal condition in two or three weeks under a soothing local treatment.

Second Attack. — Six months after her recovery, during which time the patient remained in good health in all respects, I was called to see her. I found her in bed, with a skin of an intense redness everywhere. Upon the limbs were a few wheals. There was a sensation of great heat and itching over the whole surface. She complained of slight nausea, headache, and frequent chills. The tongue was somewhat coated, and the pulse a little accelerated. Thirty-six hours previously she had eaten roast pork, and twenty-four hours afterwards the cutaneous symptoms had begun to manifest themselves, without marked signs of intestinal disturbance, and rapidly developed to the condition present at my visit. The indications at that time were those of a universal urticaria rubra. The skin was everywhere thrown up into firm, white, and prominent ridges on scratching it (dermographismus). On the following day I found that the general erythematous condition had persisted, but that the intensity of the redness had somewhat abated. The skin still itched exceedingly, and wheals of various sizes occasionally appeared. The constitutional disturbance was less. The uniform redness remained three or four days, and wheals appeared with diminishing frequency for the same period. Then an abundant desquamation over the whole surface followed, which continued several days, after which the skin recovered its normal condition. During this attack the only tissue changes or lesions were the erythema, wheals, and scales. The case appeared to me throughout to be an exceptional form of urticaria.

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[1] Read by invitation before the Obstetrical Society of Boston, January 12, 1889.

Third Attack.—At Easter, 1888, I was again called to see Mrs. X. She was then two months pregnant. She had eaten two days previously a lobster salad, and in the course of the following twenty-four hours her skin had assumed the same condition as at the last attack. It was universally of an intensely red color, and presented numerous wheals of various sizes. There were also large areas of œdematous swelling, especially upon the legs. There was very little gastric disturbance, but hypercatharsis following the administration of some laxative before I saw her. She complained chiefly of itching and chilliness. On the fourth day a few of the wheals had assumed a bullous condition, so that by confluence some of the blebs were of considerable size, and later were converted, by the removal of their coverings through contact with the clothing, or by decubitus, into moist, denuded areas. Excoriations were also developed by scratching. The general erythema subsided after a few days, and was succeeded by desquamation. By the end of the second week all cutaneous symptoms had disappeared.

Fourth Attack.—Mrs. X. remained well during her pregnancy until a week before the birth of her child, which took place November 8, 1888. On November 1st, without any known imprudence in diet, she had several chills accompanied by repeated vomiting. On the following day her skin became universally reddened, and presented here and there small water blisters, which became larger. There was much itching, and later slight scaling. The process was not seen by any physician, and the skin had returned to its natural condition before confinement. November 11th, three days after delivery, which was normal, the secretion of milk ceased, and on the following day, November 12th, a burning sensation was experienced in the back of the neck, which spread rapidly over the whole surface. The skin became at the same time intensely red everywhere, and very irritable. There were repeated chills and vomiting. On the fifth day after delivery, November 13th, large bullæ appeared upon the back, leaving raw, bleeding, and very painful surfaces. On November 15th she was seen by Dr. Tilden in consultation, who reported the presence of small vesicles upon the shoulders in addition to the intense general hyperæmia of the skin. Dr. C. M. Jones, the attending physician, states that at this time the lochial discharge was brownish, but not offensive. She had had after delivery a vaginal douche of corrosive sublimate, and later one of the same composition within the uterus. The temperature at this period varied from 101° to 104°.

November 16th the patient was admitted to the Massachusetts General Hospital under the care of Dr. E. N. Whittier, who kindly permitted me to see her daily. I found her on the next day in bed. The skin universally was of an intense redness, shining and tense, as if scalded. A few moderate-sized blebs were seen, but no small or clustered vesicles, nor were any well-marked wheals present. The upper portions of the back presented large areas denuded of epithelial coverings, from which serum and blood were oozing freely. The patient's general condition was feeble; pulse 120, respiration 30, temperature 103°. She was enveloped in cloths soaked in liquid vaseline, as scalded patients are there treated. By my advice lard beaten up with rose water was substituted for this dressing, spread thickly upon cotton cloth, and with this was mixed boracic acid for application to the denuded surfaces. Quinine had been given since her admission, but this was omitted for fear of its possibly irritant action upon the skin. On the 19th the general hyperæmia had much diminished in intensity, and the denuded areas upon the back and shoulders had not increased in size. Fresh bullæ had appeared, scattered over the trunk and limbs especially, but they were smaller than at first. Their contents were sero-purulent, but in one upon the ankle they were hæmorrhagic in character. On November 21st the skin over the nates and lower back seemed to break down under the pressure of decubitus, as if necrosed, and was converted into a nearly uniform shallow ulceration, which bled freely on changing dressings. Small pustules began at this date to appear in great numbers upon the backs of the hands and forearms, and upon the lower legs. There was an improvement in the patient's general condition, her strength was greater, and her appetite stronger. On November 23rd but little general hyperæmia was left. The denuded surfaces upon the shoulders were nearly healed, and the extensive ulcerated areas over the lower back were assuming a healthy appearance. New crops of small pustules were developing over the limbs, and a few deep furuncular processes had appeared upon the left breast. On the 26th the face also was thickly occupied by the small pustular efflorescence, and upon one cheek two additional furuncles were present. The pulse, respiration, and temperature had by this time nearly regained their normal state. The patient was removed from the bed to a couch. On the 28th fresh crops of superficial pustules were appearing, chiefly upon the head and arms, with a few new furuncular lesions. The excoriated and ulcerated surfaces had nearly healed. The general surface of the skin, when not kept covered by the lard dressing, was in a state of desquamation.

From this date no new changes took place in the condition of the skin except those of slow involution, and on December 4th she left the hospital. On December 14th the skin was still desquamating in a few parts, and the pruritus continued. It had regained its natural color. There were no new pustules, but the seats of the old ones were still marked by a deep redness. Three new large boil-like processes, however, had appeared upon the right wrist. At my last visit, on December 21st, the skin had returned to a normal condition.

To this account of the cutaneous affection of Mrs. X. must be added that of three of the four nurses who were in attendance upon her in this last attack. Nurse one had charge of her before her admission to the hospital. Nurses two and three were constantly employed in changing the dressings and turning her in bed. All of them had develop upon the backs of fingers, hands, or wrists from two to four firm, deep-seated, indolent, furuncular abscesses during the second week of the patient's attack, which were very painful, and disappeared slowly after poulticing and evacuation by incision. There was no constitutional disturbance in any of them. In the fourth nurse, who was also in constant attendance upon her in the hospital, and engaged in the same duties as the others, there were no such manifestations. It should be added that the three affected nurses were accustomed to handle all sorts of surgical dressings, and that their hands had never previously exhibited any such manifestations; also that there were no irritating qualities in the dressings employed.

How then shall we interpret this history of Mrs. X.'s cutaneous condition of the past two years? We have a young woman, who before marriage and during the first pregnancy had had a perfectly healthy skin. Three weeks after a normal confinement an acute universal dermatosis developed, apparently an urticaria, and later a vesicular efflorescence of an eczematous type at least. When first seen by me the affection had lasted six weeks, and the appearances at that time were those of a subacute eczema of the face and a chronic waning urticaria of the rest of the general surface, all of which rapidly disappeared under treatment.

Six months later an apparent intense general urticaria rubra appeared, followed by universal desquamation, the whole process lasting ten days.

One year subsequently, during the second month of her second pregnancy, there was essentially a repetition of the previous attack, excepting the occurrence of bullæ also.

Lastly, a universal erythematous condition, followed by desquamation, a week before the end of the same pregnancy, and a recurrence of the same four days after delivery, with subsequent cutaneous changes of much severer grade, more diversified type, and more serious constitutional disturbance than in the preceding attacks.

Two of these, the first and last, occurred soon after delivery, the third took place during early pregnancy, whilst the second and third followed immediately the ingestion of articles of food which not infrequently produce similar gastric, constitutional, and cutaneous disturbances. Three of them were, therefore, connected with pregnancy. In all of them a universal and intense erythematous state of the skin was the first cutaneous manifestation, followed in each instance by general desquamation. In the first three, wheals were the subsequent most prominent and persistent lesion. Vesicles or bullæ were present in all but the second attack, that, namely, which occurred during the quiescent state of the uterus. In the last the inflammation of the cutaneous tissues was so intense as to cause very extensive destruction of the vitality of the outer layers, marked by denudation and shallow ulceration over wide areas; and later there were developed successive crops of superficial pustules in great numbers over the head and extremities, and a few deeper seated furuncular processes.

Now what do these manifestations indicate or suggest? Where should we place such an affection in our list of skin diseases? The first three attacks might be called urticaria rubra, and possibly the prodromal symptoms of the last might also be thus explained. In the third, and perhaps also in the first one, the vesicular or bullous efflorescences might be regarded, too, as indicating an urticaria bullosa. In the first attack the moist lesions were regarded as of an eczematous nature by Dr. Whittier, and when I first saw Mrs. X. the condition of the integument of the face seemed to warrant the correctness of this diagnosis. An eczema may indeed follow an urticaria, induced by the pruritus and scratching associated with the latter. But urticaria is seldom accompanied by so persistent and general a hyperæmia, or followed by such a universal desquamative process, as were present in each attack, or by such deep necrosis of the skin as in the last one. Neither do such successive outbreaks of impetiginous efflorescence ever, nor furuncular lesions ordinarily, follow true urticaria. It is evident that we have here some dermatosis more than an ordinary urticaria in the first three attacks, while in the last one there were no lesions typical of its presence. In the last attack the impetiginous and furuncular character of the lesions points to a possibly septic process, and the constitutional disturbances in its early history, the high temperature, rapid pulse and respiration, and chills, would seem to confirm such an influence. The occurrence of similar furuncular processes upon the hands of three of the four nurses who were in attendance upon the patient seems moreover to indicate its infectious nature. Indeed this latter conclusion seems to be inevitable. Other than these, however, there were no symptoms of a septic or pyæmic process in the general condition of the patient. Such forms of universal scarlatiniform erythema, followed by desquamation, have been frequently observed in pyæmia, and in one instance at least associated with urticarial lesions. Such forms of erythema, too, are well known after surgical operations. The universal cutaneous hyperæmia, and the subsequent purulent lesions in the patient, and the infection of the nurses, might then be plausibly regarded as positive indications of a septic or pyæmic dermatosis in the former; but no such theory can possibly explain the identical erythematous condition and desquamation which have been present in all the attacks.

Have we, then, any well-recognized disease of the skin characterized by erythematous, urticarial, vesicular or bullous, impetiginous, furuncular, and desquamative lesions, and accompanied by pruritus, chills, and occasionally by rapid pulse, respiration, and high temperature? We may certainly call the case a multiform dermatitis, but is it an example of that very versatile affection, not yet sharply enough defined, by Duhring called dermatitis herpetiformis, more correctly in my opinion dermatitis multiformis, and more particularly that form entitled by Brocq dermatite polymorphe prurigineuse recedivante de la grossesse, the herpes gestationis of others? It is in this latter group, I believe, we must place it. The case is a striking illustration of the polymorphism of the cutaneous lesions of the disease. It demonstrates, too, the narrowness and inaccuracy of the title herpes gestationis, inasmuch as it never exhibited, under my observation, the small grouped vesicles which are typical of herpes, and occurred once independently of pregnancy or its sequelæ. It shows, moreover, how we have in the latter condition a pronounced impetiginous dermatosis without a feature suggestive of Hebra's impetigo herpetiformis.

The following analysis of some of the points in the twenty-two cases collected by Dr. Brocq may be of special interest to members of this society. These cases received various titles by the observers under whose care they occurred, such as herpes gestationis, pemphigus, pemphigus pruriginosus, herpes circinatus bullosus, acute pemphigus, pemphigus hystericus, dermatitis herpetiformis, hydroa gestationis, peculiar eruption during pregnancy, and erythema gestationis.

The occurrence of the disease during pregnancy took place in the first month once, in the third month five times, in the fourth month three times, in the fifth month five times, in the sixth month once, in the seventh month three times, and in the eighth month once. After delivery the eruption appeared on the second day in one case, on the third day in three cases, on the fourth day in one case, and on the fifth day in one case. The period of development varied greatly in successive attacks in the same individual. The disease occurred in two pregnancies in five individuals, in three pregnancies in four individuals, in four pregnancies in one individual, in six pregnancies in two individuals, and in eight pregnancies in one individual. The tendency to an increasing intensity in the severity and duration of the dermatitis in successive attacks was observed. The cutaneous manifestations occurring after delivery were generally graver than those noticed during pregnancy.

It has not been my purpose before this society to consider the much discussed questions of the pathology and etiology of this interesting group of affections, but to confine myself to a brief record of the case. Mrs. X. has shown that she has a skin which, under the impression of irritating ingesta, and the conditions of pregnancy and childbirth, apparently normal in themselves, may be thrown into a state of universal dermatitis multiformis. The rare features of the case are the necrosis of the cutaneous tissues over large areas through the intensity of the inflammatory process, and the demonstration of its infectious character in one of the attacks by the simultaneous development of purulent lesions upon the hands of the attendants.

Post scriptum. — January 7th Mrs. X. called upon me and exhibited an extensive urticaria of ordinary type, that is, well marked wheals of various shape and size, or white elevations surrounded by a red halo. There were no other cutaneous phenomena, nor was there any constitutional disturbance. She stated that since my last visit the skin had remained in a healthy condition until the previous evening, when the above manifestations presented themselves. Her diet for the preceding forty-eight hours had been of the simplest nature.

On inquiry she stated that the first attempt at sexual intercourse since confinement, a few days previously, had been very painful and was immediately followed by severe uterine colic, which was only relieved after a duration of twelve hours by an injection of morphia. The catamenia appeared for the first time since delivery on the following day.

This attack of urticaria lasted but twenty-four hours. Its source may well be referred to the revival of uterine agitation.

CASE OF CRANIOTOMY IN FIRST LABOR; INDUCED PREMATURE SECOND LABOR WITH FAVORABLE RESULTS.[1]

BY EDWARD REYNOLDS, M.D.

Mrs. S., a primipara and an out-patient of the Boston Lying-in-Hospital, had been in labor sixty hours when I first saw her. Her temperature was then 101.4° F., pulse 124, fœtal heart 152.

The vertex presented O. D. A., the caput was large, and the head was still free above the brim, although the os was of the size of a dollar and offered no resistance to dilatation, and although good pains had been present for many hours.

Bandl's ring was found by the examining finger about an inch above the symphysis pubis, and a constriction ring somewhat higher.

Dr. C. M. Green saw the case with me, and we made a careful measurement of the pelvis, with the following results:

Distance between anterior superior spines...	9	inches.
" " iliac crests....................	10¼	"
External conjugate..........................	6½	"
Diagonal "	4	"
Depth of symphysis..........................	2	"

The whole pelvis was of extreme justo-minor type, the promontory high above the brim, the symphysis long and erect. The true conjugate was thought to be not more than three inches, if as much.

It seemed evident that the delivery of a living child was impossible, but as a precaution the forceps was applied and traction made, but without effect.

The advanced stage of labor and the marked exhaustion of the uterus was thought to contraindicate the Cæsarean section, and craniotomy was decided upon.

The head was very firmly ossified, and this, with its free mobility, and the extreme length of the pelvis, made the perforation difficult, but an opening was finally made in a suture.

The extraction was very difficult; much force was necessary; the cranioclast tore away many times, and the greater portion of the skull had been removed piecemeal by craniotomy forceps before the delivery of the head was accomplished.

The extraction of the body was even more slow and difficult than that of the head, the whole operation lasting nearly three hours. The cervix was torn to ribbons, and the perinæum to the sphincter ani.

The woman was a strong Russian peasant, and in spite of the severity of the operation made an uninterrupted and surprisingly rapid recovery, being discharged well on the fourteenth day.

The child weighed eight pounds in its decerebrated condition.

The woman subsequently entered the Boston City Hospital, where her cervix and perinæum were repaired by Dr. Green.

In the autumn of 1887 she found herself again pregnant, and reported the fact to Dr. Green, who advised her to enter the Lying-in-Hospital for the induction of labor at seven months. This she refused, but again became an out-patient.

In view of the improbability that a seven months' child would survive the want of exact care to which it would necessarily be exposed in her home, it was decided after consultation to allow her to wait till the middle of the eighth month before inducing labor.

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[1] Read before the Obstetrical Society of Boston, January 12, 1889.

The last catamenia ceased on August 8, 1887, but on account of the two weeks of abstinence enjoined by the Jewish religion, the probable date of labor at term was considered to be May 23, 1888, and April 13 was fixed upon as the date for the induction of labor; but when that day arrived Mrs. S. refused the operation, saying that her husband was away from home and that she must wait ten days for his return.

The husband returned on the 22nd, and on the 23rd Dr. Green passed a bougie into the uterus and tied it in place, Messrs Dunham and Tilton, of the Harvard Medical School, being in attendance.

I saw her the next morning, and found that pains had appeared, weak but regular, no dilatation of the os, a slight show of blood. Presentation transverse, head to the left, easily rectified by external version.

That afternoon the pains became strong and regular, and the bougie was expelled, but from this time on they decreased, and stopped during the night.

The next afternoon, the 25th, I saw her again, dilated the os manually till it admitted three fingers, and tied in a large bougie. During that evening she had good pains every five minutes, but by 3 A.M. of the 26th the pains had ceased, the bougie still in place.

At 11 A.M. I saw her, and finding labor absent and the os recontracted around the bougie, but still soft and dilatable, again stretched it to about the size of a dollar, withdrew the bougie and passed a large colpeurynter into the lower uterine segment. This was then inflated with a 1:3000 solution of corrosive sublimate, until it put the os well upon the stretch, and left *in situ.*

Good pains shortly came on and increased in strength, till at the end of three hours their force became so great that the colpeurynter burst and was removed, good labor being present, and the os larger than a dollar, but from this time on the pains decreased, and at 6 A.M. had ceased again.

That morning at 10 A.M. (four days after the insertion of the first bougie) I found labor absent and the os admitting but one finger. No presenting part could be felt *per vaginam,* but on palpation the head was found at the fundus, the breech presenting. Patient's general condition still good.

She was then etherized, the os manually dilated to full dilatation, and the hand passed into the uterus; when the breech was found to be resting above a very rigid constriction ring, which scarcely admitted four fingers, and was situated about two inches above the pubes.

This was with some difficulty dilated manually to a degree which permitted the passage of the closed fist; the child was then turned by combined version, and every effort was made to bring the head through the ring with the hand, but as all these attempts failed and a forceps operation at that height in the abdomen would have been very difficult, the membranes were ruptured and the head held in position until the patient had recovered from ether.

First-rate labor then came on, and at the end of six hours the head passed the ring and presented at the brim O. D. P., but did not engage.

An hour later no further progress had been made, and the fœtal heart was becoming rapid and indistinct.

The patient was again etherized, the head was manually rotated to an O. D. A., the Vienna forceps was applied, and axis-traction rods were attached.

The head was firm and well ossified, but was delivered by the forceps without unusual difficulty.

The child was thoroughly asphyxiated, but was revived by the ordinary methods. It was a girl weighing six and one-fourth pounds.

The placenta was caught above the constriction ring and was removed manually. The membranes contained a complete placenta succenturiata and the cord two recent knots, which were probably the result of the two versions that had been done.

The uterus did not contract well, and large quantities of clots were several times expressed, but otherwise mother and child did uninterruptedly well, and were discharged well on May 7th, the child weighing at that time six and a half pounds. It appeared strong and healthy, and was seen three months later in good condition.

The result of the case confirmed our previous impression that the pelvis was unfit to bear a child at a later period than the middle of the eighth month, for although circumstances delayed its birth until two weeks after that date, the delivery was then possible only after a difficult and severe operation, and it was evident that the extreme limit had been fully reached; for, indeed, had the child at that time chanced to be a male or a slightly larger female, it is probable that its life would have been lost.

When the rapid increase in size and ossification during the last two months of fœtal life is considered, it seems probable that at seven and a half months the delivery would have been easy and at term impossible, except by craniotomy or Cæsarean section.

At a moment when the profession is so much occupied as at present with the discussion of the relative indications for the Cæsarean section, craniotomy, and the induction of labor, the report of even a single case of the kind may be of value.

In the first labor reported the section was evidently ruled out by the interest of the mother at the time when I first saw her, but I think that the second delivery illustrates well the advantages of the induction of premature labor in cases of marked contraction which are seen sufficiently early.

Clinical Department.

VESICO-VAGINAL FISTULA. (Three Cases.)

CARNEY HOSPITAL, SERVICE OF DR. F. W. JOHNSON.

REPORTED BY J. P. GAFFNEY, HOUSE SURGEON.

This condition must be rare at the present time, as these are the only cases I have seen, and my consultations in out-patient service alone during the past nine months amount to sixteen hundred and ten, — two hundred and thirty-seven of these being new patients.

Case I. Aged forty-seven. Married seventeen years. Family history good. Always rather delicate. Menstruation began at fourteen and has been quite regular every twenty-eight days up to ten weeks ago, since which time there has been a show every day. Ordinary flows seven to eight days. Slight pelvic pain before and after menstruation.

Four labors at term. One abortion at three months. One labor at term since.

First child was born sixteen years ago. Labor lasted three days and was terminated by forceps. Within a few days after labor urine began to run away through the vagina. This continued for months, then the urine was passed *per urethram* until four years ago, but since then it has passed wholly by the vagina. Burning, scalding, and vesical tenesmus were present. Appetite poor and body markedly emaciated.

Examination:—The vagina, owing to a cicatricial contraction, was shaped like a cone, the apex of which was at the vaginal vault. At the upper part of the anterior vaginal wall was a mass somewhat raised, with uneven surface, and incrusted with urinary salts. The anterior lip of the cervix was absent. This mass bled on the slightest touch. In the centre of this mass was a crater-like opening which terminated in a fistula leading through the base of the bladder. The urine was alkaline. From the appearance of the mass and its great vascularity, carcinoma was suspected.

A piece was cut off and sent to the pathologist, Dr. Dunham, who reported that the microscopic appearances were those of chronic inflammation.

Hot douches and glycerine dressings twice a day were ordered. In two weeks, as the condition of the parts about the fistula had not improved, ether was given and all inflammation tissue and urinary salts were removed with Sims' sharp curette. Her general health not improving with hospital life, she was soon sent home, careful instruction being given to keep the parts clean by hot vaginal douches, and a nutritious diet ordered.

In one month she returned somewhat improved in general health but in no condition to undergo an operation. Again she went home, but neglected to take proper care of herself, and returned with vulva and vagina excoriated and very sore, the vagina being covered in part by a thick phosphatic deposit. To assist in removing this a 25% solution of acetic acid was added to the vaginal douche — enough being added to produce a moderate amount of smarting. This was the suggestion of the house physician, Dr. Foley, and it worked admirably in removing the phosphatic deposit. At the same time the parts about the fistula were kept perfectly clean by using the sharp curette, a 25% solution of cocaine being freely used. The urine soon became acid.

Four months after the patient first appeared for treatment the fistula was in a condition for operation, and the patient's general health had been much improved.

Operation.

Twelve silver wire sutures were used to close the fistula.

Fortunately there was enough tissue at the upper border of the fistula without encroaching on the os uteri (or cervical canal) and thus it was not necessary to turn the uterine canal into the bladder.

The operation lasted four hours.

A Skene-Goodman catheter was left in the bladder. This was carefully removed twice daily and thoroughly cleaned. The bladder was washed out once a day with a warmed solution of chloride of sodium, (ʒi to water Oji).

Ammonium benzoate (gr. x) was given every hour whenever the urine got cloudy.

In twelve days the self-retaining catheter was dispensed with and the patient was instructed to empty the bladder every two hours.

Sutures were removed on the twelfth day. There was perfect union throughout. Twenty days after the operation urine could be retained from one half-hour up to two hours during the day.

Discharged well thirty days after the operation. Six months after the operation she passes her urine but three times during the day, and is not obliged to get up at night to urinate.

Case II. Aged thirty-four. Married. Family history good. Always enjoyed excellent health. Well developed and well nourished. Several difficult labors at term. Last confinement four weeks ago. Labor lasted several days and was terminated by forceps. The child was born dead. During the night of the day on which she was delivered urine ran away through the vagina. and has continued to do so ever since.

The lochia became very offensive. and one week after delivery part of the placenta came away.

The patient first entered the hospital during the service of Dr. J. B. Swift, and it was through his kindness that I was enabled to do the operation.

Examination: — Numerous excoriations were found around the upper and inner aspect of the thighs and in the immediate vicinity of the vulva. The perineum was ruptured through the sphincter ani. A large vesico-vaginal fistula was found entering the base of the bladder. The anterior lip of the cervix was gone. Bronchitis of the large tubes was present. Patient very weak and unable to sit up or help herself. For twenty-eight days she gained rapidly and then returned home to finish the building-up process.

In three months she returned for the operation. She had improved in every way, and the vagina and neighborhood of fistula were free from urinary deposit. The urine was acid.

Operation. Eleven silver wire sutures were used in closing the fistula. The anterior lip of the cervix being absent, and the fistula opening at a point nearly up to the internal os uteri, it was impossible to close it without denuding a strip on the posterior lip of the cervix. Thus the uterine canal was turned into the bladder.

The after treatment was the same as in Case I.

On the fifth day the self-retaining catheter was removed, as it caused some tenesmus, and the bladder was emptied with a soft-rubber catheter every two hours day and night. In seven days the catheter was dispensed with, and the urine was passed by the patient. On the ninth day she sat up. Fourteen days after the operation the sutures were removed and union was found perfect.

Discharged well twenty-two days after the operation. Seven months after the operation the result remained a success.

Case III. Aged thirty-eight. Married. Family history good. Has enjoyed good health since childhood.

Menstruation began at fourteen, always regular every four weeks. Flows three days. Flows a moderate amount. No dysmenorrhœa. Twelve labors at term. Eight of the children are alive and healthy. No abortions. All the labors were difficult, but the last one was the hardest of all. Five weeks ago gave birth to a large child after being seventy-eight hours in labor. No instruments were used.

Seven days after confinement urine began to run away *per vaginam.* Considerable vesical tenesmus has been present. At times passes a small quantity of urine through the urethra. While sitting is able to retain urine, not so, however, when standing or lying.

Examination: — Partial rupture of perineum. V-shaped vesico-vaginal fistula situated in the median line and about half-way between neck and base of the bladder. Apex of V pointed towards the urethra, and each arm of the V was from one half to three quarters of an inch in length. The vagina was free from deposits of urinary salts, and edges of fistula were healthy in appearance. There was a bilateral laceration of the cervix.

The patient belonged to the service of Dr. S. J. Mixter, and it was through his kindness that I was enabled to do the operation.

Operation. Eight silver wire sutures were used in closing the fistula. The operation was long and tedious owing to the great vascularity of the parts.

The after-treatment was the same as in Case I.

In the afternoon of the day following the operation, severe vesical tenesmus began while the bladder was being washed out and some blood came away. During the night there were several attacks of vesical tenesmus followed by the appearance of blood in the urine. The self-retaining catheter was removed and the bladder emptied every two hours by a soft-rubber instrument. The urine contained a slight amount of whitish muddy sediment.

For six days small quantities of blood appeared in the urine and there was more or less vesical tenesmus. On the seventh day urine began to run away through the vagina. Vaginal douches were ordered. On the eleventh day very little of the urine came through the vagina. On this day seven of the sutures were removed, and the fistula found closed by first intention except at one point. The suture next this point was left in for a few days longer. On the twelfth day no urine came through the vagina, and the vesical douches and catheterismus were stopped. The patient was instructed to pass urine every two hours.

Discharged well thirty days after the operation.

Seven months after the operation I received a letter from her stating that the urine did not trouble her except when she did an extra amount of work, and then she was obliged to pass it quite frequently. No urine came through the vagina, and she could hold her water three and four hours during the day and was not obliged to pass it at all during the night.

No operation on the pelvic organs requires so much careful and intelligent after-treatment as the one for vesico-vaginal fistula. No matter how well the operation is done it may be a complete failure if trained assistants do not have the after-treatment. My success in these my first cases was due to the skill and constant attention of Drs. Gaffney and Foley. The nurse also materially assisted us by her faithful attention.

New Instruments.

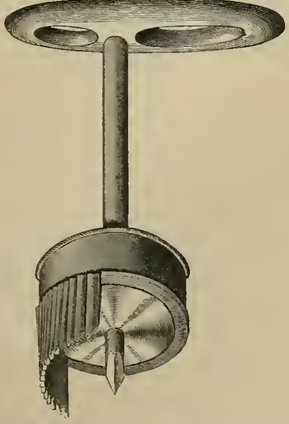
THE SEGMENT TREPHINE AND AN ASEPTIC TREPHINE.

BY JOHN B. ROBERTS, M.D.,

Professor of Anatomy and Surgery in the Philadelphia Polyclinic.

The frequency with which operations are now done upon the skull and brain has made apparent the need of improvement in our instruments for opening the skull. Seven years ago I published [1] an account of my experiments with the surgical engine as a means of making openings in the skull; and I still believe it an excellent and safe means of effecting entrance to the cranial contents. The chief disadvantages are the expense of the engine and its liability in ordinary hands to get out of order. This latter objection held good at least in one hospital with which I have been associated.

The ordinary trephine, either cylindrical or conical, will probably be used much more frequently, therefore, than the surgical engine; hence suggestions to improve its character are not inadmissible. The "segment trephine" described in the *Operative Surgery of the Human Brain*[2] is, I think, a valuable instrument with which to deepen any portion of the groove surrounding the button of bone to be removed, without cutting along its entire circumference. The skull is often very much thicker in some parts of the area of operation than in others, and the ordinary trephine has to be tilted to avoid injuring the cerebral membranes at the points where the skull is thinnest. Tilting is not always easily done when the trephine is large and deeply imbedded in the bone. A "segment trephine," having the same radius of curvature as that with which the operation was begun, enables me to cut



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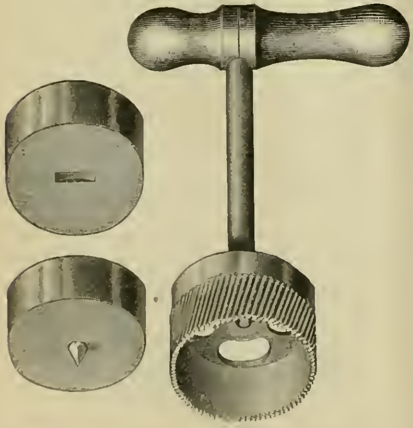
[1] Philadelphia Medical Times, 1881-82, xii. p. 205.

[2] Page 78.

deeper and with great care at any selected part of the groove. The accompanying illustration renders a detailed description of the instrument unnecessary. The cutting edge extends one-third of the circumference, and the centre-pin, not requiring retraction, may be immovably fixed to the head of the trephine. The instrument has no groove in the stem or handle to collect septic matter, and is readily cleaned.

A serious objection to the ordinary trephine is the fact that it is almost impossible to get assistants and nurses to keep the centre-pin, and the tubular stem in which it slides, perfectly aseptic. Indeed, it is difficult, with every intention of perfect cleanliness, to keep the hollow stem of the instrument absolutely clean. I have endeavored to remedy this objection by making the stem solid, and substituting for the ordinary sliding centre-pin a circular block of metal, accurately fitting into the crown of the trephine, with a point upon its lower extremity.

As soon as the surgeon has cut a groove deep enough for the teeth of the trephine to be maintained in position upon the skull, the central block is taken out of the crown of the trephine, and the operation continued as with the ordinary instrument, after retracting the centre-pin. Upon the upper surface of the block is cut a shallow slot, into which fits a slight projection from the upper part of the trephine crown. This compels the block to rotate with the rest of the trephine when the operator is making the first incision into the bone. The trephine itself is made as thin as possible, in order that the groove between the disk of bone removed and the rest of the skull may be very narrow. The button of the bone, when replaced, can then be held in position more readily than if the groove is a wide one. I believe that after using a thin trephine, such as this, it at all times will be well to stitch the button of the bone into position by catgut sutures passed through the periosteum, which may be allowed to remain upon the surface of the disk of bone, and upon the skull adjacent to the trephine opening.



The crown of the trephine must not be too conical, because such a trephine, in cutting through the thick skull, makes the outer portion of the incision a very wide one. I am inclined to think that a surgeon of even moderate skill never needs a conical trephine to prevent his plunging the instrument into the brain; a cylindrical one should be just as safe in his hands as a conical one. An advantage in having the crown of the trephine slightly conical, when a large instrument is used, is the less liability of the instrument becoming jammed in the groove. This annoyance not infrequently occurs on account of irregularities in thickness of the skull, especially when a large surface is included in the trephine. It is more apt to take place, I think, when the groove is made by a cylindrical instrument, which does not make the external aspect of the incision wider than the internal.

The weight of the metal handpiece can be minimized by fenestræ, or by making the handle hollow. It is best to attach the hand to the stem eccentrically, as suggested by Horsley, since the hypothenar portion of the palm needs a longer lever than the thenar.

The aseptic trephine, it will be seen, is somewhat similar to the safety trephine of Hopkins,[3] who suggested the use of a cylindrical block instead of a centre-pin, because of the possibility of the surgeon forgetting to withdraw the centre-pin, and, therefore, wounding the dura mater. His device contained a spring to keep the block thrust forward, and was, therefore, very difficult to clean. In fact, it was not constructed with an idea to facilitate asepsis, but to prevent careless puncture of the dura.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES M. GREEN, M.D., SECRETARY.

TWENTY-EIGHTH ANNUAL MEETING.

JANUARY 12, 1889, the President, DR. WILLIAM L. RICHARDSON, in the chair.

DR. EDWARD REYNOLDS reported

A CASE OF CRANIOTOMY IN FIRST LABOR; INDUCED PREMATURE SECOND LABOR WITH FAVORABLE RESULTS.[1]

DR. J. P. REYNOLDS asked whether ether was given before the formation of Bandl's ring, whether it would not have been better practice to have induced labor with rapid manual dilatation, and why corrosive sublimate was used in the colpeurynter instead of air.

DR. E. REYNOLDS replied that there was no true Bandl's ring in the second labor, but an irregular constriction ring. There was great difficulty in setting up labor, and the head was so high that it could not be reached by vagina. He believed in manual dilatation in suitable cases, but thought the methods adopted were preferable in justo-minor pelves. In this view he was sustained by the President. He had used an aseptic solution in the colpeurynter rather than air because of the risk of the entrance of air into the uterus and consequent air-embolism through the sinuses, in the event of the colpeurynter rupturing, as it had done in the case reported.

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[3] Annals of Surgery, July, 1885.

[1] See page 308 of this Journal.

Dr. Townsend spoke of the cylindrical character of the pelvis, which increased the difficulty of delivery, and also of the great efficacy of the axis-traction rods.

Dr. Blake spoke of the greatly improved results of the modern Cæsarean section, and queried whether it would not have been better to have performed the Sänger operation, rather than to have done craniotomy in the first labor.

The President said that the statistics of the Sänger operation were very good in well-appointed hospitals, and when the case was seen early; but that he should think in the present instance the operation of craniotomy was wisely chosen.

Dr. E. Reynolds reminded Dr. Blake that his case was not seen by him until sixty hours after the beginning of labor, and believed that in such late cases the results of the Cæsarean operation were not as favorable as craniotomy.

Dr. Green said that he did not believe it right to subject a patient to even the greatly reduced risks of the Sänger operation in a first pregnancy, when the pelvis was not more contracted than in the present case. In such a pelvis craniotomy in skilful hands has no mortality; and it is fair to give the patient an opportunity for induced labor in a second pregnancy. He had told the patient and her husband that in the event of a second pregnancy she would have to submit to Cæsarean section, if she did not report to the clinic in time for the induction of premature labor; and the woman acted in accordance with the advice then given. He believed the happy result of the case, as given by the reader, proved the wisdom of the course pursued.

Dr. J. C. White read, by invitation, a paper entitled

DERMATITIS GESTATIONIS; THE HISTORY OF A RECURRENT DERMATOSIS.[2]

Dr. White said, in reply to a question by Dr. Ingalls, that the urine was not examined in this case, to his knowledge. In other cases the urine has not been found disordered, hence the affection had been sometimes called pemphigus without albuminuria.

Dr. Abbot said this rare and remarkable case recalled a case he had seen in a secundigravida, who had an eruption which began like a scattered eczema on the chest, and afterwards appeared on the legs; there was no itching nor discomfort. The patient had been subject to the affection all her life in a minor degree: in the instance mentioned, she had no treatment and got well.

In regard to the infectious character of the eruption in Dr. White's case, he recalled a case of impetiginous eruption on the cheek of a nursing child; the mother subsequently had a similar eruption on the breast against which the affected cheek rested when the child nursed. He inquired of the reader if he believed impetigo to be contagious.

Dr. White replied that so-called impetigo contagiosa was believed by many dermatologists to be contagious, as the name indicated; but it did not follow that the affection of this child was impetigo contagiosa because the mother's breast was affected. A moist eczema upon a child's head may by long contact excite a similar condition upon a mother's breast or even through the heat and moisture of the affected part, not, however, in consequence of any contagious quality in the diseased tissues or discharges from them.

Dr. Sinclair recalled a case of skin eruption he had seen years ago, on a woman carrying a dead fœtus. The eruption passed off after delivery, and he never knew its nature.

Dr. Boardman had already reported a case seen four or five years ago, which was considered at the time to be herpes impetigiosa; the eruption was characterized by blebs in the late stages, and occurred after labor. Was it due to septic infection? or to the use of iodoform? It did not seem to him that the affection could be ascribed to either cause. He had seen one other case, a simple urticaria, occurring a few weeks before labor and ending a few weeks after labor.

Dr. Blake asked the reader if he found the reflex neuroses more common in pregnant women.

Dr. White replied that urticaria was not so very uncommon in pregnancy; he had recently seen a case with Dr. C. E. Stedman, in which the eruption spread from the vulva. He had in mind a few women who in successive pregnancies suffered with eczema and under no other conditions; such slight disturbances are not so very uncommon; but he had never seen more than two or three cases of the character he had reported to-night, and none so severe.

Dr. J. P. Reynolds spoke of several cases he had seen of urticaria about the nipple and on the abdomen.

Dr. Blake had never seen anything worse than pruritus vulvæ, which had always yielded to simple remedies, such as cocaine, boracic acid, etc.

The President alluded to the case of a patient who in four successive pregnacies had had universal urticaria during the first month; the eruption then disappeared, and nausea and vomiting began and continued throughout the period of gestation. The woman was accustomed to judge that she was pregnant by the urticarial eruption. He asked the reader whether in his opinion women who were subject to these affections were made better or worse by pregnancy.

Dr. White replied that he thought that the occurrence of pregnancy made very little difference in the course of these affections. He then asked the members if they saw, in the case he had reported, any evidence of pyæmic or septicæmic processes, other than the high temperature, pulse, and respiration, which might account for the apparently infectious character of the eruption in the last attack.

No one seemed to have done so.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

Regular meeting, Monday, December 3, Dr. R. H. Fitz in the chair.

Dr. Morton Prince read a paper on

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[2] See page 305 of this Journal.

WESTPHAL'S PARADOXICAL CONTRACTION,[1]

and exhibited two illustrative cases.

Dr. G. L. Walton said: "This phenomenon is one of considerable interest, although I have not myself seen it sufficiently often to feel qualified to discuss it from experience. The cases Dr. Prince has shown remind me forcibly of the functional cases which I have seen in Charcot's clinic; and it seems to me that in one of his cases there is a condition allied to catalepsy, for I observe that in whatever position the foot is placed it tends to remain there with practically wax-like rigidity. In this case no sudden relaxation of the tibialis anticus is required, nor stretching of the gastrocnemius, to produce the so-called paradox, the foot simply remaining up when placed in that position, whether slowly or rapidly, just as would happen in a case of catalepsy.

Dr. J. J. Putnam reported a case of

HEREDITARY MUSCULAR DYSTROPHY, WITH MICROSCOPIC DEMONSTRATIONS.[2]

Dr. P. C. Knapp said that the subject of the primary myopathies was one of much interest to him, especially since the discussion at the last meeting of the American Neurological Association in Washington; and the case reported by Dr. Putnam was an exceedingly valuable one. Our knowledge of the various forms of muscular atrophy had advanced so far of late years that we knew now that both Charcot and Friedreich were in part right in the views which they held; there was a muscular atrophy of spinal origin and also a muscular atrophy of muscular origin; beside these forms there was also muscular atrophy due to disease of the peripheral nerves. Spinal muscular atrophy presented two distinct types, — the acute inflammation of the anterior cornua, the so-called essential paralysis of children, seen also in adults, and the chronic spinal progressive muscular atrophy, of which there were several clinical varieties, — the common form which begins in the small muscles of the hand, the shoulder form, and probably the peroneal form. Of the forms of atrophy due to peripheral neuritis much had been said of late. There are two forms of the primary myopathies, — the well-known pseudo-hypertrophy, which usually begins in childhood, and the rarer form without apparent hypertrophy, which may come on rather later. Any attempt to subdivide this latter form into clinical types with a classification based on the anatomical distribution of the atrophy seems useless and finical. In regard to the pathological changes in the muscles themselves, the only difference in kind was that in the primary myopathies there were hypertrophied fibres, while in the secondary myopathies hypertrophied fibres were usually absent. In the primary forms, too, are fewer fibres, that show less of transverse striation and the presence of granular degeneration. The speaker had suggested at the meeting in Washington that this comparative rarity of degenerated fibres might explain the absence of degenerative reaction in the primary myopathies.

He believed even more strongly than Dr. Putnam did, that Gowers's idea that the hypertrophy was only apparent, and due to harpooning or excising living muscle, was not justified. Clinically there were certain features which served to distinguish the primary myopathies from those of spinal or peripheral nerve origin. In the secondary forms degenerative reaction and fibrillary contractions were common. In the primary myopathies fibrillary contractions were very rarely if ever seen, and degenerative reaction had been found thus far only in one advanced case, and possibly in one other. Nevertheless there were many forms where it was extremely difficult to say whether the atrophy was spinal, peripheral, or muscular. He mentioned two cases where the diagnosis between neuritis and spinal atrophy was for a long time in doubt.

Dr. G. L. Walton said Dr. Putnam has covered very clearly the distinction between the types of muscular atrophy as they are at present recognized. The important practical conclusion to be drawn from neurological research is that there are two general classes of atrophy, the one of spinal origin, running a comparatively rapid course, the other myopathic, generally occurring in families, running a long course, and, although no less amenable to treatment than the spinal form, not necessarily shortening life. The attempt to classify the cases according to the group of muscles involved is apt to prove misleading if too closely followed. This is illustrated by the case of which I have notes, and which I have already reported at the meeting of the American Neurological Association. The order of muscles involved corresponds closely to the so-called peroneal group, generally considered to be of spinal origin, and yet the history and course admit of no doubt that it is of myopathic origin. The patient has been under my observation for some time at the Massachusetts General Hospital; and his case is of considerable interest, both as regard the duration of the disease in the individual, and as regards the family history as given by himself, and corroborated by Dr. Alden, of Randolph, who has traced the trouble carefully. He states that the disease has now lasted in his own case forty-two years, he now being sixty-two, and there is nothing to indicate that he will not live many years longer. His mother died at eighty-seven, having been similarly afflicted from the age of thirty-five, that is, during fifty-two years. Out of five children, one only besides himself has been affected. Two brothers died at forty with consumption, and one sister is living and well. He states that the two children having atrophy resemble in other respects the mother, the others resembling the father. His mother's father suffered from general atrophy, causing him to use crutches; both feet, as the patient remembers, being turned in. The disease has been traced back through succeeding generations to the early part of the seventeenth century. His own trouble appeared first at the age of twenty, affecting the use of the ankles and feet, spreading to the legs, then attacking the hands and arms. Physical examination shows the legs cold and atrophied, the tibialis anticus and peronei being most affected, neither responding to the faradic current. The patient walks with great difficulty on account of the complete toe drop. Elsewhere the loss of electrical excitability corresponds to the amount of atrophy, there being no degeneration reaction. There is complete atrophy of the muscles of the hand and thumb. The supinators, pronators, and flexors are all affected, all retaining, however, a certain amount of power. Biceps and deltoid are wasted. Serratus magnus, levator anguli scapulæ, supra- and infra-spinatus, and muscles of back, are unaffected. The glutei are flaccid, the muscles of the thigh comparatively intact. There is no disturbance of sensation, no fibrillary twitching. The patient applied for treatment on account of persistent headaches, affecting chiefly the vertex, and accompanied by soreness. This had persisted during three years, increasing in severity. This symptom disappeared gradually under bromide and iodide; and I have been inclined to consider it, though perhaps erroneously, an accidental complication.

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[1] To be published in a future No. of the Journal.

[2] See page 301 of the Journal.

Dr. Morton Prince: There was often great difficulty in making a diagnosis in individual cases; although the different types may be well marked, the individual case may be hard to distinguish. He believed that cases of spinal origin may or may not show the reaction of degeneration according as the progress of the disease is rapid or slow. He reported a case of muscular atrophy of the shoulder, of spinal origin, where there was no reaction of degeneration and no fibrillary contraction.

Dr. Knapp replied that the clinical distinctions were rather of a negative value. If degenerative reaction fibrillary contractions were present, the case was most probably of nervous origin; but if these symptoms were absent, nervous disease could not be excluded. In neuritis these symptoms are not infrequently wanting; but in typical cases of spinal progressive muscular atrophy, although fibrillary twitchings were not always present, he had always found degenerative reaction in some of the muscles.

Recent Literature.

A Manual of General Pathology, designed as an Introduction to the Practice of Medicine. By Joseph F. Payne, M.D. Oxon., F.R.C.P. Philadelphia: Lea Brothers & Co. 1888.

This book is intended rather for the practitioner than the special student in pathology, and the attempt has been made to bring together the latest accepted views with this regard. There is no arrangement of the subject of general pathology that will be agreed to by every one. The line between special and general is such a deviating and uncertain one that many subjects are placed upon one side or the other according to individual preference. The author has entirely left out any consideration of monstrosities and what is ordinarily termed surgical pathology (repair after injury, etc.), as he considers there are other sufficiently good books devoted to the subject. As to the first we quite agree, but the second is so important that brief reference to it, in its proper place, would not be amiss, for all the injuries do not come under the hand of the surgeon, and a knowledge of the processes of healing are as important to the physician as to him.

The subject is treated in two parts. The first deals with the processes of disease, while the second takes up its causes. In general the plan adopted by Cohnheim is the one that is followed. Less attention is paid to the purely objective changes that are to be seen in the cells than to the associated physiological and physical processes.

There is a great deal of information in the book, which, from the comparatively small compass into which it is compressed, has to be presented in rather a disjointed way. If it could have been more elaborated, the style would have been a little easier. On the whole it is a very readable book, and one that we can heartily recommend to those who wish to learn the present position of general pathology without having recourse to a foreign tongue.

The figures are good and chiefly original, and, with the exception of a few charts, entirely from microscopic preparations. The bacteria and their relations are not neglected, and their methods of preparation are given in an appendix.

The type and paper are good and a very full index makes reference easy.

A Text Book of Human Physiology. By Austin Flint, M.D., LL.D. Fourth edition, entirely rewritten. New York: D. Appleton & Co. 8vo. pp. xvii., 872.

This large and handsome volume follows that of the preceding edition at a considerable interval. It is pleasantly written, well printed, copiously and beautifully illustrated. As a revision, as a text-book, it does not, on the whole, call for very much commendation, nor should we give it a high rank as a work of reference save possibly as containing the special views of the author upon a few points. As a presentation of our present physiological knowledge the entire book is very uneven and for its size incomplete. The reader gets the impression that many of the newer results of experimental research are known only at second hand, and not by examination of the original communications. Such, to be specific, is obvious in the discussion of deglutition, where important genuine additions to our knowledge are merely copied from Landois-Stirling, and even then apparently not fully apprehended. Again, if the relations of thyroidectomy to myxœdema are to be mentioned at all, it is not sufficient to refer merely to Horsley, valuable as his work is, and to neglect the painstaking observations which many others have contributed to the already very extended discussions of this subject. In short, we miss nearly everywhere the critical spirit which compares and sifts, and see too frequently that spirit which finds transcription the more rapid path to knowledge. If the reader will examine the chemical portion of the book, the sections bearing upon the formation of urea and the relations of this process to the liver, those referring to the vaso-motor nerves and their action, and also search for information about temperature and pressure points as made known to us by Blix and Goldscheider, we think he will at least confirm the judgment above given.

Transactions of the American Gynecological Society. Vol 13, for the year 1888.

The present volume compares very favorably in originality of matter, and in the practical character of the contributions, with its predecessors. Additional interest is attached to it from the fact that, as the meeting was held in Washington, the association having voted to join the Congress of American Physicians and Surgeons, distinguished medical men from abroad were present who contributed papers, and took part in the discussions.

These volumes mark very clearly from year to year the relative importance of the various gynecological problems which are receiving especial attention at the time. On looking over the table of contents for the volume for 1888, we find four papers which deal with the subject of ectopic pregnancy, four which discuss the question of the use of electricity for various pelvic disorders, and two contributions of value on the time-worn but nevertheless vexed subject of the causes of sterility in women.

There is, more than is sometimes the case, a harmonious proportion between the papers devoted to purely gynecological and purely obstetrical subjects. There is not, as in some former years, a conspicuous absence of the latter.

It is not our purpose to notice in detail the various papers. Of especial interest are the following: The New Cæsarean Section, by Dr. Lusk; Anteflexion of the Uterus, by Dr. Thomas, noteworthy for the wide divergence of the views as to its pathology which were brought out by the discussion; On the Severe Vomiting of Pregnancy, by Graily Hewitt, which emphasized the rôle which displacements of the uterus play in this affection; The Influence of Pregnancy on Pelvic Diseases, by Dr. Hunter; Electro-Therapy and Surgery in Gynecology, by Dr. Engelmann; and The Infertility of Women, The Nervous System in Sterility, by Dr. H. F. Campbell.

All the other papers are worth reading and studying, and the volume is a valuable addition to the physician's library.

The Rules of Aseptic and Antiseptic Surgery. By ARPAD G. GERSTER, M.D., Professor of Surgery at the New York Polyclinic, etc. Illustrated with 248 engravings and 3 chromo-lithographic plates. New York: D. Appleton & Co. 1888.

This elegantly published volume of three hundred and thirty-two pages is intended by its author to be a systematic yet practical presentation of the most modern and improved principles of aseptic surgery. A brief statement of the difference between sepsis and asepsis, a description of aseptic wounds and their treatment, of infected wounds, of accidental wounds, and a detailed description of special surgical procedures according to aseptic principles, is a résumé by title of Part I. of this interesting treatise. Part II. treats of suppuration in the various forms the surgeon is called upon to relieve, their origin and possible attendant complications. In general and specifically. Part III. describes the process of tuberculosis and the aseptic technique of the operations it necessitates. Part IV. Gonorrhœa from an aseptic standpoint. Part V. Syphilis; the aseptic and antiseptic treatment of its external lesions.

Dr. Gerster, as he states in his preface, has not attempted to write a complete text-book of surgery, and the person who consults this volume with the expectation of finding information on any and every surgical subject will be disappointed. The leading idea has been to illustrate and emphasize the important practical changes that antiseptic methods have wrought in surgical therapy. As far as possible all important statements are deduced from the author's personal observation and experience. Except in some minor points this book incites only commendation, and impresses the reader as a work which is the result of the efforts of an able surgeon and careful observer. The report of the results obtained by the method he is advocating is the author's authority for his statements; and his statistics are valuable contributions to the new data which is at present being collected. Statistics older than ten years, and for some operations even five years, are to-day valueless for prognosis. As an aid to form a new standard Dr. Gerster's data are quite interesting. In regard to special operations recommended, that procedure which is most in vogue among modern surgeons has not always found favor with the writer, *e.g.*, the "Macewen" method in radical operations for herniæ; but since it is really *asepsis* rather than any especial operation that is the aim of the work, this perhaps is of minor importance. The fine photo-engravings which are so abundant throughout the work add much to its completeness and will be a great assistance to the reader. The criticism has been made that they are often unsatisfactory in that more attention has been paid to pictorial effect than to clearness of detail in respect to essential points. This seems, except perhaps in a few instances, an unjust one. If the book were intended for a student commencing the study of surgery this might be true, but it is not intended for such a field, and it will be hard to find a method which will give so much with such accuracy in detail as is shown by these plates.

It is to be regretted that the method of asepsis as practised in modern cerebral surgery has not been included in this work. In no region is this principle more necessary for success, and it arouses a feeling of disappointment that the author has not included the technique of these operations in the volume he has in other respects so satisfactorily written. On the other hand, Parts IV. and V., although well written and containing much of value and interest, seem somewhat out of place in a treatise on general or, more accurately perhaps, operation surgery. The book is a valuable contribution and one which justly deserves commendation.

A Topical Synopsis of Lectures on Animal Physiology. By HENRY SEWALL, Ph.D., M.D., Professor of Physiology in the University of Michigan. Third Edition. Ann Arbor: Sheehan & Co. 1888. Pp. 138.

This excellent little outline is intended primarily for students who heard the author's lectures. It will be useful for others as a brief guide to the important points to be considered in reading or in review work. The book is interleaved and thus adapted for note-taking. Incidentally the "Synopsis" is very creditable to the University of Michigan, as an illustration of the fulness and thoroughness of the physiological instruction which it gives.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, MARCH 28, 1889.

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THE CENSUS OF MASSACHUSETTS FOR THE YEAR 1885.[1]

The first part of Volume I. of the Decennial Census of Massachusetts, comprehending the general statistics of population which the public requires promptly, was issued at an early date. Part 2, requiring minute analysis of statistics and great time for preparation, deals with the following subjects of the greatest sociological value: —

Classified Occupations, by Towns; Principal Occupations, by Towns; Occupations by Name, for the State; Occupations in Detail, by Sex; Occupations by Age, Periods, and Place of Birth; Occupations of Aliens, in Detail; Occupations of Aliens, by Place of Birth; Children at Work; School Attendance; Schools and School Property; Libraries and Reading Rooms; Illiteracy; Married Women and Mothers, with Number of Children and Children Living; Prisoners and Convicts; Homeless Children and Paupers; Physical Condition.

Out of a population of 1,942,141 there are 817,308 persons, representing 42.08 per cent., engaged in remunerative occupations, and of this number 604,161 are males, and 213,147 females, the males constituting 64.76 per cent. of the total males and females 21.12 per cent. of the total females.

Of the entire male population 9,621, or 1.03 per cent., are engaged in the public service; 16,555, or 1.77 per cent., are professional people; 25,855, or 2.77 per cent., are engaged in domestic or personal service; in trade 94,936, or 10.18 per cent.; engaged in transportation 48,675, or 5.22 per cent.; in agriculture, 77,257, or 8.28 per cent.; 7,973, or 0.85 per cent., in the fisheries; in manufactures 281,821, or 30.21 per cent.; 1,562, or 0.17 per cent., in mining; 32,905, or 3.53 per cent., laborers; and 5,183, or 0.56 per cent., apprentices; 164,469 scholars and 4,561 students, representing 18.12 per cent. of the whole number of males; 18,168 persons, or 1.95 per cent., have retired from active pursuits.

For females, 522,583, or 51.78 per cent. of the whole number are engaged in domestic service, including housewives and persons engaged in housework without fixed compensation; in manufactures 112,762, or 11.17 per cent., while 167,115 are scholars, and 2,581 are students. The large number of occupations followed by women at the present time as compared with the comparatively small circles of employment of a few years ago is aptly illustrated.

Of the whole number of males in professional work, 3,026, or 18.28 per cent., are engaged in pursuits pertaining to religion; 2,239, or 13.52 per cent., in law; and 3,812, or 23.03 per cent., in medicine. There are also 1,996 males, or 12.06 per cent., engaged in scientific pursuits; 1,576 males, or 9.52 per cent., in education, and 1,557, or 9.41 per cent., in music. For females 10,094, or 70.83 per cent., are engaged in educational pursuits, and 2,065, or 14.49 per cent., in music.

The workers in 1885 number 817,308 and constitute 42.08 per cent. of the entire population, while the non-workers are 1,124,833 in number. Of the whole number of workers 119,635, or 14.64 per cent., are from 14 to 19 years of age; 556,044, or 68.03 per cent., are from 20 to 49 years of age, while those 50 years of age and over number 138,511, or 16.95 per cent. Of the non-workers 360,169, or 32.02 per cent., are under 10 years of age; 138,035, or 12.27 per cent., are from 10 to 13 years of age; and 103,099, or 9.17 per cent., from 14 to 19 years of age.

Of the workers 515,847, or 63.12 per cent., are native born and 301,461, or 36.88 per cent., are foreign born. Of the non-workers 899,427, or 79.96 per cent., are native born and 225,406, or 20.04 per cent., are foreign born.

In 1875 there were reported 79,136 aliens; in 1885 they were 99,131 in number, — adult males having no political franchise. 51,824, or 52.28 per cent., are engaged in the manufacturing industries of the Commonwealth, and 10,716, or 10.81 per cent., are laborers. Of all the aliens 27.44 per cent. are illiterate.

The whole number of children at work in 1885 was 3,040, of which 1,907 were males and 1,133 are females, these children being all under 14 years of age and including 11 under 10 years of age. If we compare the total number of children at work in 1885 with the total number of children at work in 1875 we find that there has been a decrease in ten years of 77.08 per cent., the decrease for males being 74.14 per cent. and for females 80.77 per cent., showing the wise provisions of law which have been placed upon the statute books, and the efforts which have been made for the prevention of the illegal employment of children in our factories and workshops. The children at work and at school in 1885 number 1,641 and represent 53.98 per cent. of all the children at work. There has been a decrease during the decade in the number of children at work and at school of 64.70 per cent. Of the 3,040 children at work 414, or 13.62 per cent., are of native parentage; 2,354, or 77.43 per cent., are of foreign parentage; 176, or 5.79 per cent., have mixed parentage, while for 96, or 3.16 per cent., the parentage is unknown in the case of one or both parents; 413, or 13.59 per cent., of the total number of children at work are illiterate. The illiterate children at work of native birth constitute 5.27 per cent. of the total children at work who are native born, and the illiterate children at work of foreign birth represent 28.57 per cent. of the total children at work who are foreign born.

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[1] The Census of Massachusetts: 1885. Prepared under the direction of Carroll D. Wright, Chief of the Bureau of Statistics of Labor. Volume I. Population and Social Statistics. Part 2. Boston: Wright & Potter Printing Company, State Printers, 18 Post Office Square. 1888.

The native born persons attending the public schools numbers 281,057, or 91.94 per cent. of the whole number, and the foreign born 24,635, or 8.06 per cent., while of those attending private schools 23,468, or 85.24 per cent., are native born, and 4,065, or 14.76 per cent., are foreign born. The number of public school buildings owned in 1885 is 3,439 and the buildings are valued at $23,222,781. The school buildings owned by incorporated private schools in 1885 number 367 and are valued at $8,808,557; there are, besides, 15 hired buildings.

For the unincorporated private schools in 1885, there are returned 80 school buildings owned, the value being given as $908,770, and 79 buildings hired, besides 91 hired rooms, 22 parts of buildings, and 58 schools kept in private dwelling-houses.

In 1885 there are 2,371 libraries, 703 secular and 1,668 religious. The number of books contained in the libraries in 1885 is 5,876,856, of which 4,542,072 are bound, 1,298,739 are pamphlets, and 36,045 are manuscripts, the value of the books being placed at $5,888,952. Of the 194 reading rooms returned in 1885, 172 are secular and 22 are religious.

The population 10 years of age and over in 1885 is 1,581,961; of this number 122,263 are returned as being illiterate, representing 7.73 per cent. of the population 10 years of age and over. The native born illiterates in 1885 number 13,898, or 1.29 per cent. of the native born population 10 years of age and over. The foreign born illiterates, on the other hand, in 1885 number 108,365, these foreign born illiterates representing 21.50 per cent. of the foreign born population 10 years of age and over. Of the illiterate males in 1885, 6,461, or 14.19 per cent., are under 20 years of age, and 39,065, or 85.76 per cent., are 20 years of age and over. For the females there are 5,666, or 7.38 per cent., under 20 years of age, and 71,037, or 92.61 per cent., 20 years of age and over.

We find for 1885 that 232,704 native born mothers have had 784,499 children, or an average of 3.37 children to each native born mother; that 154,941 foreign born mothers have had 809.548 children, or an average of 5.22 children to each foreign born mother.

There are 665 prisoners, 558 males and 108 females, and 3,426 convicts, 2,836 males and 590 females, returned in the census of 1885. Of the prisoners 395, or 59.40 per cent., are native born, and 270, or 40.60 per cent., are foreign born, while of the convicts 2,163, or 63.13 per cent., are native born and 1,263, or 36.87 per cent., are foreign born.

The whole number of homeless children, May 1, 1885, as returned in the census, was 5,232, and the whole number of paupers was 8,394. The number who have some physical defect is for homeless children 527 and for paupers 6,004.

The blind in 1885 number 3,582, of whom 431 are otherwise defective; deaf 2,973; dumb 134; deaf and dumb 828; insane 5,263, of whom 205 are otherwise defective, while the idiotic number 1,638 in 1885, of whom 184 have some other defective physical condition. The maimed in 1885 number 2,382, mostly males, of whom 157 are otherwise defective; the lame 5,136, of whom 437 are otherwise defective; the bedridden 433, of whom 268 are otherwise defective; the paralytic 2,540, of whom 146 are otherwise defective, and the deformed 680, of whom 82 only are otherwise defective.

Of the maimed 423 males were made so by battle, 148 by disease, 1,622 by accident, 7 by accident and disease, and for 5 the cause is unknown. Of the maimed females 112 became so through accident, 63 by disease, 1 has been so from birth, and for 1 the cause was not given. Of the lame, 1,967 males became so as the result of accident, 13 by accident and disease, 586 by battle, 772 by disease, 69 were lame from birth, while for 47 the cause is not given. Among the females who are lame, 1,095 were made so by accident, 511 by disease, and 40 have been lame since birth.

NEW RESEARCHES INTO THE PATHOGENY OF DIPHTHERIA.

MM. Roux and Yersin have lately published an interesting report[1] in which they give the details of a series of experiments conducted by them to determine the microbic or other cause of diphtheria, and which seem to go far toward establishing the specificity of the bacillus of Klebs and Loeffler. They claim that their experiments, which they aimed to conduct with great scientific exactness, have shown: 1, that the above-mentioned bacillus was found in all the cases which they examined; 2, that with pure cultures of this bacillus they have reproduced false membranes in animals; 3, that from a clinical point of view the effects produced in animals have been identical with those that have been observed in man, the consecutive paralyses being included.

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[1] Annales de l'Institut Pasteur, No. 12, Dec., 1888, Journal de Médecine de Paris, Feb 17, 1889

It is well known that previous experiments have not succeeded in producing the diphtheritic paralysis, although the discovery of the bacillus of Klebs and Loeffler in the false membranes, and the reproduction of the disease by inoculation of this bacillus, have been vouched by numerous microbiologists in different parts of the world. Roux and Yersin affirm that this paralysis was quite a constant phenomenon in their experiments when the animals that were the subjects of the induced disease did not succumb to too rapid a poisoning.

This pathogenic organism exists only in the false membranes. It is absent from the organs and from the blood of individuals who have succumbed to diphtheria; and the same may be said of animals that die as the result of an experimental injection. How then are we to explain the fact that a microbe-culture in so limited a part of the body may give rise to a general infection and to vascular lesions of all the organs. Roux and Yersin reply by showing that at the focus of pullulation of the bacilli, in the very interstices of the false membrane, a poison is elaborated, and that from thence it is diffused throughout the entire organism. *The bacillus of diphtheria secretes a diphtheritic poison.*

Roux and Yersin filter through porcelain the products of a primary culture in a diphtheritic membrane; the perfectly soluble portions, which alone pass through, are received into veal broth; the microbes are all retained by the filter. The clear liquid, which contains no living organism, is inoculated in the animal. The symptoms which follow the injection of these soluble diphtheritic products vary in intensity, according to the quantity of poison contained in the culture: anxious, irregular respiration, loss of appetite, swelling of the glands of the axilla and of the groin, diarrhœa, hemorrhagic congestions of the viscera, paralyses. According to the amount of soluble poison inoculated, Roux and Yersin have been able to produce the different forms of diphtheritic poisoning, from such as speedily cause death to such as after a variable time manifest themselves by paralyses which either prove fatal or are susceptible of recovery.

The writer in the *Journal de Médécine* who sums up these researches remarks that to the physician they have considerable importance, both from the point of view of prophylaxis and of therapeutics. Clinically, cases of diphtheria are continually occurring, which, after being benign for several days, all at once take on a grave and malignant form. For the first two or three days the disease remains local; there are one or two slight diphtheritic patches on a tonsil or on the velum pendulum, with little if any glandular engorgement, and with no fever. Then all at once the fever kindles up, the false membranes cover the whole throat in a few hours, and the patient succumbs with toxic accidents. Dr. Jules Simon recommends never to neglect those patchy anginas, trifling in appearance at first, but to treat them energetically from the onset, as if they were the most grave. What observation had taught him receives confirmation from the experiments of Roux and Yersin. The disease, local at first, soon becomes general; the bacilli, existing in small numbers, secrete a poison of excessively virulent nature, which soon infects the organism; a result which possibly might not have happened if, at the very onset, an energetic treatment had removed the false membrane, and destroyed the pathogenic microbe on the spot.

Clinical observation, moreover, has shown that it is bad practice to excoriate a mucous membrane, or the skin of a diphtheritic patient, for you thereby favor the appearance of new false membranes. In their experiments Roux and Yersin found that in order to give the disease to animals it was not enough to paint with pure cultures the mucous membrane of the pharynx, the trachea, the conjunctiva; it is necessary that the mucous membrane be excoriated first. "All these experiments," say the French writers, "prove that the microbe of diphtheria develops only in a mucous membrane already diseased; it is probable that this is generally the case in man. Hence it is that we see diphtheria so frequent after measles and scarlet fever. It will not do, therefore, ever to neglect the angina which accompanies these two diseases, and the wary physician will frequently practise carbolized douchings of the throat and pharynx, as of all antiseptics carbolic acid seems to be that which is the most efficacious in confirmed diphtheria."

As to the question whether it is possible to produce immunity in animals and in men, the French writers state that researches now in progress promise an affirmative answer to this question.

This work is interesting but not conclusive. In the introduction to an article on the Etiology of Diphtheria, by T. Mitchell Prudden, M.D., in the April number of the *American Journal of the Medical Sciences*, that writer considers the work of

Roux and Yersin so meagerly described that its value is very uncertain.

MEDICAL NOTES.

— Dr. Daniel Ayres, of Brooklyn, has given $10,000 to the Hoagland Laboratory.

— A new City Hospital is just finished at Springfield, Mass.

— Nashville, Tenn., has appropriated $20,000 for a new city hospital.

— A bill has been introduced into the Massachusetts legislature providing for the establishment of a hospital for inebriates.

— The Iowa City board of health has prohibited the sale of Limburger cheese, on the ground that it is dangerous to the public health.

— The homœopathic physicians of Pennsylvania have entered a protest against the bill pending before the legislature of that State to regulate the practice of medicine.

— A friend of Grace Hospital, Detroit, Mich., who withholds his name, has given $15,000, which will be used at once to build a contagious disease house near the hospital, with accommodation for thirty people.

— The Women's Medical College of Pennsylvania graduated thirty-six physicians at its thirty-seventh commencement March 7. Among them was an Indian and a Japanese woman, the first of their nationalities and sex ever graduated in medicine. Dr. La Flesche, the Indian, is a graduate of the Hampton School.

— The public health committee of Massachusetts have reported a bill requiring that physicians' certificates of returns of deaths of soldiers and sailors of the Rebellion shall give both the primary and secondary cause of death. In case of refusal or neglect, the physician is subject to a fine of $10 for the use of the town in which he resides.

— Prof. Gerhardt, well known for his connection with the sickness of the late Emperor William, who is in London on a professional visit, was entertained at dinner recently by Sir Andrew Clarke. Twenty leading London doctors were present, and two hundred attended the reception held after the dinner. Prof. Gerhardt was given a most cordial welcome by his brother physicians.

— Queen Victoria has receded from her hitherto unalterable rule prescribing *decolleté* dresses for all ladies who are to appear at court. The new instructions issued from the Lord Chamberlain's office are to the effect that ladies who, either from illness, infirmity, or advancing years, are incapacitated from wearing the usual Court dress, may appear in a high dress with a high collar at the back of the neck, such as indeed was so much in vogue in the eighteenth century. This permission will doubtless have some effect on the dress of women (at least those whose physical charms are not the most captivating) outside court-circles, at the opera, for instance. It is said, by the way, that this reform in Court costume was forced on the Princess Louise by the Canadians. During her husband's governorship of Canada she created quite a commotion, almost amounting to a rebellion, by insisting that all the ladies attending her levees should appear in low dresses, just in fact as they dressed for the Queen's Court. This they refused to do, — fashion, or even a governess-general's command, failing before the rigors of a Canadian winter.

— The Bouchier case, in which a "natural physician," Dr. Etienne, of Olneyville, attended a woman of that name in Providence, R. I., is exciting the liveliest interest. Mrs. Bouchier died after having been treated for three different diseases in as many days. The doctor's prescriptions were: Saturday, for inflammation of the bowels and pneumonia, tincture lobelia and tincture cinchona; Tuesday night, for pneumonia, the following mixture: Two drachms solution acetate ammonia, two drachms ipecacuanha wine, two drachms antimony wine, one-half drachm solution morphine, four ounces treacle, eight ounces water, one ounce hot drops (myrrh, cayenne, and spirits); dose, two tablespoonfuls at 7, one at 9, and one at 11. The same night, for diphtheria, sulphur and chlorate potassium; for fever, thirty drops cinchona in teaspoonful water; for the bowels, a good dose of castor oil; also, to hold strong ammonia to the nose. The post-mortem examination showed that neither of the three diseases was present.

Dr. Etienne says his real name is Stephens, but that he took on the French name to get custom among the Canadians. He came from Canada. He advertises as a seventh son and a natural physician. He claims to be a graduate of the Montreal Medical College.

It is rather a pity that the Bouchier case did not occur a little earlier, when the proposed bill to regulate the practice of medicine in Rhode Island was under discussion. The bill was defeated and this case furnishes a good commentary on the subject.

NEW YORK.

— On March 12th Health Commissioner Griffin, of Brooklyn, sent out a dozen inspectors to examine specimens of all the ice cream for sale in that city. This action was caused by the discovery that more than sixty persons who were at a social gathering had been poisoned by eating ice cream purchased from a caterer on Fulton Street. A sample of the ice cream, which was furnished by the gentleman giving the entertainment, was proved by Dr. Kent, the chemist of the Health Department, to contain traces of arsenic, while the coloring matter used in the strawberry cream proved to be an aniline matter. The caterer stated that he had obtained this coloring matter from one of the largest wholesale drug houses in New York.

— A series of experiments was concluded March 12th on the premises of the Edison Company at Menlo Park, N. J., which, it is said, leaves only minor details to be arranged before the new law providing for the execution of criminals by electricity instead of hanging can be put into operation. Dr. Carlos F. MacDonald, medical superintendent of the State Asylum for Insane Criminals at Auburn had the matter in charge, and among those with him were Dr. A. D. Rockwell, of New York, Dr. Edward Tatum, of Philadelphia, and Mr. Harold P. Brown, the electrical engineer, who has made many experiments upon animals in connection with the present investigation. The chief matters to be decided were the best place and method of applying the destructive force so as to cause death instantly, and with the least amount of pain and struggle; the least force which could be fatal without causing disfigurement, and the best variety of electrical current to be employed. The results, which are claimed to have been entirely satisfactory, have not as yet been divulged, but will soon be transmitted to the governor in the report of the commission appointed in reference to the matter.

Miscellany.

CREMATION OF GARBAGE IN SAVANNAH.

Savannah, Ga., has voted to have its garbage cremated, and has contracted for a Hughes crematory to be built, which is thus described by the Savannah *News*: —

"The crematory itself will be about 30 feet long and from 15 to 20 feet wide. The main body of the kiln or furnace is a vertical shaft built of brick. At its base will be two hydrocarbon burners. Upper and lower triangular flues extend across the middle of the shaft, and also an upper and lower set of baffles or side wings, which are connected by means of wall passages or flues. Underneath these is a shelf, forming a retort in which air may mix with the flames from the burners. Flues are provided for the return of the gases arising from the incineration to a smokestack at the side of the shaft. A hydrocarbon burner is placed at the bottom of the shaft conveying the gases to the chimney, which deodorizes them before they pass out into the air. Perforated steam-pipes are located over the top drop-shelf of the shaft, connecting the burner with the boiler so that the fluids may be carried off.

"The operation of the crematory is simple. When the furnace is brought to the required degree of heat a load of the material to be burned is emptied into the top of the shaft. It falls on the first drop-shelf. After a suitable period this shelf is dropped and the mass of material is allowed to fall on the second shelf and a second is dumped into the kiln. After another interval the second drop-grate is allowed to fall and the material is thrown upon the baffles and flues below, from whence the residuum finally drops down into the ashpit at the bottom of the shaft."

The capacity of the crematory will be 50 tons of garbage per day, and the cost of the process is from 18 to 20 cents per ton. The *News* states that —

"In Montreal it costs just $43,000 to destroy by fire a year's miscellaneous refuse, and $8,000 additional for the burning of its night soil. The destruction of the latter costs 75 cents per ton, and of the former 25 cents per ton. In Minneapolis it is estimated that 15 to 20 cents per ton of refuse pays for the labor employed and the fuel used. Within five days recently the refuse cremated consisted of 33 horses, 59 hogs, 103 barrels of hotel and commission-house refuse, 12 loads of market offal and 70 loads of manure. The aggregate weight was 200 tons, but the ashes deposited in the course of consumption weighed considerably less than 1,000 pounds. The total cost of labor and fuel for this five days' period was $38.25."

HISTORY OF THE RECENT OUTBREAK OF YELLOW FEVER ON THE UNITED STATES STEAMERS BOSTON AND YANTIC.

Dr. Wm. M. Smith, health officer at the port of New York, furnishes to the United States Marine Hospital Service advance sheets of so much of his annual report as relates to these steamers after their return from Hayti, in November last, with yellow fever on board. After narrating the particulars of the outbreak on the two vessels, the points touched at, etc., the report gives the following conclusions as to the source of infection: —

"There is a concurrence of testimony among the officers of the 'Boston' that none of those who had yellow fever on that vessel were ashore while the vessel was at Port au Prince. The steamer was anchored too far in the open bay to warrant the belief that the infection was carried thither by the wind blowing from the shore.

"The utmost caution was observed in communicating with the shore while at Port au Prince, by the commanding officers of the 'Boston' and 'Yantic;' and the fact that none of the officers who were ashore, or of the crew who manned the boats used by them, had yellow fever, affords very positive evidence that the precautions taken were effectual. It may be assumed that the men on the 'Boston' were infected at one of the several ports touched at before reaching Port au Prince. This is scarcely possible. The last port touched at by the 'Boston' was Port Royal, the 31st of October, fourteen days before the development of the first well-marked case, and nine days before the doubtful case above mentioned. The incubative period of yellow fever seldom exceeds five days. Those cases which have seemed to be an exception to this rule, in many in stances have been concealed for the first day either ignorantly or intentionally. There are, however, some instances in which the evidence would seem to prove that the incubation of the disease may be protracted considerably beyond five days. It is believed that such instances are rare exceptions to the rule.

"There is good reason to believe that in many instances the incubative period of the disease is much less than five days.

"Neither the 'Boston' nor the 'Yantic' received anything on board from the shore, while at Port au Prince, except meat and fruit. The fruit, consisting of bananas and oranges, was taken to the vessels by natives in what is called 'bumboats' and was sold to those on board. The main-decks of the 'Boston' and 'Yantic' are so low that communication between those on them and the 'bumboats' was easy, and doubtless frequent, while the natives were vending their fruit. The wet, dirty, and sun-heated bottoms and timbers of the boats of the natives, exposed as they must be at all times, when at the shore or wharves, to an infected atmosphere as well as to the infected filth of the gutters that drain into the bay, certainly supply all the conditions necessary for the propagation of the infection. It would be rather a matter of surprise than otherwise if the boats of the natives were not impregnated with the infection of yellow fever when it prevails at Port au Prince.

"The officers of the 'Yantic' generally believe that the disease was contracted on the 20th of December, from proximity to the shore while engaged in the preparation to take the Haytien Republic out of the harbor. The objection to this is, that it was eight days subsequent to that exposure before the first case of yellow fever developed, an unusually long period for the incubation of the infection. And it should be borne in mind, in this connection, that the disease was even more virulent on the 'Boston,' which was anchored nearly two miles from the city during the period of her stay in Haytien waters.

MASSAGE OF THE UTERUS AND APPENDAGES.

DR. MACAN, master of the Rotunda Hospital, in his presidential address before the British Gynecological Society, discusses the bimanual examination of the female pelvic organs as an aid to fine diagnosis, and speaks of uterine massage as an accomplished success in the hands of Thure Brandt at Schultze's clinic in Jena, in cases of complete prolapse. At the Rotunda it has been tried with a fair measure of success. The technique is thus described.

"The treatment itself consists of two parts, the first being the elevation of the uterus. To carry this out the aid of a skilled assistant is necessary, whose duty it is with one hand to elevate the uterus from the vagina, and to keep it in a state of anteflexion, while his other hand is laid on the abdomen exactly over the uterus. The latter hand indicates to the operator the exact position of the uterus. Standing now at the foot of the couch or sofa on which the patient is lying, the operator lays his hands, strongly supinated, flat on the abdomen, the fingers being pointed towards the pubes, and grasps the fundus between them; its position, as already said, being indicated by the hand of the asistant that is on the abdomen, while the fingers of the other hand of the assistant, which are in the vagina, prevent the fundus being pushed out of reach of the operator. Having firmly grasped the uterus the operator raises it steadily upwards in the abdomen, in the axis of the pelvis, watching the face of the patient the whole time. This is necessary, as the slightest expression of pain is an indication to desist or to go more slowly. In this way the uterus can be elevated as much over its normal level as it had been prolapsed. When the uterus has been elevated as far as possible it is allowed to slip gently from between the hands, and sink slowly in the abdomen. The duty of the assistant is now to receive the uterus as it descends on his finger, which has remained in the vagina, and to keep it in a condition of anteflexion. This movement of elevation is repeated two or three times at each sitting, a few minutes' interval being allowed between each, during which time the assistant massages the fundus in order to arouse it to contraction, and thereby lessen its bulk.

"The second movement now follows, and consists of forcible separation and forcible closure of the knees. To carry it out the patient should be placed in the exaggerated stone position, and closing the knees and thighs should elevate the sacrum from the couch, so that the body rests on the elbows and feet only. While in this position the operator forcibly separates the knees, the patient resisting as much as possible. This is repeated about three times. The contrary movement is now practised, the patient lying with the knees widely separated, and the operator bringing them forcibly together. This is also repeated three times, and closes the sitting. The patient now turns over gently on the face, and remains in that position for from five to ten minutes. It is well, when it is possible, for the patient to remain in the recumbent posture for the first few days of the treatment, but this is not essential.

"The treatment is repeated daily till the cure is effected, the time required varying greatly, but being usually from four to eight weeks."

THE PROPOSED PORTRAIT OF DR. BIGELOW.

IN reply to the letter addressed to Dr. Bigelow, published in the last issue of the JOURNAL, the following letter has been received: —

BOSTON, 52 BEACON ST.,
March 15, 1889.

DR. HASKET DERBY,

DEAR SIR, — Will you do me the favor to express to the gentlemen who signed the letter you sent me my thanks for the very flattering and unexpected compliment which they have paid me in the name of so many members of the Boston Medical Library Association, in desiring that my portrait should hang among the others in the hall of the Association.

I shall be much gratified to do what I can to carry out any wish of the association, and will thank you if you will let me know how I can do so in a way most agreeable to them.

Very respectfully and truly,
Henry J. Bigelow.

Correspondence.

A WARNING TO THE MEDICAL PROFESSION AND THE PUBLIC AGAINST ALMSGIVING.

It is well that physicians and others in the community should be warned against giving alms to one who claims to be a poor old "physician." He is gray-headed and very servile in his deportment, and has, in fact, all the characteristics of a professional beggar.

I have good and sufficient reasons for believing that for years *his* "profession" has been that of an incorrigible beggar. He goes with his family from place to place "begging right and left." After having been absent from this city for some time he has recently returned and is now practising *his* profession here.

Henry I. Bowditch.

REPORTED MORTALITY FOR THE WEEK ENDING MARCH 16, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diph. and Croup.	Scarlet Fever.	Measles.
New York	1,571,558	863	369	21.36	22.56	7.44	5.52	2.40
Philadelphia	1,040,245	405	134	9.60	16.56	2.16	1.12	.24
Chicago	830,000	271	138	24.05	16.65	14.06	1.85	2.22
Brooklyn	814,505	411	170	19.20	21.36	7.92	1.68	4.32
Baltimore	500,343	175	50	6.84	11.40	2.85	1.14	—
St. Louis	450,000	165	61	22.57	15.25	7.32	.61	7.32
Boston	413,567	198	56	13.50	16.00	6.50	1.00	1.50
New Orleans	250,000	90	13	6.66	9.99	1.11	—	1.11
Cincinnati	225,000	141	—	12.07	10.65	5.68	—	—
Washington	225,000	136	43	11.10	17.76	1.48	—	—
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	19	5	31.56	5.26	5.26	—	—
Charleston	60,145	34	11	5.88	8.92	2.94	—	—
Portland	40,000	4	—	50.000	25.00	25.00	25.00	—
Worcester	78,292	20	7	10.00	30.00	5.00	—	—
Lowell	71,518	22	5	13.65	18.20	—	4.55	—
Cambridge	65,552	18	9	11.11	16.66	—	—	—
Fall River	62,647	34	19	2.94	23.52	—	—	—
Lynn	53,334	21	—	4.76	19.04	4.76	—	—
Springfield	40,731	19	7	15.78	5.26	—	15.78	—
Lawrence	40,619	—	—	—	—	—	—	—
New Bedford	37,253	13	6	15.38	—	7.69	7.69	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	9	3	11.11	22.22	11.11	—	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	11	2	—	9.09	—	—	—
Haverhill	26,058	3	—	—	33.33	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	9	—	—	11.11	—	—	—
Newton	21,553	3	2	33.33	—	—	—	—
Malden	19,774	14	6	14.28	42.84	7.14	—	—
Fitchburg	17,534	3	1	—	—	—	—	—
Waltham	17,332	4	—	—	—	—	—	—
Newburyport	13,875	2	—	—	—	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	7	2	28.56	14.28	14.28	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 3134; under five years of age 1119; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 507, acute lung diseases 558, consumption 408, diphtheria and croup 192, scarlet fever 76, measles 62, whooping-cough 52, diarrhœal diseases 39, typhoid fever 29, erysipelas 21, cerebro-spinal meningitis 18, malarial fever 10, puerperal fever 8. From whooping-cough, New York 24, Brooklyn 12, Chicago 5, Washington 4, St. Louis and Cambridge 2 each, Philadelphia, New Orleans and Fall River 1 each. From diarrhœal diseases, New York 12, Brooklyn 6, Philadelphia 4, St. Louis, Boston, New Orleans and Washington 3 each, Chicago 2, Cincinnati, Nashville and Lowell 1 each. From typhoid fever, Philadelphia 8, New York 6, Chicago 4, St. Louis, Boston and Cincinnati 2 each, Brooklyn, Baltimore, Charleston, Lowell, and Boston 1 each. From erysipelas, Philadelphia 6, New York 4, Brooklyn and Washington 3 each, Boston and Cincinnati 2 each, St. Louis 1. From cerebro-spinal meningitis, Cincinnati 4, New York and Washington 3 each, Nashville 2, Philadelphia, Chicago, Baltimore, Boston, Worcester, and Quincy 1 each. From malarial fever, St. Louis 4, Brooklyn 3, New York, Philadelphia, and Nashville 1 each. From puerperal fever, Chicago 4, Philadelphia, Boston, Nashville, and Malden 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending March 2nd the death-rate was 19.7. Deaths reported 3604; infants under one year 871, measles 186, whooping-cough 91, scarlet fever 50, diarrhœa 43, diphtheria 40, fever 22.

The death-rates ranged from 14.6 in Brighton to 33.6 in Preston; Birmingham 18.9; Bolton 21.4; Huddersfield 22.5; Hull 20.3; Leicester 19.1; Liverpool 24.0; London 17.6; Manchester 25.3; Nottingham 19.5; Plymouth 28.0; Sheffield 23.9; Sunderland 19.1.

In Edinburgh 19.7; Glasgow 27.9; Dublin 25.4.

The meteorological record for the week ending March 16, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Mar. 16, 1889.	Barometer.	Thermometer			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration Hours & Min.	Amount in inches.
Mar. 10	29 66	31.5	46.0	25.1	56	64		60.0	W.	N. W.		10	16		C.	O.			.00
" 11	29.86	31.5	41.0	26.7	58	71		64.0	N. W.	N. W		12	13		O.	C.			.00
" 12	30.00	37.0	48.0	25.9	59	55		57.0	W.	W.		10	11		O	C.			00
" 13	29.96	47.5	62 0	36 1	58	47		52.0	W.	S. W		6	20		C	C.			.00
" 14	30.28	33.5	43.0	31 4	37	50		44.0	N. W.	S. E.		24	7		C.	C.			.00
" 15	30.21	35.5	38.0	31.0	68	77		42.0	N. E.	N.		16	18		O.	O.			.00
" 16	29.96	37.0	40.0	35.2	69	96		82.0	N. E.	N. E.		24	36		O.	R.		2.50	.62
Means for the Week	29.99		44.0	30.2				59.0											

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 16, 1889, TO MARCH 22, 1889.

By direction of the Secretary of War, the leave of absence granted Captain RICHARD C. NEWTON, Assistant Surgeon, in S. O. 272, November 21, 1888, is extended to include May 22, 1889. Par. 17, of S. O. 64, A. G. O., Washington, March 19, 1889.

The resignation of Captain RICHARD C. NEWTON, Assistant Surgeon, has been accepted by the President, to take effect May 22, 1889. Par. 18, S. O. 64, A. G. O., Washington. March 19, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 23, 1889.

FARWELL, W. G., Surgeon, detached from the Receiving Ship "Franklin" April 1st, and to the Naval Hospital, Norfolk, Va

MARMION, R. A., Surgeon, ordered to the Receiving Ship "Franklin."

FEREBEE, N. McP., Surgeon, detached from the Naval Hospital, Norfolk, Va., and placed on waiting orders.

SOCIETY NOTICES.

AMERICAN MEDICAL ASSOCIATION. — Fortieth Annual Meeting, to be held at Newport, R. I., June 25, 26, 27, and 28, 1889.

Notice to Exhibitors. — Intending exhibitors should address Dr. Charles A Brackett, Newport, R. I., Chairman Sub-Committee upon Exhibits.

The following classes of applications will be entertained: — 1, Medical books and stationery, charts and diagrams, busts, portraits, engravings, photographs, etc.; 2, Hospital and ambulance plans and models; 3, Surgical instruments and supplies, general and special (gynæcic, obstetric, orthopedic, laryngeal, otic, ophthalmic, dental, etc.). 4, Microscopes, analysis outfits, and electro-galvanic apparatus; 5, Pharmaceutic products; 6, Rubber goods applicable to medicine and surgery, 7, Invalid furniture; 8, Invalid foods; 9, Sanitary appliances, as ventilators, filters, w.-c. basins, traps, and similar necessities, and disinfectants.

As a large attendance is probable, while the space available for exhibits is comparatively limited, the advantage of early application will be perceived Choice of space will be given in accordance with the date of application. Applicants should state the character of their proposed exhibits, that they may be assigned to their respective groups The Sub-Committee reserve the right of rejection, in case of apparent reason.

HORATIO R. STORER, M D.,
Chairman Committee of Arrangements.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, April 3rd, at 8 o'clock. Dr. Royal Whitman will show patients illustrating the results of his treatment for Flat Foot. Drs. A. T Cabot and H. L. Burrell will speak on the subject of Penetrating Wounds of the Abdomen

G. H. MONKS, M.D , *Secretary.*

BOSTON SOCIETY FOR MEDICAL OBSERVATION — The annual meeting of this Society will take place on Monday evening, April 1st, at 8 o'clock, at 19 Boylston Place. Readers Dr. Haskett Derby, "Some Causes of Preventable Blindness." Dr. F. M. Briggs, "A Case of Papillomatous Urethritis" Election of Officers for Ensuing year Election of Associate Members Report of Auditing Committee.

T. F. SHERMAN, M.D , *Secretary.*

OBITUARY.

GEORGE HUBBARD, M.D., OF BOSTON.

Died in Boston, March 19, 1889, George Hubbard, M.D., M.M.S.S , aged eighty years.

Dr. George Hubbard was born in Brimfield, Mass., August 18, 1808. He fitted for college at Monson Academy, and entered Amherst College at the age of seventeen, graduating in the class of 1829. In January, 1830, he went to Virginia for his health, remaining three years. Returning North he took up the study of medicine He studied with Dr. Doane in Boston, attending lectures at various places, and received his diploma from Yale in the year 1835. In former years he served repeatedly on the school board. He has continued in active practice until within the past year.

THOMAS FITCH PERLEY, M.D.

Dr. Thomas Fitch Perley died in Portland, Me , March 22 Dr. Perley was born in Bridgton, February, 1816. He graduated from Bowdoin College in the class of 1837. He was one of the two leading scholars of his class. After graduation he studied medicine with Dr. Timothy Little in Portland, took his medical degree in the Portland Medical School in 1841, and settled in Bridgton to practice At the breaking out of the Rebellion he entered the army, and was appointed brigade surgeon under Grant in the Army of Tennessee. When Secretary Stanton revived the medical service, Dr. Perley was appointed medical inspector-general. He remained at his post until the close of the war. He was a great entomologist, and had the finest collection of butterflies in the country, but it was destroyed in the great fire at Bridgton. Since then he made another, and almost equally fine one.

BOOKS AND PAMPHLETS RECEIVED.

Census of Massachusetts. 1885. Population and Social Statistics. Part 2.

Dreams, Sleep, Consciousness: A Psychological Study. By George M. Gould, M D. Reprint. Chicago. 1889.

Station List of the Medical Department and Hospital Steward of the Hospital Corps. United States Army, March 1, 1889.

Bureau of Education. Circular of Information No. 5, 1888. Industrial Education in the South. By Rev. A D Mayo. Washington. 1888.

On Some Mild Measures in the Treatment of Intra-Nasal Hypertrophies and Inflammations. By W. H. Daly, M.D., Pittsburg, Pa. 1888.

Extracts from the Autobiography of a Paranoiac. Edited, with a Commentary, by Frederick Peterson, M.D., New York. Reprint. 1889.

A Contribution to the Surgical Treatment of Membranous Opacities in the Vitrous. By Charles Stedman Bull, M.D , New York. Hartford, Conn. 1888.

Periodicals, Transactions, and Reports of the Library of the New York Academy of Medicine. Part I. United States and Great Britain Boston. 1889

Concerning Reflex Neuroses due to Eye-Strain. I Three Remarkable Cases of Reflex Neuroses due to Eye-Strain. II. The Influence of Sexualism in Reflex Ocular Neuroses. 1889

On the Relation of the Nasal and Neurotic Factors in the Etiology of Asthma. By F. H. Bosworth, M D., E. L. Shurly, M D., W H. Daly, M D., Andrew H. Smith, M D. 1889.

Bureau of Education, Circular of Information No. 6, 1888. Proceedings of the Department of Superintendence of the National Association at its Meeting in Washington, February 14-16, 1888. Washington. 1888.

Recherches Cliniques et Therapeutiques sur l'Epilepsie, l'Hysterie, et l'Idiotie. Compte rendu du service des Epileptiques et des Enfants, Idiots, et Arrieres de Bicêtre pendant l'annee 1883. Par Bourneville, Sollier, Pillet, Raoult, etc Paris: Publications du Progres Medical 1888.

Original Articles.

A CASE OF TUMOR OF THE BRAIN: REMOVAL; DEATH.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D.
Physician to Out-patients with Diseases of the Nervous System, Boston City Hospital; and
E. H. BRADFORD, A.M., M.D.,
Visiting Surgeon, Boston City Hospital.

The great interest which at present attends all attempts at the operative treatment of cerebral tumors makes it incumbent upon the physician to report every case of the kind, whether successful or unsuccessful. This is our excuse for presenting the report of the removal of a cerebral tumor which was followed by death.

I. THE REPORT OF THE CASE. (DR. KNAPP.)

I was asked in November, 1888, by Dr. J. B. Brainerd, of Boston, to see Mr. G., who was said to be suffering from a cerebral tumor. I saw him on the 27th of November, and from the patient, his family, and Dr. Brainerd, who had attended him for some months, I obtained the following history: —

A. G., 32, married, a florist. The family history is negative; one or two children have died in infancy from the diseases of childhood, but there is no family or personal history of tuberculosis. Before the present illness he has been well. He admits gonorrhœa, but denies syphilis. About May or June, 1886, he had nausea and vomiting, which lasted two or three months, and was attended with some pain in the head. He recovered from this perfectly, but about the beginning of 1887 both hands began to get stiff and feel weak. He thought he had poisoned himself in some way by handling flowers, but there was no eruption on the hands. Some time after that he began to have more or less vertigo. With the stiff feeling in the hands there seems to have been a little loss of ability to use his left hand.

In March, 1887, he had a convulsion. He was alone in the room at the time, but the family heard the noise, and found him on the floor unconscious, with a general convulsion of all the limbs, although it was noted that the left arm was chiefly extended and abducted. About the same time, probably after the convulsion, although he is not certain, he noticed that he could not use his fork as well, or hold objects as well with the left hand, and that the left leg was weaker. The numbness in the hand persisted, and he says that blisters appeared on the fingers.

In March, 1887, soon after he had the convulsion, he went to the Nervous Out-patient Department of the Massachusetts General Hospital. No notes were found in regard to the case, but at that time he had left hemiplegia, with exaggerated reflexes on the left, and slight contracture of the left arm. A diagnosis of cerebral tumor was made, and he was advised to submit to an operation for its removal, but, on learning the gravity of such an operation, he refused. He was given ten grains of bromide and five of iodide three times a day, and later, April 1, this was changed to sixty grains of iodide three times a day. I do not know how long he took it. Since then his sight has failed a good deal. There has been much numbness of the left hand, the paralysis of the left side has increased, and he has had repeated convulsions. Some of these were slight and others severe and general. In the latter he is unable to speak, his eyes stare, he bites his cheeks, and is unconscious sometimes for an hour. After such an attack he is stupid for the rest of the day. His convulsions begin, he says, by a "rumbling" in the left arm and a numb feeling in the left wrist, the hand is rapidly flexed and extended at the wrist, and then the arm is flexed and extended at the elbow, after which he loses consciousness. At a subsequent visit, his wife reported that in such convulsions as she had seen his eyes rolled up and there were convulsive movements of the shoulder; subsequently the whole body was convulsed, or, at times, only the left arm. These convulsions are sometimes attended with severe pain in the head.

In March, 1888, he visited Dr. J. J. Putnam at his office, who took the following notes as to his condition, which were kindly furnished me: —

"March 9, 1888. Has been improving pretty steadily until about ten days ago. Has had three or four convulsions since leaving the hospital, at intervals of about three months. The last attack was about three weeks ago, and was very light, as is the rule in the later attacks. In the last he knew everything that was going on, though he could not speak to his wife, who was with him. The latter said that all she noticed was a movement of the eyes. Within the past week or two he has had a new symptom, consisting in a very tired feeling, which runs up the back after he has been standing for a long time waiting on a customer. This feeling passes up the back and spreads over the head, and then objects seem to grow dark, and he feels dizzy and suffocated, and has to go into the fresh air. He never loses consciousness in these attacks, though he thinks he should if they were a little worse. This feeling lasts only a few seconds, and passes away when he sits down. He says that the sensibility in his left hand is as good as ever, but he can make no use of it. The leg is in about the same condition as a year ago, perhaps a little better." No information in regard to these attacks was volunteered, and, as I did not learn of them until after the patient's death, no inquiries in regard to them were made.

In June, 1888, the patient gave up work, and for much of the time since then he has kept his bed. At intervals since then he has had attacks of very severe pain in the back of the head which required the exhibition of morphine. His memory for past events has grown poor, and he appeals to the members of his family to aid in giving his history. It is said that his speech is slower than formerly, but to a stranger there is nothing very peculiar about it, although it is noticeably deliberate. A month ago he had a very severe attack of pain in the head, with a burning and pulling feeling in the tongue and stomach, and some trouble in swallowing, the trouble finally yielding to morphine and bromide of potassium. For some time he has had "imaginings," — ideas that he was in various places, — lasting two to five days, the last one being two weeks ago. Ordinarily the mind is clear, and at present he has little headache, and no vertigo. His sight has steadily failed, but he has never had diplopia. He has never had earache, tinnitus, or deafness. His appetite and digestion are good. He is rather costive, but the nausea and vomiting have ceased. There are no thoracic symptoms, — cough, pain, dyspnœa, or palpitation, — and no trouble with micturition. He has a dead feeling in the left arm, and sometimes he cannot tell where it is; occasionally there is the same feeling in the left leg, and, to a slight degree, in the right arm. In walking, he has to drag the left foot after him.

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[1] Read before the Boston Society for Medical Improvement, Feb. 25, 1889, and before the New York Neurological Society, April 2, 1889.

Physical Examination. — The man is rather slender, reasonably well nourished, and intelligent looking. Peppermint is readily detected and named when applied to either nostril. The vision is defective, but the field is fairly good. The pupils are of moderate size, and react to light and accommodation. He cannot move his eyes as far to the left or to the left and up, as he can to the right. The ophthalmoscope shows double optic neuritis. The tactile sensibility of the face is diminished on the left, and the masseters seem to contract less strongly. The right angle of the mouth is drawn up a little more than the left in laughing or talking; but he can draw the mouth to the left perfectly well voluntarily. The tongue is protruded straight without fibrillary tremor. He says his taste is unimpaired and that he can swallow well. There is diminished tactile sensibility over the left side, which is most marked in the left forearm. With the eyes shut, he is uncertain as to the position of either the left arm or the left leg. The left arm is held flexed at the elbow, with the wrist pronated and semiflexed, — the ordinary position in post-hemiplegic contracture, — and there is distinct rigidity of the arm and hand. The arm can be abducted and slightly rotated at the shoulder voluntarily, and flexed a little at the elbow, but he cannot move the wrist or the fingers. He can move the right arm in all directions with fair strength. He can move the left leg in every direction, but it is rather stiff and noticeably weaker. The abdominal, epigastric, and cremaster reflexes are absent on the left and present on the right; the plantar reflex is present on both sides, but it is much more marked on the right. The triceps, radial, and ulnar reflexes are rather more marked on the left side than on the right. The knee-jerk is much exaggerated on the left, and there is a clonus both at the ankle and the patella on that side, with front tap contraction. Examination of the chest was negative. There was no tenderness on percussing the skull. He was able to stand and walk from the bed to the chair with some support, dragging the left leg; and he was not much fatigued by a rather long examination, lasting over an hour.

December 1. Examined again with Dr. J. J. Putnam. In his last convulsion, his wife says that the head and eyes were turned to the right. The eyes were again examined with the ophthalmoscope; and Dr. Putnam reported that there was such a swelling and projection of the disks as to require the addition of a $+\frac{1}{12}$ lens to overcome it. We found the sensibility to cold diminished in the left wrist, and that the tactile sensibility of the left side of the face was not so good as on the left side of the neck. He cannot tell, with his eyes shut, when the fingers of the left hand are moved.

At my first examination I made the diagnosis of a tumor of the brain, located in the right hemisphere and involving chiefly the centres for the wrist and hand in the ascending frontal and parietal convolutions, opposite the middle of the second frontal convolution. No definite conclusion was reached as to the nature of the tumor; but I believed it to be of good size, not very vascular, and possibly infiltrating, — perhaps an infiltrating glioma. I decided that an attempt at removal afforded the only chance for life, although I knew that, with advanced optic neuritis and secondary degeneration, perfect recovery was impossible. The chances of an operation were stated to the patient and his family, and they decided to take the risk of it. He therefore entered Dr. Bradford's service at the City Hospital on December 17.

I saw him, with Dr. Prince, two or three hours after admission. He was then comfortable and in good spirits. He can apparently not localize a touch well on his left hand, referring a touch on the finger to the back of the hand. On the right hand he can localize fairly well. On testing his localizing power on the face, however, certain curious results were obtained. When either ear is touched, he refers the sensation to the right ear, saying so and indicating it by the finger. We then touched the ears and the nose, and asked where he felt it. If we said, "Is it the ear or the nose?" he generally answered, "The ear." On reversing our question and saying, "Is it the nose or the ear?" he would say, for three or four times, "The ear"; and then, seeming to comprehend the change in the question, he would say, "The nose," persisting in this reply in the same way when the question was changed again. Neither our questions nor his answers bore any relation to the facts as to whether the ear or the nose was touched. Beside answering in this way, he would indicate the point he thought was touched with his finger, in a way to correspond with his answers.

The remainder of the history is taken mainly from the hospital records, with a few additions and some abridgment: —

"December 18th. Seems comfortable and fairly intelligent. Rather slow mentally and physically. Slept fairly. Lies on right side most of time. Complains of cold.

"December 19th. Slept poorly. Got out of bed about 1 A.M. Said bed tipped over.

"The ears were examined by Dr. J. Orne Green, who reports: 'Ears both tightly filled with hard masses; cerumen removed after softening. Membrana tympani not particularly unnatural. Tests rather unsatisfactory on account of noisy ward. Watch D and S about twelve inches. Voice, low tones repeated accurately at about fifteen feet. Weber's test, fork C, somewhat louder in the right. Rinne's test: fork C, R. $\frac{\text{air conduction}}{\text{bone conduction}} = \frac{\text{40 seconds}}{\text{14 seconds}}$; L. $\frac{\text{a.c.}}{\text{b.c.}} = \frac{45}{15}$. By Valsalva method the air enters right with good note, left doubtfully. Not the slightest sign of any circumscribed congestion in external canal or drum membrane.'

"December 23rd. Eyes examined by Dr. H. W. Williams, who reports: 'In both eyes outline of disk irregular. Vessels considerably diminished in size, especially the arteries. In the right disk a white streak stretches across half of disk, which might be from fibrous degeneration of nerve-tissue.

There are no hæmorrhages scattered about fundus, as are frequently found in brain tumors. In the left eye the appearance is that of beginning atrophy of the disk. In the right eye the same change, but not as far advanced.'"

Early in the forenoon of this day he was seen by Dr. Prince, who told me that his responses to the tests for localizing sensations were perfectly good. I saw him with Drs. Folsom and G. B. Shattuck later in the forenoon, and then his responses were much better than on the 17th, but they were not accurate. He was somewhat uncertain whether his ear or his nose was touched, but in the majority of cases his answer was correct. A day or two before he had a slight convulsion, seen by another patient, who stated that in it the eyes rolled up, his fingers worked, and later his whole arm shook. During my visit I questioned him in regard to his family history, and, among other matters, he began to tell me of a brother who died in infancy of cholera infantum — some years ago. Suddenly he stopped in the midst of a sentence, his mouth was drawn a trifle to the left, and both corners were drawn up, and the face assumed an expression as if he were just about to burst into tears. Almost simultaneously the left arm, which was lying across his body, was raised an inch or two, carried a trifle toward the median line, the hand was a trifle more pronated, and the whole arm trembled slightly. In about fifteen seconds this ceased, and he resumed his sentence. When asked what the matter was he said, "Nothing." When asked what he did, he said he did nothing. At last, when asked why he broke off his sentence thus, he said that it made him feel badly to talk about his brother.

"December 24th. Convulsion seen by head nurse, who reports: 'Attention attracted by a loud moan; patient lying on left side (ordinarily lay on right),[2] head slowly and rigidly drawn backwards. I took hold of his left wrist, the hand and tendons were rigid and twitching; the arm was also twitching, especially at the shoulder-joint. Convulsion lasted three or four minutes. Pupils widely dilated. He was able to speak during the convulsion, and kept up a continual moan. Head very hot after it, and he was thirsty. Did not appear more stupid after it.'

"December 25th. Two or three slight convulsions during the past few days; otherwise comfortable. The convulsion is said to begin by twitching at the metacarpo-phalangeal joint of the left hand, then becoming more general. Last night was very noisy, cried out, and complained somewhat of pain in the head. When asked what the reason was for his cries he answered that he was all right. This afternoon he had a convulsion, falling out of bed and cutting his forehead slightly over the left eye.

"December 26th. Another bad night. Very noisy. Required three doses of bromide of potassium, forty grains each, during the night. Seems more comfortable, but more stupid. Head shaved.

"Eyes examined by Dr. Wadsworth, who reports: 'Very marked papillitis in both eyes. Disks swollen, prominent, with steep sides, the swelling entirely hiding the outline of the disk, but not extending much beyond it. The retina, up to the immediate neighborhood of the disks, quite transparent. The swollen disk is grayish, containing very numerous fine vessels. The central veins on the disk are a little large, the arteries almost invisible. This last condition is especially marked in the right eye. On the retina the arteries and veins are of almost normal size and condition. A few quite small hæmorrhages close to the disk. Central portion of disk in the right eye shows more whitish reflex (sclerosed nerve fibre or connective tissue?). The inflammation appears in rather a more active stage in this eye than in the other. The sight is evidently imperfect, the exact amount of it not easily determined. The movements of the eyes in all directions not carried out as far as normal, but this seems to be due to the mental condition, as there is no evident paralysis.'"

The same afternoon I examined the surface temperature of the head, using two thermometers lent me by Dr. Putnam. They were held on the scalp so firmly as to leave an indentation, applied to corresponding points, and held in position for five minutes.

One and a half inches above external angle of orbit. R. 94.6. L. 94.8.

Over supposed site of tumor (see cross, Fig. 1). R. 95.4. L. 94.9.

On this trial the pressure with the left-hand thermometer was a little less constant.

Over parietal eminence. R. 95.5. L.95.6.

These tests seemed to tire him, and he complained a good deal of them, and of headache, so I did not proceed further.

"December 27th. Throat and nose examined by Dr. De Blois, with negative results.

"Urine slightly high colored, acid, 1016. No albumen or sugar. Sediment slight and flocculent, few round cells, mucus, few crystals of uric acid and calcic oxalate.

"Patient was fairly quiet during the night, but he had to have bromide and morphine (1–6 grain) for severe headache. Slept heavily most of the morning. Dr. Knapp marked out the fissures on the scalp with an aniline pencil [using the methods of Broca, Reid, and Horsley], marking the chief fissures, later, with a solution of nitrate of silver. [Too strong a solution was used, and the result was a destruction of the epidermis, leaving a raw surface. Tincture of iodine would be better for such a purpose.] The patient sat up in a steamer-chair during the process, but toward the end grew weak and became restless and uneasy, vomiting violently. Complained of pain in the head after getting back in bed, and had cold applications to the head and morphine. His moods changed rapidly: at times he joked with his friends, at others complained of his head. Pain referred to right parietal region. Since entrance there has been a marked change for the worse in his condition. He takes nourishment but poorly. [He bore the long examination in November very well, but his exhaustion after the simpler process of measuring his skull was so great that I really grew alarmed as to his condition.] Given two drachms of fluid extract of ergot three times to-day.

"December 28th. Somewhat noisy; headache towards morning, requiring bromide and morphine.

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[2] The patient told the nurse that his wife had noticed that every time he lay on his left side he would have a convulsion.

In the forenoon said he felt very well, and was anxious to have the operation over."

II. THE REPORT OF THE OPERATION.
(DR. BRADFORD.)[3]

The operation of removal of tumor of the brain was undertaken in this case after due deliberation, with the hope that the patient's condition might be improved by such operation. The patient himself was fully informed of his condition, and his relatives were told of the risk of the undertaking. The operation was performed December 28. The day before the operation the patient's head was scrubbed, cleaned, and shaved, washed with soap and water, and the lines of localization were marked by a solution of nitrate of silver by Dr. Knapp, the head washed with a corrosive sublimate, and a dressing of corrosive sublimate applied to the scalp. Fluid extract of ergot a day previous to the operation, and a subcutaneous injection of morphine was given just previous to etherization. A large semicircular incision was made, with the concavity downwards and backwards, with the supposed site of the tumor as a centre. The flap was reflected back, and a trephine applied from the side of the tumor.

Some delay was caused by bleeding from the scalp, which was eventually stopped by the use of a rubber band. The skull was perforated by a 1¼ inch trephine applied in two adjacent points, the trephine being an inch in diameter, and half an inch was removed by means of a saw and bone-forceps. (Fig. 1.)

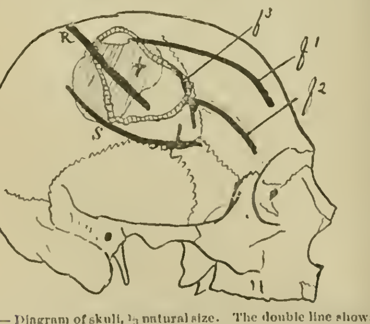

FIG 1.—Diagram of skull, ⅓ natural size. The double line shows the trephine opening. The shaded portion shows the situation of the tumor. The cross shows the point marked before operating as the chief seat of the tumor.

R, fissure of Rolando. f^1, f^2, first and second frontal sulci.
S, fissure of Sylvius. f^3, precentral sulcus.

The semicircular flap of the dura was divided one-eighth of an inch from the margin of the bone. The brain was found to bulge and pulsate, but was normal in color. A fissure running downward and forward in the supposed line of the fissure of Rolando was noted in the posterior part of the opening. The brain convolutions were flattened, and the brain gave on palpation a somewhat fluctuating feeling. The cortex of the brain was incised with a knife and a probe inserted. No resistance was encountered. The incision in the cortex was enlarged, and the forefinger inserted and carefully pushed downward, and at a distance of half an inch from the surface of the cortex a difference of resistance was detected, and this was found to extend downwards and backwards towards the cerebellum till the full length of the finger was inserted. The resistant portion was felt to be distinctly different from the surrounding tissue of the brain.

On withdrawing the finger back from where it had been inserted a small nodule was found directly under the cortex, connected with a deeper nodule, but easily detached from it by careful manipulation; the finger was passed around the whole mass, and separating it from the adjacent parts the tumor was then turned out of its bed by means of the finger, stretching the incision in the cortex slightly. There was no hæmorrhage from the brain. The brain-substance around the tumor appeared to be of normal consistency and appearance.

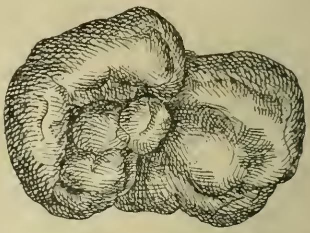

FIG. 2.—The tumor, natural size. From a drawing by Dr. H. P. Quincy.

The removal of the tumor from the brain had no immediate effect upon the pulse or respiration, and after the removal the pulse, which was very weak, improved slightly. The fragments of the bone, which had been removed by trephine and bone-forceps, were placed in sterilized water kept at blood-heat by means of a water-bath. These were inserted after the tumor was removed, the cavity in the brain having been irrigated by warm sterilized water; a drainage-tube was inserted, the skin-flap closed. The flap of the dura mater was not stitched, as it was found that this could only be done by stretching the dura mater more than was thought advisable.

The patient's pulse, at the beginning of the operation, was 58, of fair strength and regularity.

After the removal of the trephine button, the pulse was 96 and intermittent. The respiration was 20, and regular. The pulse began to fall rapidly, and at the time the trephining was complete the pulse could not be felt at the wrist.

The respiration increased to 24; several subcutaneous injections of brandy and atropia were given, but no effect upon the pulse could be noted. The pulse, at the time of the removal of the tumor, was 156, and very weak. The respiration remained quite regular until after the operation was finished, when it increased to 36, and became very shallow and weak. Three-quarters of an hour after the operation the patient died. The whole operation from the time of the first incision to the removal of the tumor was fifty minutes. Ten minutes more were required for the completion of the dressing. No autopsy was allowed. It may be added that the tumor was found to be in precisely the location

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[3] Dr. Bradford is indebted to Dr. E. G. Brackett for his assistance in preparing this article.

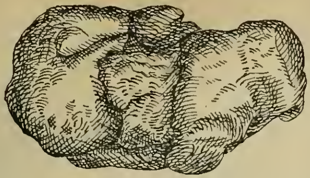

Fig. 3. — The tumor, natural size. Side view, from a drawing by Dr. H. P. Quincy.

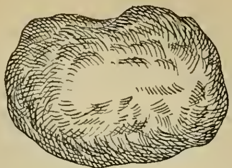

Fig. 4. — The tumor, natural size. End view, from a drawing by Dr. H P. Quincy.

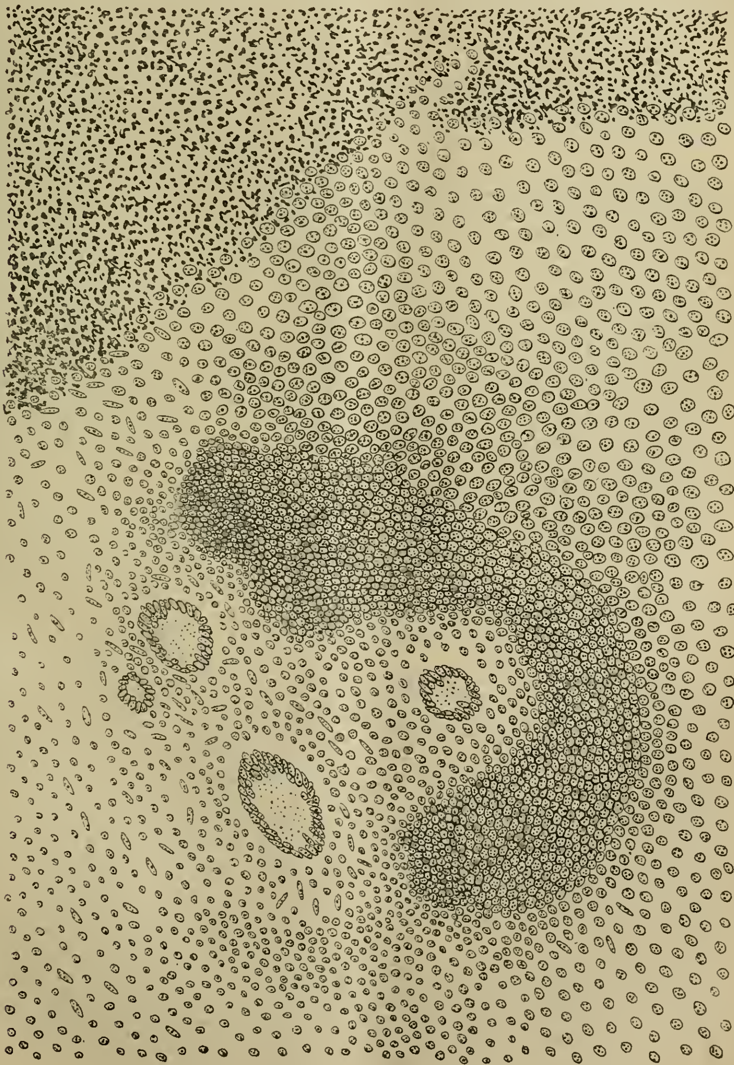

Fig 5. — Microscopic section of the tumor. From a drawing by Dr. H. P. Quincy.

indicated by Dr. Knapp, and that the size and location of the tumor proved to be exactly what was predicted before the operation.

After removal the tumor was found to weigh 35¾ grammes and measured 7 by 4 and 3 centimetres. (Figs. 2, 3, 4.) On section, extensive white, cheesy centres were found surrounded by a thin, irregular layer of firm, yellowish-brown, slightly translucent tissue. The central cheesy portion of the layer nodule presented a suggestion of a concentric arrangement of layers. Under the microscope, fibrous tissue, with many giant cells, epithelioid cells, and an extensive round-celled infiltration.

Dr. Henry F. Sears, assistant pathologist to the hospital, reports as follows: —

"Microscopically the growth was seen to consist of finely granular detritus, surrounded by a layer of connective tissue, in which were seen many giant cells, with epithelioid cells, and round-cell infiltration.

"On staining sections, from a portion of the growth hardened in alcohol, by Koch's method, the presence of the bacilli of tuberculosis was seen, thus confirming the diagnosis of tuberculosis." (Fig. 5.)

(To be continued.)

A CASE OF SUPPRESSION OF URINE FOR TWELVE DAYS, FROM COMPRESSION OF BOTH URETERS: AUTOPSY.

BY JOHN W. FARLOW, M.D.,

Instructor in Gynecology in the Boston Polyclinic.

Mrs. B., thirty-five years old, consulted me October 24, 1887. Her previous health had been good. She had two children, the youngest three and one-half years old, and had miscarried two years later, apparently from taking ergot and other drugs. As a result of this she was obliged to remain in bed a number of days on account of severe pain, but was soon in presumably good health. In June, 1887, she went West, and, as the result of exposure at the time of a severe storm, she had backache and more or less nausea. She returned home in August, but the nausea continued together with occasional swelling of the face. No especial pain was felt anywhere.

Although her menstruation appeared regularly the nausea caused her to think that she might be pregnant. I found the uterus in good position, movable, not tender or enlarged. A feeling of resistance was noticed in the left side of the abdomen, on pressing deep toward the pelvis, presumably in the broad ligament. A slight resistance was also felt on the right in a similar position. Behind the uterus, in Douglas's pouch, several firm, projecting nodules were felt, seemingly having no particular connection with the uterus. I wrote in my record-book, "Not pregnant; is this simply inflammatory or is it malignant disease, or both together? to examine urine."

She became worse the next day and sent for another physician, who examined her urine and found it very pale, specific gravity about 1000, no albumen, and no microscopic sediment. October 29th the color was pale, acid reaction, specific gravity 1010, quantity in twenty-four hours several quarts, a good proportion of albumen, epithelial cells and degenerated granular matter, some pus and a few hyaline and granular casts. He made a diagnosis of Bright's disease. The vomiting continued; there was some œdema of face and a very severe cough.

Not being relieved she called a homœopathic physician; but her condition did not improve, and a small amount of albumen was usually found in the urine. Toward the latter part of November she went four days and nights without passing water, her general condition being about as before. The urine started again and continued in large amounts till December 15th, when it stopped again. The nausea and vomiting became rather more marked, and there was some œdema of face and neck.

I saw her again December 23rd, two months after I first saw her, and found her in bed. Face and eyelids rather œdematous, but no œdema elsewhere. Skin dry, pupils normal, nothing abnormal in heart or lungs. Pulse 80 and good. No evidence of hypertrophy of left ventricle. Abdomen tympanitic. No ascites and no tumor felt. Some tenderness in left iliac region; *per vaginam*, uterus movable and not enlarged. An irregular, hard mass was felt in Douglas's pouch, extending toward the left, less marked toward the right. *Per rectum* this mass was more plainly felt and was tender. No urine in bladder. Constant vomiting, even of milk and lime water. No stool for fourteen days and no urine for eight days.

I tried by various manipulations and putting the patient in different positions to see if I could lift up the hard mass and thus remove the probable obstruction to the urine, but without success. I ordered pil. elaterii gr. 1-10 every hour till bowels moved. I put her in a hot bath, but she felt faint and could stay only a few minutes. Blankets and hot bottles caused her to sweat profusely, and she had a number of loose stools in the night.

She seemed relieved of some of her distress, and there remained but little œdema of the face. Temperature 37.5. The next day, December 24th, she was able to retain milk and lime water. There was tenderness in both iliac regions. December 25, passed a comfortable night. No urine or stool. Dr. A. T. Cabot saw the patient with me and we agreed that the growth in Douglas's pouch was probably malignant, and whether so or not, it was probably blocking up both ureters near their junction with the bladder. We decided to continue symptomatic treatment, and if urine started up again, and the case progressed favorably, to consider the question of operation to relieve the obstruction, without, however, much hope of success. The vomitus examined by Dr. Gannett showed no albumen or urea. The patient sat up in a chair and spent a fairly comfortable Christmas day, although she had passed no urine for ten days.

December 26. Passed a sleepless night. No urine. One stool. No œdema. Fairly comfortable during the day. Feet cold, necessitating hot bottle. In the afternoon, at my suggestion, she took the knee-chest position and passed a little more than a teaspoonful of urine, the first since December 15th. This contained a large trace of albumen, epithelium from the bladder, some clumps of round cells, and a very few hyaline and epithelial casts.

December 27. Had a very poor night; but little sleep and felt quite faint. This morning passed urine twice, about 3oz. in all. Says she felt some pain and then something seemed to give way and urine came suddenly. Clear. Sp. gr. 1010. Albumen as before, no casts. Did not feel relieved. Skin dry. Hot bottles. Passed nearly one and a half pints of urine during the day. She was much more distressed, and vomited.

December 28. Rested well during the night, but at 3 A.M. had a general convulsion, again at 9, 10, and 11 and at frequent intervals till 7 A.M. the next morning, thirty in all. These convulsions did not differ at all from ordinary uræmic or puerperal convulsions, and there was coma between. She passed over two quarts of urine in the twelve hours just preceding the convulsions, and during the day large quantities of urine were passed involuntarily.

December 29. Some consciousness in early morning. Skin moist, pulse more regular.

December. 30. Had a quiet night and slept. Perfectly rational in the afternoon. Urine involuntary at frequent intervals. Pulse intermittent.

December 31. Very little sleep. About two quarts of urine a day now. Pain in head. No nausea. Several stools, caused by cathartic.

January 1. Slept well. Headache. Some pain in back and abdomen.

January 2. Drinks two quarts of milk and passed the same amount of urine. Sp. gr. 1010. Urea 14.35 gms. per litre, or 28.70 gms. in twenty-four hours.

January 4. The right kidney can be felt, smooth and not much, if any, enlarged, movable and rather tender. The left kidney could not be made out. Backache relieved by hot douche.

January 8. Sitting up. Two quarts of urine daily as before.

January 9. No urine since 4 P.M. yesterday. Urea then 10.24 grms. for 20 c.c. urine. Some puffiness under eyes, and nausea; one stool. Pain in right side, and right kidney feels larger, nothing on left side. *Per vaginam*, hard mass seems large and firmer. Pilocarpin gr. 1-6 subcutaneously had very little effect.

January 10. Sitting up. No urine. Hot bath.

January 11. Pain in head. No nausea.

January 12. Several loose dejections. Menstruation several days overdue.

January 13. Poor night. Headache severe. Drank nearly two quarts of water, which caused twelve stools. Face swollen. Feels weak.

January 14. Tongue very dry. Pupils normal. Pulse 70. Says she cannot keep her legs still. Right kidney seems a little smaller.

January 15. Better. Sitting up. No urine since January 8. Passed three ounces of water this morning. Feels hungry. Face œdematous. Two quarts of milk a day.

January 16. Restless night. No sleep. Couldn't keep her legs still. Less headache and nausea. Seven stools and one quart of urine. Pulse 70.

January 17. Had a better night, but twitched some. One and a half quarts urine in twenty-four hours, same character as before, except that there was considerable pus. Feels very faint and needs to be fanned. Very bad dreams when she tries to sleep.

January 18. Had a fair night, but had a convulsion toward morning. Later in the day seemed much better. Passed two and a half quarts of urine during the evening and night, and one quart in the day. Severe pain in hepatic region when she tries to move. Dr. E. S. Wood had examined several specimens of urine, but never found anything but what I have already referred to, but in yesterday's urine there were many aggregations of large cells which seemed suggestive of malignant disease.

January 19. Fair night. One and a half quarts urine. Nausea. No headache. In yesterday's urine many epithelial cells and nests of epithelium, onion-like bodies, and some papillæ covered with epithelium. After this, nothing special was found except an occasional cast.

January 20. Severe cramp in right side and distress in stomach. Looks and seems very sick. No œdema. Respiration labored. Hands and feet numb.

January 21. Better in the night.

January 22. Very bad night. Vomited much. Headache. Respiration very difficult. Thinks flatus escapes from vagina. No fistula found in vagina or cervix, and tampon in vagina for several hours shows no trace of fæces. Pulse very weak.

January 23. Very nervous and delirious at times. Stomach much distressed and vomits often.

January 25. Ulceration of lips and gums. Legs restless. Requires stimulants for her faintness. Great pain in left iliac region. Right broad ligament very hard and firm, as is also left side of pelvis. Nodules in Douglas's pouch much less marked.

January 26. A little better. Urine as before.

January 29. No urine since yesterday morning. Chill at 10 A.M. and others during the day.

January 30. No urine. Very weak and restless. Left kidney can be felt, movable and tender and somewhat enlarged. No œdema.

Died from exhaustion at 6 P.M.

Autopsy by Dr. W. W. Gannett twenty-two hours after death: —

Both ureters near their entrance into the bladder were embedded in a dense fibrous structure which reduced their calibre so that a very small probe barely passed. This tissue extended to either side into the broad ligaments. The ureters were moderately dilated above the stricture, as were also the pelves of the kidneys. These latter were pale, but showed no special pathological change. The bladder, vagina, and rectum were not connected at all with the growth of the ureters.

From a diagnostic and pathological standpoint, such a case is very interesting. Instances in which anuria has lasted as long as, and even longer than, in my case, from a number of different causes, are sufficiently numerous, so that we must consider several possibilities. Dr. E. P. Fowler, of New York, in his book on suppression of urine, has tabulated 93 cases prior to 1881, and I have the records of 32 others. By far the most frequent cause is the blocking of the ureters by calculi. Fowler collected 31 cases in which this was the cause, or in exactly one-third of his 93 cases. And as in 25 of his cases no cause is stated, it follows that of the 68 cases where the cause is stated, 31, or nearly one-half, were due to calculi; of my own 32 cases, 16 were due to calculi. Fowler has 7 cases due to scirrhus occluding the ureters near the bladder. I have only two examples of that. Eight of Fowler's cases were due to mercurial poisoning, 1 to cystic degeneration of the kidneys, 2 to obstruction of the renal artery, 1 to abscess of one kidney with previous disease of the other: I have one case of this. Valvular occlusion of the ureter and previous destruction of the other kidney existed in 2 of his cases. Six others followed scarlet fever, 5 cholera, and 1 measles, and 1 of mine was after diphtheria. Fowler has 2 instances of hysteria and I have 4. He has 1 ascribed to spinal irritation and 1 to an injury. I have 1 case due to a tumor, probably an abscess, near the kidney, 1 due to cancer in the prostate and which was called reflex, and 1 where the ureters were constricted by old peritoneal bands.

Having thus run over the causes which have been at work in the past to bring about this suppression of urine, let us examine the symptomatology for data from which to make a differential diagnosis in our own case, with the chance greatly in favor of its being due either to calculi or malignant disease around the ureters.

Roberts, in his work "Urinary and Renal Diseases," divides cases of anuria into non-obstructive and obstructive. Suppression in the former is due to some organic disease of the secreting tissue, or to some disturbance in the innervation or vascular supply of the kidney. In the latter, the secretion is suspended by a mechanical obstruction in the ureter or pelvis of the kidney. In these cases the organs themselves are not primarily at fault, but their function is arrested by the blocking up of their excretory channels. He goes on to say that non-obstructive cases rarely prove fatal as a direct consequence of the anuria, but through the general effect of shock and collapse which has caused the suppression. The cases run a very rapid course, ending in death or recovery in a few hours, or a day or two. Suppression from obstruction produces its effect more slowly. If it results fatally its termination is delayed for eight, ten or more days. In non-obstructive cases the urine is high-colored and concentrated, and contains albumen and casts, showing renal disease. In cases with obstruction the urine which escapes is pale, watery, and devoid of albumen and casts.

This division of Roberts is a broad and generally correct one, but has numerous exceptions. Cases of anuria after scarlet fever, measles, diphtheria, mercurial poisoning, hysteria, etc., lasting eight, twenty, twenty-five, and fifty-one days, cannot certainly be said to belong to his first division, and in them there is no mechanical obstruction. However, as by far the larger number of cases of anuria of any length are due to calculus or cancerous obstruction of the ureters, and as the great majority of cases of diminution and even short suppression of urine, with albumen, casts, and death in a short time from uræmia, are due to organic disease of the kidneys, the above generalization is of value but is not to be followed too closely.

In my patient there were periods of suppression of four, twelve, and seven days, and the urine copious, very pale, of low specific gravity, and there was but little albumen and often no casts. These facts, together with the long absence of uræmia, make it evident that she was suffering from some obstruction to the urine. The excretion of large quantities of pale urine with low specific gravity, with a trace of albumen and occasional casts, are not, in such cases, evidence that the kidney is diseased. The absence of anything in the pulse or heart to indicate hypertrophy of the left ventricle, and the fact that there had already been a period of suppression of four days without special symptoms, made it evident that there was no serious disease of the kidneys.

Provided no vaginal or rectal examination was made, as is generally the case in ordinary diseases of the kidneys, could this compression of the ureters have been diagnosed before suppression set in, or was the diagnosis of chronic interstitial nephritis a justifiable one?

Nausea, vomiting, slight œdema of the face, and the kind of urine already referred to, were the only symptoms. The only diagnostic point wanting to establish a probable structural disease of the kidney was hypertrophy of the left ventricle and its attending increased arterial pressure. In a woman with large breasts this hypertrophy is often hard to make out with certainty, and the tension of the arteries, although often characteristic, is not always so. Considering the rarity of compression of the ureters from causes other than calculi, it seems to me that before suppression set in the most probable diagnosis was chronic interstitial nephritis, provided, as I say, no rectal or vaginal examination was made. But, as soon as suppression without uræmia set in, this diagnosis would have to be given up, for the anuria would indicate either diminished pressure from above or obstruction below, and if the kidneys were sufficiently diseased to account for the diminished pressure from above, death would ensue within a few hours or a day or two of the suppression.

My patient had no history of gout, gravel, or renal colic or calculus, and the former suppression was accompanied by pain, nausea, vomiting, and some œdema for a number of months, and these, together with the absence from the urine of any pieces of stone, made it highly improbable that there was a calculus in the ureter.

The right kidney could be felt, and was movable, smooth, and not much enlarged, making it improbable that a neoplasm of the right kidney or ureter was causing the anuria, the left kidney being absent, rudimentary, or disorganized from previous disease, and there was no history of previous disease.

Still, cases of absence of one kidney can give rise to symptoms resembling those of my patient, and these are hard to diagnose. In the cases of absence of one kidney which I have collected, the anuria was due to the blocking of the other ureter with a calculus. It is possible for a constriction of one ureter by cancer or other growth, or a cicatrix, to cause anuria when the other kidney is absent, but I have found no instance on record; and as in my case it was possible to feel this hard mass in a position where it could compress both ureters, it was more natural to suppose that such was the case, rather than to think that the right kidney only was present because I could feel that very distinctly and could not feel the left one; and as it turned out I was able to feel the left one a few days before death. It was evident that there was no marked degree of hydronephrosis. Where the obstruction takes place slowly the ureters and pelvis sometimes become very much dilated and the hydronephrosis can be felt as a large fluctuating tumor; but in sudden occlusion the pelvis and ureters are usually not much dilated. Robert says that temporary suppression for some days, followed by a copious flow of urine, is characteristic of hydronephrosis. Although in my case and in some others which I have recorded these symptoms existed, there was no particular hydronephrosis. I was fortunate in having a thin patient who had borne children, so that I should probably have been able to feel a large, fluctuating kidney. Haehner records a case where a large tumor in the right iliac region in a case of suppression was supposed to be a hydronephrosis and it was aspirated. The fluid obtained was not urine, and the autopsy showed no hydronephrosis, but the kidney and capsule were as large as a man's head. The very œdematous capsule had been aspirated, but the needle did not reach the kidney.

Rectal examination is of the utmost importance in all cases of suppression. In certain cases calculi become impacted near the entrance of the ureter into the bladder, and can be felt *per rectum*. Cullingworth reports a case in which a hard mass was felt on each side of the uterus ante-mortem, which the autopsy proved to be a calculus in each ureter near the bladder.

I should say, then, that when I saw the patient in December, after anuria for eight days, I was right in saying that the mass felt *per rectum* was constricting both ureters near their entrance into the bladder, that both kidneys were in a fairly normal condition structurally, and that there was no considerable amount of hydronephrosis.

With regard to catheterization of the ureters as an aid to diagnosis, the parts were distorted in my patient so that the usual landmarks were wanting. Even had they been present it would have been impossible to pass the catheter into the diminished calibre of the ureters.

As to the nature of the mass in Douglas's pouch, the situation is not a common one for malignant disease unless it is connected with the uterus, vagina, or rectum, and it apparently had no connection with these organs. It is a frequent seat of inflammatory processes, and although there was no particular history of pelvic pain I considered that inflammation might be a factor in the case, whereas the growth and changes in the mass were more the history of a new growth.

In experiments on dogs, where the ureters are tied, the pressure in the ureter rises till it reaches the pressure of the secretion. When the manometer shows a pressure of 60 mm., secretion stops, or if it continues it is absorbed. The urine which flows away after the ligatures have been removed is always pale, of low specific gravity, and contains but little urea. This is just the kind of urine which we find clinically where the ureters are occluded. The secretion of urine is also influenced by the force of the heart's action: the stronger the heart the more urine, and the less the action of the heart the less urine and more albumen. This is notably the case in diseases accompanied with collapse, such as cholera, and can extend even to suppression for several days. Diminishing the supply of blood through the renal artery has the same effect, namely, diminishing the amount of urine and urea. The influence of the nervous system is seen in cases of hysteria where anuria may exist for a long time, perhaps from spasm of the vessels of the glomeruli.

A most striking feature in all these cases is the entire absence or very late appearance of uræmic symptoms. The backward pressure of the urine stops the secretion of the urine, and with it seems to hinder or retard the metamorphosis of tissue, and consequently urea is not formed as in normal conditions. Charcot says that the small amount of urea and the absence of uræmia are due to the slowing or enfeeblement of denutrition; that it is like a fire covered with ashes: the processes of combustion are checked. It reminds one of a condition of hibernation. What urea is formed can be gotten rid of by vomiting, by the saliva, the skin, and the intestine; on the skin the urea sometimes forms large, white scales, like frost.

The length of time a person can live without passing water seems surprising; periods of eight, ten, and twelve days being not uncommon. Roberts says the duration of life in complete obstructive suppression appears to range from nine to eleven days, and that the passage of a few ounces of dilute urine does not seem to extend the time of survivorship beyond a few hours. In Fowler's list of ninety-three cases are five of eleven days, six of thirteen, three of fifteen, three of twenty-one, two of twenty-five, two of twenty-eight, one (measles) of fifty-one, and one of sixty days, cause not known. In my list are three of eleven days, two of twelve, one of thirteen, one each of sixteen, eighteen, nineteen, twenty-three and thirty-five days. Out of one hundred and twenty-five cases collected, seven were hysterical, leaving one hundred and eighteen. Of these ninety died and twenty-eight recovered; or, 76% died and 24% recovered.

With regard to treatment very little of value can be said. Hot baths are generally used and are often of benefit, but in certain cases seem to do more harm than good. Schwenger says, from experience in one instance, the turgescence of the skin and removal of water after hot baths and pilocarpin caused hyperæmia of the periphery and anæmia of the internal organs and increased concentration of the urea. His patient, who was in very good condition on the eighth day of anuria, was thus treated, and the bath was immediately followed by coma, and death on the following day. My patient felt very faint in a bath even when she was well enough to walk. Pilocarpin seems to be of but little value, hot cloths and packings being better.

Blood-letting has been tried, but in one of my cases it was followed by coma and had to be stopped.

If the vomiting is a means of eliminating the urea, if it is checked by medicine the urea must find some other channel of exit. In a case reported by Aufrecht, morphine was given to stop the vomiting in a boy with anuria after diphtheria, and with no bad effect. Sedgewick says opium can be given in these cases of suppression, as all processes of metamorphosis are in abeyance. Ice, lime water, and soda water are generally necessary for the thirst and dry mouth.

With regard to the bowels it is probably useful to have several watery stools occasionally, but very active purgation might bring about a state of collapse. Diuretics seem to me to be entirely useless and often might be harmful. The way to increase the secreting pressure through the kidneys is through the heart or circulation. Such patients often feel faint, and a little stimulant helps this and increases the heart's action. Relequet recommends elastic bandages to the lower extremities, to raise the pressure in the kidneys. Thornton recommends for suppression after operations an ice-bag to the head. In one case he had success from packing the arms in cold, wet towels when the urine was nearly suppressed after ovariotomy. Injections of very hot water should be tried for their relaxing effect on any spasmodic condition.

In regard to all the ways of exciting the different secretions for the purpose of removing the urea, the remarks of Debove et Dreyfous, who made very careful analyses of the blood and secretions in a case of anuria, are worth considering. "We think that in exciting the different secretions we cause the elimination of a considerable quantity of water and of a relatively very small quantity of urea, and the urea in the blood becomes thus more concentrated. If the loss of fluids thus artificially produced brings about the absorption of dropsical effusions rich in urea, as is often seen in nephritis, the increase of the urea in the blood might lead to transitory uræmia." Bartels reports such a result thus produced, and in some of my cases it is presumable that the treatment was harmful in this way. If, then, a patient can live comfortably for a week or ten days without passing urine, let us not be too urgent to do something which may do more harm than good.

Of course various manipulations and changes of position should be tried for the purpose of removing the obstacle. Simpson is reported to have stood a man on his head, with the result of dislodging a calculus in his water and thus allowed the urine to flow by.

The autopsy in my patient showed that no operation would have been possible, and this must be the case in nearly all instances of obstruction from cancer. In the case of Dr. Doe, where bands from an old peritonitis were constricting the ureters, an operation might be possible if the nature of the case could be known beforehand. Where there are calculi in the uterers it is advisable to wait and see if they will not be voided spontaneously. An operation would be very difficult, for there is generally little hydronephrosis, and so there is no fluctuating tumor to cut down upon and the ureter is difficult to reach. Where the calculi are impacted near the bladder, Morris recommends dilation of the female urethra, or urethrotomy in front of the prostate in the male, and then to pass the finger into the bladder until it feels the calculus. The tissue between calculus and finger is to be cut with a gum-shaped lancet and the calculus to be removed with a curette.

Can such patients be anæsthetized? We have very few data to guide us, but chloroform has been given in a few cases of anuria without harm. It is in cases where the kidneys themselves are seriously diseased that anæsthesia, particularly from ether, is so injurious.

A CASE OF TRAUMATIC DISEASE OF SPINAL CORD.[1]

(LATERAL AND POSTERIOR SCLEROSIS.)

BY J. P. MAYNARD, M.D., DEDHAM, MASS.

The patient was one of the surviving victims of the "Bussey Bridge" disaster. When the car in which she was seated fell through the bridge, she was thrown some distance into the middle of the aisle, striking on her back and head.

She was rendered unconscious for a short time; when she recovered, found herself surrounded with the debris of car-seats. She was lifted by two men through a car window and helped up the embankment on to the railroad track; walked with some pain and difficulty to the Forest Hill station and was brought home in the cars to Dedham.

The history of the bodily and mental condition of the patient prior to the injury is: a woman of unusually fine physique, with a vigorous constitution, and always in perfect health during her life of thirty-nine years; of a calm and unemotional temperament, combined with great will-power and energy of character.

Was called March 19, 1887, five days after the accident. She had received a blow on the right side of the head in front, and one on the left of the occiput. The most serious injury was on the spine in the lumbar region, causing a swelling some four to five inches in diameter, of an oval shape, red, and tender to touch. There was also a smaller one at the junction of the last cervical and first dorsal vertebræ.

Notwithstanding the painful character of these injuries she felt obliged for five consecutive days to ride to her place of business (where she held the responsible position of cashier), and only when the pain and numbness became each day greater, being at last unable longer to walk or even stand, was she willing to submit to remaining in bed.

The pain in the lumbar and cervical regions, which in the latter extended from the spine around towards the right of the body on a line with the ensiform cartilage, daily increased, as well as the heat and tenderness of the swellings at the points of injury. She could not lie with any comfort except on the back, slightly inclined to the right side. Was unable to turn wholly on to the right side for nearly three months, and has not been able to do so on the *left* side to the present time.

Slight paresis of the left hand developed from the first week, together with great weakness of the legs; they are both moved about the bed slowly and with some difficulty. The inability to move certain muscles gradually increased.

During the first four or five months the tendon reflexes were increased. The knee-jerks were exaggerated. The plantar reflex, on tickling the soles of the feet, met with abnormal response. The myotatic irritability being somewhat greater on the left side than on the right. With the exception of a persistent headache there has been at no time any brain symptoms. The pupils respond readily to light. No nystagmus. No spasm of any muscles or rigidity of them. No tremors. Sense of hearing, taste, and smell are perfect. Great weakness of the legs and fatigue of muscles on exercise, with aching pain in the lumbar extending to the sacral region, and defect of co-ordination, are the dominant symptoms at this period.

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[1] Read before the Norfolk District Medical Society, Dec. 18, 1888.

August, 1887. Five months after the injury the ataxia as well as the paralysis have become more palpable. She can now take but a few steps at a time and with uncertain gait. With great resolution, and in the hope of regaining her muscular strength, she persistently continued her efforts of daily walking, until, finding it invariably increased the pain in the lumbar and sacral region, she then consented to remain more quiet in a recumbent position.

October, 1887. After two months of partial rest, the pain having somewhat diminished, in resuming her attempts to walk, the paralysis and inco-ordination became more marked, especially of the left arm. With the eyes shut, she cannot now touch her nose with the forefinger of the left hand, but can do so perfectly with the right one. There was now a peculiar manner in her rising from the couch. A slow working of her limbs on to the floor into a partially sitting position, then being unable to raise herself on to her feet without first placing her hands on the knees and slowly by their aid pushing herself into a standing posture, at the same time with the legs wide apart, and the feet pointed strongly outward, in order to keep her balance.

Walking with a straddling gait, her progress is made by alternately rolling, or leaning the body from side to side in order to advance the feet, being unable to flex the muscles of the legs sufficiently to raise the feet more than an inch or two from the floor. She cannot turn around quickly without losing her balance, especially if the eyes are closed.

March, 1888. After the lapse of a year there is a slight lateral curvature of the spine toward the left, possibly owing to atrophy of the intervertebral cartilages at the point of injury. Pressure on the head produces pain in that locality. There is now some paresis of the right hand as well as of the left. The numbness in the legs has also increased. In a sitting posture she cannot put her left foot over the right, and a few weeks later she could not put the right one over the left.

May, 1888. The knee-jerks, which were somewhat exaggerated nine months ago, have gradually decreased. Reflex action from tickling the sole of the feet now meets with but faint response. Constipation has existed for over a year. Menstruation perfectly normal.

July, 1888. More impairment of sensation below the knees and parts of the thighs. The knee-jerks are now rapidly disappearing, especially in the left leg. Paralysis of extensors, flexors, and adductors of thighs and legs is more complete. Supporting herself by both hands on a table, cannot raise herself on tiptoe. Resting the hands on the back of a chair, cannot flex either leg sufficiently to lift the foot on to the round of the chair, the height of five inches.

The areas of anæsthesia are extending, palpably on the front, outer and inner part of thigh and outer side of left leg.

August, 1888. Knee-jerk in left leg is now apparently totally abolished; at a later period it failed to be elicited even by Jendrassik's method, and is scarcely perceptible in the right leg. Muscular sensation to weight is impaired in both limbs. Sense of posture of the feet is now entirely lost. Temperature of both legs below the knees one year ago was above normal, but has since gradually decreased and is now much below it. There is slight atrophy of the muscles of legs. Last year the circumference of each was twelve inches, now the right measures eleven and a half, and the left ten and a half inches.

September, 1888. She is unable to bend the spine without pain, except to a limited extent; for many months it has been impossible for her to stoop sufficiently to put on her shoes, and is obliged to have an assistant to dress herself.

October, 1888. There is now an entire loss of sensation in the left leg below the knee to the sole of the foot, even to a powerful current from a galvanic battery. There is no contractility of the muscles in that region to either the continuous or the interrupted current.

The disease is plainly indicated as existing, at its *upper* limit, near the junction of the last cervical and first dorsal vertebræ, as the paresis of the left hand is confined to the intrinsic muscles and sensation impaired only at the tips of the fingers. The *lower* limit evidently extends from the vicinity of the first and second lumbar to near the second sacral vertebræ, as all the muscles supplied by the nerves from the spinal cord and cauda equina between these areas are paralyzed and their sensation impaired.

In the above brief notes are condensed all the important and well-marked symptoms that have occurred in the progress of this case. They seem to indicate conclusively that there was developed, primarily, a focal myelitis at the seat of injuries; followed by a secondary degeneration of the spinal columns, known as lateral and posterior sclerosis, and so graphically described by Gowers as ataxic paraplegia.

REPORT ON MEDICAL CHEMISTRY.

BY WILLIAM B. HILLS, M.D.

URINARY PIGMENTS.

M. Grimbert, in a communication presented to the Société de Pharmacie de Paris,[1] describes a new process for the recognition of urobilin in urine. This consists in heating the urine, mixed with an equal volume of hydrochloric acid, just to the boiling point. The mixture is allowed to become cold, and is then shaken with ether, which becomes colored reddish-brown and presents a beautiful green fluorescence. The ether solution, examined spectroscopically, shows the characteristic absorption-band of urobilin, situated between the lines *b* and F.

According to W. Michailoff,[2] the method of Senator, as modified by Salkowski, is the best for the detection and approximate determination of indican in the urine in the form of indigotin; but if the urine is too dark, it must be decolorized by the careful addition of basic lead acetate in order to remove urobilin. Another disadvantage of this method is the great care which must be taken in the addition of calcium hypochlorite solution or of bromine water. The author recommends the following method for the complete elimination of urobilin and its chromogen: The acidified urine is saturated with finely powdered ammonium sulphate and repeatedly extracted with ethyl acetate. The aqueous liquid is then mixed with an equal volume of fuming hydrochloric acid, chloroform is added, and the oxidation performed with a very weak aqueous solution of bromine. In this way an extract is obtained containing indigotin compounds only and free from urobilin. No superoxidation can take place as in the case of the method recommended by Senator and Salkowski, and by the simultaneous oxidation and extraction with chloroform, the indigotin compounds are almost completely extracted.

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[1] Journal de Pharmacie et de Chimie, July, 1888, page 86.

[2] Journal of the Chemical Society, London, August, 1888, page 880.

In the study of urinary pigments it is necessary, according to MacMunn,[3] to pay attention to certain feeble bands in the red half of the spectrum which have been overlooked by many previous observers. The following reagents, ammonia, ammonio-zinc chloride, zinc chloride alone, and aqueous soda, cause characteristic changes in urinary pigments. From a study of these changes the following conclusions are drawn: 1. Two entirely distinct substances have been included by physiologists under the name urobilin, namely, that of normal and that of pathological urine. 2. Hydrobilirubin is not identical with either. 3. Normal urobilin is identical with a pigment produced by the action of peroxide of hydrogen on acid hæmatin, and subsequent brief reduction with sodium amalgam; pathological urobilin cannot as yet be traced definitely to its source, but is very closely related to normal urobilin. 4. Hydrobilirubin and human stercobilin are not identical; but in the cat the pigment of the fæces appears to be hydrobilirubin. 5. Stercobilin and pathological urobilin appear to be closely connected; both are probably derived from hæmatin, and not directly from biliary pigments. 6. Urohæmatoporphyrin (called by le Nobel isohæmatoporphyrin) is beyond a doubt a reduction product of hæmatin, and the urobilinoidin of le Nobel is its chromogen. The latter is sometimes present in pathological urine. The former has been found in the urine of patients suffering from rheumatism, pericarditis, Addison's disease, cirrhosis of the liver, croupous pneumonia, Hodgkin's disease, measles, typhoid fever, and meningitis. The band at F in the spectrum of this substance is not removed by ammonia; in this it resembles stercobilin, but differs from urobilin and from hydrobilirubin.

SPONTANEOUS DECOMPOSITION OF BILIRUBIN.

Salkowski[4] has twice observed the complete disappearance of bilirubin from jaundice urines which had been set aside till they had undergone the alkaline fermentation. The author has sought to separate either the coloring-matter itself or the products of its decomposition, but has succeeded in isolating only an amorphous dark-colored product. The decomposition of the bilirubin is apparently the result of the action of bacteria, and may explain those cases of jaundice, occasionally observed, in which the urine fails to respond to the tests for bile pigments, although containing dark-colored products, which are evidently derivatives of the bile pigments.

ALKAPTON.

Attention has already been directed in the pages of this Journal to the occasional presence in the urine of a peculiar reducing substance, which reacts chemically in some respects like grape sugar, and which may therefore in rare instances be mistaken for the latter.[5] This substance was first observed by Boedecker and was called by him alkapton. The so-called alkapton was believed by Ebstein and Müller to be identical with pyrocatechin, and by Dr. Smith with protocatechuic acid. Dr. Kirk[6] isolated a reducing substance from urine, and by a careful comparison of its reactions with those of pyrocatechin and protocatechuic acid, found that it differs from both these compounds, and proposed for it the name urrhodonic acid. Further investigation by Kirk[7] has shown that a mixture of two substances is in reality present, one which is precipitable by neutral lead acetate, and one which is not. The former is called *uroleucic acid*. This is soluble in water, alcohol, and ether; it crystallizes from ether in stellate groups. It has a strongly acid reaction, reduces Fehling's solution and Löwe's bismuth solution. The crystals melt at 133.3°, and have the formula ($C_9H_{10}O_5$). A solution gives with ferric chloride (1 in 40) a transient green color; a drop of the ferric chloride solution added to the crystals produces a red color.

The substance which is not precipitated by lead acetate is amorphous and has an acid reaction. It exercises the same general reducing reactions, but these are not so keen, and in fact it corresponds in all its properties with Boedeker's alkapton. It is provisionally termed uroxanthic acid.

CARBONIC OXIDE.

According to Grehant[8] analysis of the gases obtained from the blood is of great value in supposed cases of fatal poisoning by carbonic oxide. The blood absorbs carbonic oxide from an atmosphere containing 0.02 per cent. of the gas. If the atmosphere contains 0.1 per cent. of carbonic oxide, one half the hæmoglobin in the blood will combine with the gas. One hundred cubic centimetres of the blood of a dog which had breathed for one hour an atmosphere containing 0.1 per cent. of carbonic oxide gave the following results: —

	Normal blood.	Poisoned blood
Carbonic anhydride	47.0 c.c.	50.0 c c.
Oxygen	27.0 "	14.2 "
Nitrogen	1.5 "	1.5 "

On treating the poisoned blood with acetic acid at 100°, 14.4 c.c. of carbonic oxide, which had been combined with hæmoglobin, was obtained.

Salkowski[9] suggests the following modification of Hoppe-Seyler's soda test for carbonic-oxide hæmoglobin. The blood is diluted with twenty volumes of distilled water, and to some of it in a test-tube an equal volume of aqueous soda (sp. gr. 1.34) is added. In a few seconds blood containing carbonic oxide becomes whitish, then red; on standing red flocculi separate and finally rise to the surface, of a faintly rose-colored liquid. Normal blood treated in this manner assumes a dirty brown coloration. After standing twenty hours, the precipitate in both cases is redissolved, and the clear red liquid shows almost the same absorption bands as those of oxyhæmoglobin.

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[3] Journal of the Chemical Society, London, June, 1888, page 614, from Proc. Physiol. Soc., 1888, page 5

[4] Journal de Pharmacie et de Chimie, 1888, page 510, from Zeits f. phys. Chemie, xli. page 227.

[5] Editorial, February 10, 1887, page 143

[6] British Medical Journal, 2, 1886, page 1017.

[7] Journal of the Chemical Society, London, October, 1888, page 1121, from British Medical Journal, 2, 1888, page 232.

[8] Comptes Rendus, 1888, 106, page 290.

[9] Journal of the Chemical Society, London, May, 1888, page 540, from Zeitschrift für phys Chemie, 12, 227.

Dr. K. Katayama[10] describes a new test for carbonic-oxide hæmoglobin, which consists in the addition to the blood of yellow sulphide of ammonium and acetic acid. Blood containing carbonic oxide assumes a beautiful rose-red color, with formation of fine flocculi, while normal blood, on the addition of these reagents, assumes a greenish-gray color, with or without a reddish tinge. After twenty-four hours the flocculi subside as faint-red or greenish-gray masses, while the supernatant fluid has in the case of blood containing carbonic oxide a red, in the case of normal blood, a dirty dark-green color. If the blood has stood a long time, it should be gently agitated before applying the test, that the globules may be uniformly distributed.

The liquids from which the sulphur has been separated by deposition and filtration, examined spectroscopically, furnish both in the case of normal and carbonic-oxide blood a double spectrum. In the case of normal blood, the spectrum is that of sulphur methæmoglobin and reduced hæmoglobin. In the case of carbonic-oxide there are three bands: one between C and D, due to sulphur methæmoglobin, and two between D and E, due to carbonic-oxide hæmoglobin.

The author describes four methods for the performance of the test. The following give the best results: One c.c. of the blood is diluted with 50 c.c. distilled water. Ten c.c. of this liquid is placed in a test-tube, and to it is added first 0.2 c.c. yellow ammonium sulphide, and then 0.2–0.3 c.c. dilute acetic acid (just sufficient to impart a weak acid reaction). The contents of the tube are then gently mixed. Or, five drops of blood are dropped into a tube containing 10 to 15 c.c. of distilled water, the mixture gently shaken, and then five drops ammonium sulphide and seven to ten drops of acetic acid added. Violent agitation of the mixture is to be avoided, for agitation perceptibly influences the color reactions, especially in those cases in which the blood contains but a minute amount of carbonic oxide.

This test is stated to be more delicate than Hoppe-Seyler's, giving very satisfactory results in cases in which one part of blood containing carbonic oxide is mixed with five parts of normal blood, and in some cases a fair result under a dilution of one to seven.

DETECTION OF BLOOD-STAINS.

Ferry de la Belone[11] recommends the following method: If the suspected stain is on linen or other fabric, a few filaments are placed on the surface of a solution of sodium chloride (1 : 1000), in a small glass tube; after some hours the liquid assumes a brownish-rose tint. If spectroscopic examination of the liquid in the tube indicates the presence of hæmoglobin, it is important to search for blood corpuscles. A drop or two of a concentrated solution of chloral is added to the liquid, when a rose-colored precipitate, which soon settles to the bottom of the tube, is formed. The supernatant liquid is removed by means of a pipette, and a drop of the precipitate spread out on a glass slide, and gently warmed by passing the slide several times back and forth over the flame of a lamp. A reddish coagulum is formed, and a clear liquid which is removed with filter paper. The coagulum is stained with fuchsin, washed, and to it is then added a drop of dilute acetic acid. The preparation becomes immediately colorless, and the globules, colored bright-red, may be recognized under the microscope.

When the stain is found on instruments, wood, or stone, the powder obtained by scraping is placed in a small bag made of fine cambric and suspended in the salt solution. When mixed with earth, the separation of the globules is more difficult; the clay usually present causing a rapid precipitation in the salt solution. In this case an attempt should be made to separate, under the microscope, particles resembling, in color, blood. Particles thus separated are then placed in a bag as before, and suspended in the salt solution.

To obtain hæmin crystals one or more drops of the brown-rose solution are taken, before treatment with chloral, and carefully evaporated to dryness on a glass slide and warmed in the usual manner after the addition of a drop of glacial acetic acid.

According to Linossier,[12] it is not the absorption-bands of oxyhæmoglobin which give the most sensitive spectroscopic reaction, but those of reduced hæmatin (the hæmochromogen of Hoppe-Seyler). The author recommends the following method for the spectroscopic examination of blood: — The blood-stain is dissolved in water with the usual precautions and examined for the spectrum of oxyhæmoglobin. A drop of a freshly prepared solution of sodium hyposulphite is then added; the spectrum of reduced hæmoglobin instantly appears. Finally, one or two drops of a concentrated solution of soda are added; the hæmoglobin is thus decomposed into globulin and reduced hæmatin, the spectrum of which consists of two bands. The more intense band, situated at an equal distance between the lines D and E, is the only one which can be distinctly observed when the solution of blood is very dilute. A slight elevation of temperature favors the appearance of this spectrum, which, if the solution is very dilute, may only manifest itself after the liquid has been completely cooled.

The last experiment gives positive results only when the solution of blood is extremely dilute, and it is advisable, therefore, to make sure that the spectrum observed is really that of hæmatin. This can be done by the following tests: — The band ought to disappear if the liquid is heated to 50° without agitating, and reappear on cooling. The band ought to disappear when the solution is agitated in the air, and reappear when a drop of sodium hyposulphite is added. If the coloring matter has been radically changed by putrefaction, the spectroscopic reaction of reduced hæmatin may be the only test by which the presence of blood can be proved. In some cases the coloring matter has become insoluble in water; the stain is then dissolved in tolerably strong ammonia, and the oxyhæmatin is best reduced by one or two drops of a solution of ferrous sulphate and tartaric acid. The spectrum of such a solution shows clearly the first band (between D and E) of the reduced hæmatin.

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[10] Virchow's Archiv, 114, pages 53-64.

[11] Journal de Pharmacie et de Chimie, March, 1888, page 253, from Rép. de Pharm.

[12] Journal of the Chemical Society, London, October, 1888, page 1139, from Bulletin de la Société Chimique de Paris, 49, page 691.

By this method of spectroscopic examination, blood can often be detected in cases where crystals of hæmin cannot be obtained.

ATROPINE AND HYOSCYAMINE.

Recent investigations have shown :[13] — 1. That in good belladonna-root there is absolutely no atropine; only hyoscyamine. 2. That from this root there can be obtained, according to the method of treatment, hyoscyamine, atropine, or a mixture of the two. 3. That pure hyoscyamine is very easily converted into heavy atropine which is simply a transformation product of the hyoscyamine which pre-exists in the root. It is further stated that the seeds of *Hyoscyamus niger* (henbane) furnish either hyoscyamine or atropine, according to the method of treatment.

W. Will[14] has endeavored to determine the conditions under which this transformation takes place. His investigations show that hyoscyamine is readily transformed into atropine if heated to its melting point. Also, if a drop of an alcoholic soda solution is added to a solution of one gram hyoscyamine in six grams alcohol, the hyoscyamine is entirely converted into atropine at the end of two hours, even at the ordinary temperature. In the operation of extracting hyoscyamine from belladonna-root, the alkaloid is set free by an alkali and submitted to a certain increase of temperature. These are the conditions, in Will's opinion, which determine the transformation of hyoscyamine into atropine.

This transformation under the influence of a temperature of 115° to 120° maintained for six hours has been noticed by E. Schmidt.[16]

STRYCHNINE-LIKE PTOMAINES.

According to C. Anthor [16] the following are the chief differences between a strychnine-like alkaloid, twice obtained from parts of a corpse eight days old, and strychnine itself: — (1) It is less poisonous than strychnine when injected subcutaneously in the frog; (2) from alkaline solutions ether dissolves but a very small quantity, whereas amyl alcohol dissolves it easily; (3) the taste is less bitter; (4) the precipitates with potassium ferrocyanide and ferricyanide, potassium chromate, and picric acid are amorphous, those of strychnine crystalline; (5) the blue color with potassium chromate and sulphuric acid is less persistent and less pure than the color formed with strychnine.

POISONING BY ANILINE.

Dr. Karl Dehio [17] reports the following case: — A young woman, recently delivered, swallowed about ten grams of aniline oil. Symptoms of poisoning were quickly manifested. These comprised cyanosis, acceleration of the pulse, dilation of the pupils, and vomiting. The odor of aniline was very pronounced in the breath. During the first twenty-four hours symptoms, which were the result of the immediate effects of the poison on the central nervous system, were manifested, namely: coma, absence of cutaneous reflexes and voluntary motion, rapid pulse (132), increased respiration (25), diminution of temperature, and profuse perspiration; the latter occurring thirty hours after the ingestion of the poison. On the second and third days there was marked improvement, the change in the pulse alone persisting. Some hours after the ingestion of the poison, the skin assumed a grayish-blue coloration, which did not disappear under pressure. This blue coloration was not due, in Prof. Dehio's opinion, to cyanosis, but to the presence in the blood and tissues of colored oxidation-products derived from aniline. Twenty-one hours after the ingestion the urine contained traces of biliary coloring matters, and the serum was yellowish-red; from the second to the fifth day the urine contained an increasing quantity of biliary pigment. On the third day jaundice appeared, increasing till the fifth day, and disappearing on the ninth; on the sixth day the bilirubin disappeared from the urine. The urine was still colored, however, but this was due to hæmoglobinuria, which disappeared on the tenth day, after which the urine was normal in color.

The destruction of the blood-globules was rapid and formidable: they fell in number to 2,700,000 per c.cm. on the seventh, and 1,400,000 on the eleventh day. They were replaced slowly; for on the eighteenth day their number was less than normal by one-third. Convalescence commenced with the disappearance of hæmoglobinuria. There was evidently a connection between the jaundice and hæmoglobinuria; for notwithstanding the presence of bilirubin, the urine contained no biliary acids. Aniline may be classed with those poisons which produce simultaneously icterus and hæmoglobinuria.

DETECTION OF ALKALOIDS AFTER DEATH.

Dr. Pellacani in a recent number of *Rivista Sperimentale di Freniatria e di Medicina Legale* gives an account of some experiments which he has made for the purpose of determining how long various poisonous substances resist putrefaction.[18] The following was the method adopted: — A fixed quantity of the poison having been introduced into a definite quantity of blood, the mixture was allowed to putrefy under favorable conditions of temperature. From time to time it was tested for the poison, the same method being carefully employed in each case. Physiological tests were used in the case of such poisons as atropine, physostigmine, curarine, etc., and in other cases methods giving characteristic reactions were employed. The alkaloids were introduced in a free state in the following proportions relatively to the blood: — 0.10 in the case of physostigmine, atropine, pilocarpine, daturine, and digitalin, and 0.50 in the case of all other substances.

The author found that no trace of digitalin or santonin could be found in the putrid blood after four months, while atropine, daturine, and physostigmine took thirteen months to disappear; at the end of that time there was still a trace of codeine. Morphine and picrotoxin gave signs of their presence after twenty-seven months; aconitine and cicutine were still present in considerable quantities after thirty-four months, and veratrine was found at the end of thirty-nine months. Curarine remained unaltered for twenty-eight months; but after thirty-nine months the physiological test gave a negative result, although the characteristic reaction still persisted, except with the sulphuric acid test. Dr. Pellacani considers that these experiments prove that putrefaction is not so rapidly destructive of vegetable poisons as has hitherto been believed. This is particularly the case with alkaloids.

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[13] Chemisches Centralblatt, 1888, page 928; Mitt. d Chemischen Fabrik auf Aktien (E. Schering).

[14] Journal de Pharmacie et de Chimie, July, 1888, page 58.

[15] Chemisches Centralblatt, 1888, pages 928 and 1272.

[16] Journal of the Chemical Society, London, July, 1888, page 731, from Chemisches Centralblatt, 1888, 43.

[17] Journal de Pharmacie et de Chimie, September, 1888, page 267, from Ann d'Hyg., August, 1888.

[18] American Journal of Pharmacy, November, 1888, page 569, from British Medical Journal, July 21, 1888, page 152.

PHYSIOLOGICAL ACTION OF ARTIFICIAL DYES.

The following conclusions of Th. Weyl[19] are based upon experiments made on dogs. Naphthol-green β has no injurious effect when administered in a single dose of four grams, or in daily doses of one to two grams for fourteen days. Dinitrocresol is poisonous.[20] Martius'-yellow (dinitro-α-naphthol), which is borne well by rabbits,[21] is fatal to dogs of medium size, even in small doses. Naphthol-yellow δ, a sulpho-acid of Martius'-yellow, is uninjurious, even in doses four times as large as fatal doses of Martius'-yellow. Picric acid, and aurantia are poisonous. Three samples of commercial safranine proved fatal to dogs weighing five to six kilos, when administered in three subcutaneous doses of 0.5 grams of the hydrochloride.

TOXIC ACTION OF ALCOHOLS AND ARTIFICIAL BOUQUETS.

The following are the chief results of experiments made by Laborde and Magnan[22] on dogs: Ethyl alcohol from all sources has the same physiological action. Furfuraldehyde, which occurs with pyridine and other impurities in commercial alcohols, has strong toxic properties. Salicaldehyde, which is added to "vermuth," "bitter," and "essence de renie de pres," produces strong epileptic convulsions. Methyl salicylate, which is used as a substitute for oil of wintergreen in "vermuth" and "bitter," also produces convulsions, though not of an epileptic form. Benzonitrile and benzaldehyde, which are added in small quantities to "noyau," produce tetanus and even death.

NICKEL.

Riche[23] has continued the investigations to which attention was called in the last Report on Chemistry.[24] He finds from a large number of experiments that nickel is dissolved very slowly and only in minute amount by such liquids as are used as foods; and concludes that, considering the large doses which may be administered to animals over a long period without producing any trouble, metallic nickel may be safely used for the preparation of utensils for preparing and holding articles of food and neutral or alkaline pharmaceutical preparations.

ACTION OF CHROMIUM.

Kobert[25] has compared the toxic action of chromic acid and the salts of chromium sesquioxide. The salt of the latter oxide employed was the double lactate of sodium and chromium. For frogs the fatal dose of the chromates is eight times smaller; for warm-blooded animals a hundred times smaller than that of the double lactate. Chromium is eliminated quickly, and chiefly (72%) with the urine. According to the author, tincture of guaiacum is the best qualitative reagent for chromium, indicating its presence under a dilution of 1 : 80000.

ACTION OF CHLORATES.

According to Stockvis the chlorates have no specially toxic properties, sodium chlorate acting like sodium chloride and potassium chlorate showing only the toxic action of all potassium salts; methæmoglobin did not arise in the living blood but only in the dead blood after removal from a vein.

F. Marchand[26] points out that Stockvis only experimented on rabbits, the strong alkalinity of whose blood perhaps accounted for the slight action. When the blood of poisoned animals (dogs) was tested, the methæmoglobin bands were immediately recognizable. So that the author concludes that the living blood undergoes a pathological change. The more rapidly the chlorate is absorbed into the blood, the quicker its action. A quantity of chlorate which, when injected into a vein, in the course of seventy-three minutes produced scarcely any result, produced strong symptoms of poisoning when the period of injection was reduced to thirty minutes, and a fatal result when the time was further reduced to ten minutes. A similar quantity of chlorate when given by the stomach soon produced changes in the blood and secretion of blood-pigment in the urine. Rabbits and guinea-pigs on account of their sensitiveness to irritation of the digestive organs may succumb to gastritis induced by the corrosive action of the chlorate before absorption has taken place.

In Cahn's[27] experiments, chlorates did not cause the appearance of any methæmoglobin in the blood or urine of rabbits. Methæmoglobin readily appears, however, when chlorates are administered to dogs. During marked diuresis more than 3.5 per cent. of sugar was found in the urine.

SULPHOCYANIC ACID.

Bruylant[28] finds that this acid occurs not only in the saliva, but in a number of other animal fluids: namely, milk, bile, blood, and urine.

— A Wisconsin court has declared that one who professes an ability to cure disease by clairvoyance may do his best, but must be held to a strict accountability for the results of his eccentric ministrations, and that if injury ensued he becomes liable in damages for malpractice.

— The Eclectic Medical Society of the State of New York is fighting compulsory vaccination.

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[19] Berichte der deutschen chemischen Gesellschaft, 21, page 2191.

[20] Ibid, 21, page 512.

[21] Ibid, 20, page 2836.

[22] Journal of the Chemical Society, London, July, 1888, page 737, from Journal de Pharmacie et de Chimie, 1888, 16 pages, 448-454.

[23] Journal de Pharmacie et de Chimie, 1888, pages 604—609.

[24] Journal, April 19, 1888, page 393.

[25] Chemisches Centralblatt, 1888, page 1414.

[26] Journal of the Chemical Society, London, Sept., 1888, page 977: Abstract.

[27] Ibid.

[28] Journal de Pharmacie et de Chimie, August, 1688, pages 104 and 153.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR OBSTETRICS AND GYNÆCOLOGY.

Regular meeting, Wednesday, March 21, 1888, at 19 Boylston place.

Dr. J. W. Farlow reported a case of

SUPPRESSION OF URINE FOR TWELVE DAYS, WITH COMPRESSION OF BOTH URETERS.[1]

Dr. W. W. Gannett said: Mr. Chairman, apart from the genito-urinary apparatus there was nothing of any especial interest in the autopsy. The whole of the genito-urinary tract was taken out together, and it presented appearances which I will try to describe in connection with the diagrams.

The pelves of both kidneys were moderately enlarged; they were perhaps the size of lemons. When a section was made through the kidneys it was found that the calices were somewhat dilated and the pyramids somewhat flattened as one finds in connection with pressure from the urine retained in the pelvis. So far as the kidneys themselves were concerned, they were pale and of somewhat increased density, the capsules somewhat adherent, showing evidence of very slight degree of chronic interstitial nephritis, with anæmia. There was nothing especial about the mucous membrane of pelvis of either kidney. The ureters on both sides were dilated to about the size of the end of the little finger. On following out the ureters it was found that they were of this large size, *i.e.*, nearly the size of the tip of the little finger, — to a point which corresponded to the cervix uteri, and the line of junction of the vagina with the cervix. At this point there was a very marked constriction in both ureters. Pressing into the lumen of the ureter from behind, was a body about the size of a dried pea, that formed a part of the tissue that surrounded the ureter, and the wall of the ureter was pressed in toward the opposite side. Below this point the ureter was of the normal size for the remaining two, or two and a half inches to the orifice at the bladder. Through this constriction a fine steel knitting-needle could be passed; but nothing larger than this.

The other ureter presented precisely the same appearances. There was a narrowing, with a similar projecting nodule about the size of a dried pea, with almost precisely the same sized orifice. Below this the ureter was of the normal size to the bladder. In looking at Douglas's fossa, at the lower portion was a rough granular appearance, the granules varying from the size of the head of a pin to a millet seed, but opaque, gray, and very tough, not representing tubercles, nor was there any appearance of ulcer which would suggest a tubercular process. On cutting into this, it was found to consist of gray, dense tissue, suggesting fibrous tissue. When a section was made it was found that the tissues about the uterus showed a radiating appearance, such as one gets in an ordinary cicatrix. This appearance was also found in the part corresponding to this mass.

The question arose whether this new growth which had compressed the ureters was the result of a fibrous tissue growth or a cancer. In the fresh state there were no appearances of cancer in the cervix. The specimen was examined in the fresh state, and it was found to be simply fibrous tissue. There were occasional spindle cells. The specimen was hardened, and sections have been made from various portions, — from the portions around both the ureters, and of the little nodules which projected into the ureters, and the tissue was found to be everywhere fibrous tissue, with a few spindle cells. But there were also quite a number of new blood-vessels, and also hæmatoidin crystals, so that the process is undoubtedly a chronic inflammatory one, and the question comes up: what is the cause of the inflammatory process? What suggested itself first to my mind was that there might have been a pelvic hæmatocele with an extension of the inflammation to the deeper parts; and in favor of this is the considerable blood pigment which is found in this tissue. Against this argument is the fact that there was no pigment found beneath the peritoneum; for in this process of pelvic hæmatocele one finds a new-formed membrane in most cases which indicates change into fibrous tissue, and the blood-pigment remains.

The other possibility is that there may have been an inflammation either in the cul-de-sac or cervix. This, it seems to me, is the more probable cause. It represents the result of an inflammatory process extending from some rent or injury in the cervix. This is mentioned only as a suggestion, however. The considerable amount of hæmatoidin suggests that there had been considerable hæmorrhage at some time in the past.

To sum up very briefly: Evidence of chronic interstitial process, existing for a long time, occurring in the tissues just beneath Douglas's fossa, *i.e.*, behind the cervix and in the neighborhood of the vagina extending across the uterus, and involving both ureters at a point two inches or more above their openings in the bladder, leading to compression of the ureter on both sides, and of such a shape that I think it is quite possible that these may have acted as valves. These little nodules were examined with care, with reference to their being new growth, but no evidence of any new growth, such as cancer, was found in them. They were made up simply of fibrous tissue with some granules of hæmatoidin.

With reference to certain curious cells which were found in the examination by Dr. Wood and Dr. Fitz, I found no source for them, and not knowing their shape cannot make any suggestion as to the possibility of their having come from the bladder as the result of maceration during the intervals when no urine was passed. I certainly found nothing about this tissue or about the ureter at that point which could account for the masses of cells which I understood were found in the urine of this case.

Dr. A. T. Cabot: I am sorry to have come in late, and heard only the end of Dr. Farlow's paper. I had the good fortune to see this case with him. It was an interesting case to me, because uncommon. I had not happened to run across so complete an anuria, lasting so long a time, and with apparently so little ill effect upon the patient as in this case. At the time I saw her first, she had been ten days, I think, without any urine, and I must say her good appearance, her condition, which to me was very remarkable with such complete anuria, made me suspect that it was only a hysterical case where the passage of urine was concealed by the patient; and with that in view we had the contents of the chamber vessel, which was said to be simple vomitus, thoroughly analysed, without finding any urea in it.

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[1] See page 330 of the Journal.

In regard to the anuria which sometimes follows operation, due to obstruction to the escape of urine, I have happened to see a number of such cases as that, where the obstruction had been in the urethra, and I had been a good deal interested in the measures which seemed to help such cases. I have found, I think. the best diuretic; I think the best means of meeting that condition is the ingestion of large quantities of water. I have not found anything that approached that in efficacy, and ordinarily that has been successful. Of course the first thing is to provide for the escape of urine, and so removing the exciting cause, and next to that I find the administration of large quantities of water the best measure.

In these very cases I think I have been able to trace a pretty serious aggravation of the symptom to etherization. I have not tried the use of chloroform in these cases. I should be rather inclined to do so in an operation upon a patient with a tendency to anuria. Certainly, after etherization I have seen a very great disability of the kidney with alarming symptoms. So far, I have seen these symptoms relieved by the administration of water and by counter-irritation over the kidneys. I have had tincture of iodine painted freely over the region of the kidneys, and mustard poultices, both with very good effects, in these cases. I am sorry that I did not hear the earlier part of the paper, because to me the explanation of these cases is entirely obscure. I cannot explain how the condition is brought about.

Dr. Fitz: I think we all ought to feel indebted to Dr. Farlow for the time he has spent upon this paper and for the admirable way in which the facts are presented, as well as for the result of his search of the literature. It seeems to me, considering what Dr. Gannett has said about the lesions found, that the relation between the obstruction and the suppression of urine is one which is somewhat remote. It is pretty evident, from the recurrence of the attacks, and the fact that abundant flow of urine would follow the suppression, that the cause of the suppression was not simply mechanical. It did not represent merely a dilatation. As the dilatation was comparatively small, it seems as if the effect of the obstruction to the flow of urine was rather to cause a cessation of the secretion of urine in the kidneys, through some diminution of the arterial supply, than a simple blocking of the outlet. What Dr. Farlow has already said as to the condition of the urine at the outset, rather leads me to think that there was a chronic interstitial nephritis present. It is to be regretted that we have no more detailed statement as to the histological condition of the kidneys. It seems to me it is possible there may have been an extensive disease of the kidneys involving the glomeruli; and not only did the composition of the urine suggest this condition, but certain of the symptoms in the case were somewhat suggestive of the existence of that disturbance in the kidney.

It seems to me, whatever uræmic symptoms resulted were, on the whole, slight, considering the degree of disturbance to the flow of urine. I remember one case which was under my care last summer, a case of diffuse nephritis with checked secretion, where at intervals, every few days or weeks, the patient would become comatose, would have convulsions, would remain two or three days in such a condition, and would then gradually recover strength, and the flow of urine would come back. That sort of thing went on for several months, but eventually the man went out of the hospital, and has since disappeared. In his case the uræmia was extreme, and yet his low secretion of urine would increase again. The other day I saw a man who had complete suppression of urine for four days. He was supposed to be well before this occurred, but there was evidence of cardiac hypertrophy. He had severe asthmatic symptoms, with contracted pupils, and almost stertorous breathing, and although no urine was obtained, it was supposed, in the absence of evidence of mechanical obstruction, that one had to do with a contracted kidney.

Dr. Farlow, in his statement of the treatment of these cases, speaks of blood-letting as not commending itself particularly, but Dr. F. C. Shattuck had a patient under his care last summer who, suffering from chronic interstitial nephritis, was comatose, but recovered consciousness after blood-letting, and was able to go from the hospital as well as usual. The case I saw was treated with pilocarpine, cathartics, and digitalis during all the attacks, and with the sweating by heat as well. In regard to the treatment it is perhaps a question of the individual case. The man who was bled was a strong, full-blooded person, whereas the person who had the repeated attacks was extremely pale and anæmic. Blood-letting might have answered in one case and not in the other.

Dr. E. S. Wood: This case has been one of remarkable interest to me, and it is very rare to have the urine in these cases of obstructive suppression for examination. Such cases are not at all common, except those where the obstruction is lower down below the bladder, as from urethral stricture or partial urethral stricture. This case seems to me remarkable, also, on account of the repeated attacks of anuria. Even the slight dilatation of the pelvis of the kidney and of the ureters seems to show that there must have been partial contraction of the ureters at that point for a very considerable portion of time, and that there must have been a certain amount of back pressure in order to produce even the slight amount of dilatation which was found there, and that that back pressure had lasted for a considerable length of time.

The condition which Dr. Gannett described reminded me of experiments which were performed on animals, by Aufrecht, I think, of partially tying the ureters, which brought on a condition of gradual dilatation of the pelvis of the kidney, and a more or less inflammatory process was set up in the kidney itself and hyaline casts were formed and passed in the urine.

As to the examination which I made, and which Dr. Farlow has already described, showing the large amount of cellular elements in the sediment: that sediment was also seen by Dr. Fitz, and, so far as my experience goes, it throws absolutely no light upon the cause. The major portion of the sediment consisted of cells like the vaginal epithelial cells, but, in addition to these, there was quite a large number of the onion-like groups of cells, which I have found, perhaps, in a dozen other cases, in the urine of both males and females, and for which I have never been able to find any cause. In addition to that, in this specimen there were several conical groups of cells, the external surface of which was covered with medium-sized or rather small cells containing large nuclei. Where these cones of cells came from it is impossible for me to say, unless possibly from some papilla, from which the epithelium had been macerated. At all events, they seem to have had no connection with the growth which caused the obstruction, but were present accidentally, from the maceration of cells from some portion of the vagina, bladder, or ducts. I would like to ask Dr. Farlow in regard to whether there was any accurate measurement of the quantity of urine after the attack of anuria.

Dr. Farlow: After the period of suppression of twelve days, the daily quantity was almost always two quarts and a half. It was an average of two quarts.

Dr. Wood: The query in regard to the few casts which were found is: whether the condition was a long-continued process, or more like a surgical kidney from obstruction. I would like to ask Dr. Fitz, in regard to these groups of cells, if he has any idea where they could have come from.

Dr. Fitz: The only idea that I have is that they must have come from the normal epidermal surface. It is not an uncommon thing to find, in making sections through the skin, especially where the papillæ are large, clusters of these "onion bodies," and their presence, therefore, is in no way characteristic of any malignant disease. The finger-like affairs evidently come from a papillary surface. It is possible that in this case there may have been some warty growth about the external genitals, the favorite seat for such conditions, and the cells might have become detached from such a surface. At all events, there was nothing about them to show just what part of the genital tract was their source, and they gave no clue in regard to the possible lesion.

Dr. Cabot: I would like to know whether these bodies were found in the first urine that was passed after the suppression.

Dr. Farlow: Some four or five days afterward. The urine had been quite copious for four or five days, and there was nothing in the urine preceding this at all, except a little albumen, and now and then a cast and a few epithelium cells. These came one day only, and they were followed by the same quantity of urine that had been passed before.

I would like to say that I am very glad to hear Dr. Cabot speak of water as a diuretic. It seems to me that when we have so much of the diuretic, it is well to give water, which certainly can do no harm. Dr. Fitz spoke of intestinal changes in the glomeruli. They were examined, and I saw several sections, and there was no change, or very slight interstitial change, about them. It seemed to me that it is not like an ordinary case of obstruction, in which the obstruction remains, completely blocking up the canal, because in those cases where the obstruction comes on slowly there is almost always more hydronephrosis, whereas in this case it seems like a sudden blocking up and a sudden turning into the ureter of this papilla.

In regard to blood-letting: those cases that have been reported are cases, not of obstructive anuria, but the other kinds. I have had no experience with blood-letting in these cases. In the cases in which it has been used it seems to me to have done harm. A number of cases have been followed by serious symptoms, and very few cases, it seems to me, have been followed by any benefit at all. There are theoretical reasons for doing it, and theoretical reasons for not doing it, but it seems to me, from looking at the cases, that I would not do it. I examined the patient pretty thoroughly, and found no warty growth about the vulva, but of course it might be overlooked.

Dr. Fitz: My remarks about the treatment applied rather to uræmia than to anuria.

Dr. Farlow: Pilocarpine seems to have been condemned by those who have tried it. It has been often tried, but does not seem to have had a good effect, certainly no better than other ones.

Dr. Cabot: I should like to say a word about the effect of opium, which I have seen in one or two cases, not exactly like this, but in contracted kidney. I have seen certainly two cases where the administration of opium in a patient secreting a normal quantity with low specific gravity seems to act to at once entirely check the secretion of urine. I remember one in particular. The quantity was not very much diminished at the time the opiate was given; the opiate was small, and given on account of the excessive pain, and from that time on the quantity of urine was to be counted by one or two ounces in twenty-four hours until the patient's death, ten days later. The other case was one where the ureters were obstructed by a fibroid packed into the pelvis, where the urine was diminished, but still sufficient, but where the administration of one-sixth of a grain of morphia absolutely stopped the urine until death.

And in other cases I have seen diminished urine; but no such complete stoppage as I saw in these cases. Looking in the text-books to articles on the subject, I find that some condemn the use of opium, and some extol. I should certainly be very chary about using it.

Dr. Wood: Roberts states that the use of opium or morphia is contraindicated.

Dr. Fitz: I remember seeing a case in consultation where, in consequence of sleeplessness, one-fourth of a grain or more had been given and the patient became comatose, and died the next day. It seemed as if the injection of the morphia caused the coma. It is fortunate that in many of the cases of extreme neuralgic pain or restlessness the recent remedies, like antipyrine or antifebrine on the one hand, and urethran on the other, will relieve pain and sleeplessness without the use of morphia. After such cases as have been reported it seems better to avoid the use, rather than to run the risk.

Dr. Farlow: In many cases that I looked up I found that it was given. There was considerable pain in most of the cases, and of course they depended upon opium. It was given, also, to check vomiting. Sometimes one-eighth to one-sixth of a grain was given. Of course, where there is complete anuria there can be no suppression follow the opium. No particular symptoms are reported as following its use. I quote Dr. Sedgwick, of the *British Medical Journal*, who says that opium can be given in these cases. Of course it is his own private opinion. It seems to me that in the cases where the kidney is not affected, there is quite a difference from the cases which Dr. Cabot has referred to and those Dr. Fitz has spoken of. It may be that is the reason why the morphine has not caused the trouble in all the cases. I think, however, there is yet a good deal to learn upon the subject.

UTERINE FIBROID.

Dr. Fanny Berlin showed a uterine fibroid that had been removed by laparotomy. She said: — This specimen was removed yesterday from a patient who came to the New England Hospital. She was sent in after an attack of suppression of urine, by a physician who thought it was due to the tumor. The account she gave was that in the last three years she had noticed a swelling which did not increase until a year ago; then it commenced to grow very rapidly. Since then it has not increased very much. She came to us saying that she was a poor girl, and that this incapacitated her for her usual work, and asked to be relieved. She was with us a month, and we decided, after consultation with Dr. Chadwick, to make an exploratory incision. The diagnosis seemed rather doubtful. I found that the tumor was mainly confined to the right side, reaching up very high in the right hypochondriac region, and then it had a very peculiar shape, diminishing in shape towards the left side; and *per vaginam* another large mass could be felt crowding the cervix towards the symphysis pubis, so that it could hardly be felt. We decided to make an exploratory incision, and, if possible, to remove it.

When I made the incision I found that it was a multiple fibroma of the uterus, very movable, and we decided to remove the mass. The incision had to be quite a large one, and the mass came out very easily from the right side. The other part from the pelvis had to be pushed up with the fingers introduced into the vagina. An elastic ligature was put round, and the whole mass clamped and cut off. The pedicle was treated by the extraperitoneal method with a clamp.

Dr. E. W. Cushing spoke of a case where he had used a rubber ligature outside, in place of a clamp. It had worked in a very satisfactory manner.

— A number of physicians of Carlisle, Pa., have been sued for malpractice in the performance of laparotomy for obstruction of the bowels. The patient died of the operation, and it is claimed by the plaintiff that an autopsy showed no obstruction to exist.

— Professor Donders, the noted ophthalmologist of Amsterdam, is dead.

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CONVENTION FOR THE REVISION OF THE PHARMACOPŒIA OF THE UNITED STATES.

It is suggested to the editors of journals of medicine and pharmacy throughout the United States of America, that they call attention in their editorial columns to the call for a General Convention to assemble in Washington, D.C., at noon of May 7th, 1890, for the purpose of providing for a revision and publication of the Pharmacopœia of the United States of America. Every incorporated medical or pharmacal college, association, or society desiring to be represented in the Convention ought to send its corporate title and a list of its officers to Robert Amory, M.D., President of the Convention of 1880, in the care of the assistant librarian of the Boston Medical Library, 19 Boylston Place, Boston, Mass., in order that there may be prepared for publication, as directed by the Convention of 1880, a list of the bodies to be represented.

MEDICINAL USES OF THYMOL.

Dr. Frederick Henry reports in the *Medical News* having used thymol with success in many cases of acute and chronic intestinal disorders, and in the diarrhœa of typhoid fever. Under the use of this medicament there is a fall in the temperature, a diminution in the number of the stools, absence of cerebral excitation, the tongue becomes moist and clean, etc.

The employment of thymol is based on its well-known antiseptic properties, and its action in the intestinal disorders above mentioned is dependent on its great insolubility, by reason of which it passes out of the stomach unchanged, and mingles with the contents of the intestines, where it neutralizes the toxic ptomaines which form in considerable quantities in the catarrhs of the gastro-intestinal canal. It is well known that many authorities believe that it is to absorption of these toxic products of fermentation and putrefaction that the typhoid symptoms are principally due.

Dr. Henry generally prescribes thymol under the form of pills made with castile soap. The ordinary dose is two or three grains every six hours; although this dose may with safety be increased, yet no better results, he thinks, are obtained with larger doses. In only one case he noted the appearance of digestive disturbances.

THE DIURETIC ACTION OF SALICYLIC ACID.

Huber in the *Gazette Hebdomadaire de Médécine* claims to have had clinical demonstration of the diuretic properties of salicylic acid. He has closely observed twenty-five cases of rheumatism and noted the quantitative augmentation of the urinary secretion after the administration of the acid. He found the quantity of urine to increase in the twenty-four hours from five hundred to seven hundred grammes. Similar results were noticed in cases of pleurisy.

The diuretic dose of salicylic acid was about ten grains every three hours till the quantity of forty-five grains per day was administered. The diuresis augments from the first day, and continues on the following days. Huber would not advise the employment of this remedy in typhoid fever and still less in the course of nephritis; in fact, he would restrict its use to cases of simple pleuritic effusion.

MEDICAL NOTES.

— The drawings for the new Royal Victoria Hospital, Montreal, Canada, have been received from London. The central, or main building, consists of four blocks, the front one, on either side of the entrance hall, being devoted to the nurses' apartments, and those of the lady superintendent and matron, together with the general offices. The block behind this consists of a building, the shape of a Latin cross, devoted to the clinical department, with a separate entrance for the students. Behind this again are two other blocks, containing three theatres and the mortuary, and at the rear of these, but perfectly isolated from them, is the ice house. The wing on the left hand, or western side, consists of three blocks, each four stories high, with, between them, small buildings containing the staircases, each ward communicating therewith by means of covered galleries. The accommodation to be provided is — surgical patients, about 90 beds; medical patients about 180; private paying patients, about 20; total, 290 beds. Infectious hospital, about 35; total, 348.

At the rear of the buildings is the infectious hospital, conducted upon the hut system. The whole building will cost about half a million dollars.

— The *Minneapolis Journal* says that in that city there is a project afoot to put up an office building on Nicollet avenue, between 7th and 8th, for the exclusive use of physicians. Chicago has such a building; New York has two. The building is to be eight stories, 100 feet front by 110 feet in depth. The front to be of iron and glass, and will cost $200,000. The first floor is designed for drug stores and dealers in physicians' and surgeons' supplies. Nothing definite at present has been done, but enough physicians have been consulted to insure the success of the plan.

— The *Sanitary Era* suggests a new and not unfair argument, which enlists sanitation as the ally of good breeding in some of the commoner requirements of social decency: —

"Politeness and proper deportment will be recognized as factors in the prevention of diseases. Children who are taught early to hold their hands or pocket handkerchiefs to their mouths when coughing, yawning, or sneezing, and to keep their mouths shut, are thus taught a simple hygienic preventive measure. Spitting on the floor allows the germs of pneumonia, consumption, and bronchial catarrh to be inhaled by others, and it is very proper that common politeness should prevent such an indirect form of assault and battery."

NEW YORK.

— The distributing committee of the Hospital Saturday and Sunday Association met March 26th at the mayor's office for the purpose of disbursing the funds raised by the annual hospital collection. Mr. F. F. Cook, the general agent of the association, announced that the collection amounted to $52,033.40, as against $50,449.15 last year. Of this amount $5,502.75 was designated, and $46,530.65 undesignated. Reserving $2,530.65 to cover part of the expenses of last year, as well as the expenses of the current year, there remained $44,000 of the general fund, and this was distributed to the twenty-three institutions entitled to a share, in accordance with the amount of free work done by each. The twelve hospitals securing over $1,000 each were as follows: Mount Sinai, $7,365; St. Luke's, $6,541; German Hospital, $4,807; Hospital for Ruptured and Crippled, $4,500; St. Mary's Free Hospital for Children, $2,246; Home for Incurables, $2,198; House of Rest for Consumptives, $1,710; House of the Holy Comforter, $1,512; Colored Home, $1,471; Montefiore Home for Chronic Invalids, $1,286; Skin and Cancer Hospital, $1,125; Manhattan Dispensary and Hospital, $1,081. Of the money collected, $27,724 was given by church congregations, and, as usual, the Protestant Episcopal Church was by far the most generous in its contributions, — these amounting to $17,500 of the above sum. Of the remaining $24,309, $16,528 was contributed by the various trades, and while the churches gave about $900 less than they did last year, the trades gave nearly $2,000 more than last year.

— The finance committee of the State senate gave a hearing on March 27th on the Fassitt-Bacheller bill, which provides for the removal of the destitute insane from the county poorhouses to the State asylums, and it said that the measure will undoubtedly be reported favorably. Among those present to urge its adoption were Dr. Alfred L. Loomis, president of the New York Academy of Medicine, Dr. Charles F. Chandler, president of the State Charities Aid Association, and Dr. John J. Milham, commissioner of the State Board of Charities. Prof. Chandler said that the result of the investigations carried on by the Charities Aid Association during the past seventeen years showed beyond cavil that the insane confined in the State asylums were in a much better physical condition, and were therefore more likely to be cured of their mental trouble, than those in the county poorhouses, where it is impossible for them to receive the medical attention necessary to their welfare. The chief objections to the county system are the frequent changes of the officials in charge, the lack of proper medical attendance, and the general neglect of the patients. While the cost of removal and the building of adequate quarters for the accommodation of those removed to the State asylums would probably amount to between $900,000 and $1,000,000, he did not think the cost of maintenance would be greater than at present. Among the other speakers was the Hon. Oscar Craig of the State Board of Charities, who gave a pathetic account of the condition of many of the poorhouses where the insane are confined. During the past year he has personally examined almost all of them, and he said that it was impossible to give even a faint idea of the outrageous treatment practised on the patients in some of these institutions. This state of things he thought was due more to the system than to any fault of the county superintendents or supervisors.

—In signing the certificate of death of Miss Rebecca Gibbs, a highly esteemed teacher in one of the public schools in the upper part of the city, who died recently, her physician, Dr. Ira B. Read, stated that the cause was "typho-malarial fever," and that he believed that her disease was due to the bad sanitary condition of the schoolhouse where she attended. In consequence of this fact the mayor, at the suggestion of President Bayles of the board of health, has requested that the Board of Education take some action in regard to the building. In his communication to the mayor Mr. Bayles states that this schoolhouse, which is an old frame structure, has been the subject of many complaints, and is not, in his judgment, fit for further occupation. A commodious new building is now being erected in the vicinity to take its place, but it will not be ready for occupancy before the opening of the autumn term of school.

— The second annual address before the society of the alumni of Bellevue Hospital Medical College was delivered at the New York Academy of Medicine on Wednesday evening, April 3rd, by Dr. William Osler, professor of medicine in Johns Hopkins University. His subject was *Phagocytes.*

— Dr. John Swinburne, one of the best known physicians in the State, died at his home in Albany March 28, of cancer of the stomach. He was born at Denmark, Lewis County, N. Y., in 1821, and graduated with distinguished honors from the Albany Medical College in 1846. Immediately upon his graduation he was appointed demonstrator of anatomy in this institution, and he at once entered upon a highly successful professional career in Albany. He served with much distinction as a surgeon during the late war, and upon his return from the field in 1864 Governor Seymour, in recognition of his valuable services, appointed him health officer of the Port of New York, a position which he held for six years. Dr. Swinburne was always very popular in the community, and after his return to Albany he served one term as mayor of the city, and one term as a member of Congress.

Correspondence.

Mr. Editor, — I have recently come across a twelve-year-old girl, comparatively healthy, whose heart is upon the right side and, as we would naturally infer, the liver is upon the left side and the stomach upon the right side. I am unable to find in my library any statistics that give the frequency of this condition. The girl was of a lean build, and the diagnosis easy. Other physicians corroborate the diagnosis.

I would like to know the statistics in such cases if they are at your command.

Yours,
Gardner Cox, M.D.

Holyoke.

LETTER FROM OUR PARIS CORRESPONDENT.

Paris, March 15, 1889.

Mr. Editor, — Dr. H. Libermann, of Strasburg, who has distinguished himself by some most remarkable works in science and in military medicine, has just published a note protesting vehemently against the exaggerations of the microbian doctrines. It is known that the theory now in vogue, to explain the genesis of pulmonary phthisis, consists in the contagiousness of a special microbe, the tubercle bacillus of Koch. It is, as the author states, very convenient when one is ignorant of the real nature of certain plagues, such as rabies, tuberculosis, tetanus, etc., to proclaim these affections as being virulent and infectious. Dr. Libermann has a new theory of his own of phthisis which may be worth noting. In 1869 Dr. Libermann, who was charged with an important service at the military hospital of Gros Caillou, studied the alteration of the voice in phthisical subjects, and attributed it to a paralysis of the vocal cords. This paralysis, he remarks, is not only one of the constant signs of latent phthisis, it is also the first morbid symptom. Inflammation of the pneumogastric nerves, which preside over the innervation of the lungs, appear to the author, after numerous anatomical verifications at necropsies, to be the constant cause of the laryngeal paralysis. The pneumogastric nerves being in a morbid condition, the nutrition of the pulmonary tissue soon becomes affected in its turn. The tubercle is then produced as an element of deterioration or degeneration. As regards the famous bacillus of Koch, it is only the product, and not the cause, of the tubercle. This theory is certainly a very ingenious one, and the treatment he applies for the cure of pulmonary phthisis accords with his theory. It consists principally in electrifying, morning and evening, by continued currents and following certain rules, the right and left pneumogastric nerves. Practised at the commencement of the malady, this "voltaization" gives, according to the author, the most unexpected curative results, which have been given in a work published by him. At a later period of the disease, the electricity being powerless, should be replaced by scientific hydrotherapy, which, far from being a contraindication, as believed by certain practitioners, augments the weight and the vigor of the patients, modifies the cough, discongestions the lungs, stops the spitting of blood, moderates the night sweats, diminishes the fever, excites the appetite, etc. Internally should be prescribed creosoted cod liver oil, coca wine, the phosphate of lime, raw milk, grilled meat, soft-boiled eggs. In fine, the internal medication varies indefinitely with the morbid forms themselves, so variable, of phthisis. During the campaign of Mexico, Dr. Libermann studied the influence of high altitudes on the health of tuberculous subjects. When the atmospheric pressure diminishes, the organic combustion becomes more normal and more regular, and one sees this denutrition, sometimes so alarming, of consumptive patients rapidly improve under the beneficial action of the air of certain altitudes. To obtain these favorable results, the altitude should not be below fifteen hundred metres. To prevent phthisis, we should, therefore, according to the new theory, do all that is possible to prevent the consecutive congestion and inflammation of the pneumogastric nerves. Heredity does not well accommodate itself to the theories of the contagionists of phthisis. According to some pathologists it confers a vulnerability which it is possible to modify. These believe but little in the contagiousness of tubercles. If it is true that the disease is inoculable in experiments of the laboratory, it does not follow that phthisical subjects should be considered pestiferous, under the fallacious pretext that phthisis is transmitted to certain species of animals. "Instead of employing, as counselled by Foussagrives, the commonplace expression of *insalubrity of the atmosphere of the patient*, to prevent as much as possible cohabitation in common with such patients, our modern *savants* have preferred to sow dismay and horror in families by insisting on the infecto-contagious and virulent power of phthisis, of which medical practitioners during a whole professional existence, and even the best observers among them, never observed the least palpable proof." The author then cites Dr. Williams, of London, who recently wrote that at the Brompton Hospital, which is exclusively devoted to the treatment of consumptive patients, not a single assistant was ever known to have contracted the disease there, and that in an atmosphere the most saturated with microbes that one could imagine, and in the absence of the most elementary prophylactic precautions. Dr. Libermann concludes his note by admitting that the microbian doctrines, however false or distressing they may be, do not the less render immense service to the cause of progress, and to that of hygiene in particular.

Prof. Charcot and his pupils have established that there is in the brain a motor zone where one can distinguish three motor centres: one for the face, the other for the upper extremities, and the third for the lower extremities. This supposition has already given practical results. For instance, motor troubles limited to such or such a region of the body are under the influence of lesions limited to such or such motor centre. It may therefore be understood that, the seat of the lesion being known, the surgeon would find it under the circular piece of skull that he had removed by trephining. The operation has already been performed with success a certain number of times, in patients affected with symptomatic epilepsy. The following note recently read by Dr. Péan at the Academy of Medicine on the case of a man who had been attended by Dr. Gelineau for partial epilepsy of six years' duration produced by a cerebral tumor, would seem to confirm this view. As the man was getting worse, the epileptic attacks increasing daily in frequency, Drs. Ballet and Péan were called in consultation. These gentlemen did not hesitate to affirm the existence of a tumor situated in the motor zone, and, Dr. Péan having practised the operation of trephining, there was found in the supposed site a tumor which was extirpated by fragments. From the day of the operation the patient, who had as many as thirty-seven attacks in the twenty-four hours, had only six. These soon ceased completely, and the patient had none during two months. He may, therefore, be considered cured. This case would demonstrate the innocuousness of opening the skull, and the value of the data acquired on the motor cerebral localizations and on cranio-cerebral topography. Thanks to these data, it is permitted to localize with a surprising precision the seat of certain cerebral tumors and to attack them directly.

It results from the experiments of Drs. Betremieux and Vassaux that of all the antiseptics known it is boric acid which should be preferred for treating diseases of the eye. At first carbolic acid was employed, but it was soon found that this acid acted as an irritant to the eye. Next, the corrosive sublimate and the biniodide of mercury were adopted, but these two products having the inconvenience of causing trouble to the liquids of the eye, a concentrated solution of boric acid, which produced very good effects, were resorted to. It is therefore considered advisable to employ this solution in preference to all other collyria in a great number of affections of the globe of the eye, or of the lids. Five or six hot lotions per day are necessary to obtain the excellent results furnished by boric acid.

Dr. Féré lately made a curious communication to the Société de Biologie on the mental state of the dying. It has been said that, on the deathbed, at a certain moment, one sees unrolled before him all the principal circumstances of his life. The memory is then prodigious. This fact, it appears, has been revealed by a great number of drowned persons who were restored to life. Dr. Féré brought to the notice of the society certain similar facts which he established in epileptics, in whom this extraordinary phenomenon of the memory was the warning to an approaching attack. Dr. Féré is inclined to believe that this mental state may consist in a sudden modification of the circulation of the blood in the brain.

A. B.

REPORTED MORTALITY FOR THE WEEK ENDING MARCH 23, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Scarlet Fever.	Diph. and Croup.	Typhoid Fever.
New York	1,571,558	822	373	20.88	19.56	7.08	6.48	.60
Philadelphia	1,040,245	412	135	12.00	14.40	—	2.64	3.36
Chicago	830,000	279	135	20.88	18.36	11.52	3.24	1.08
Brooklyn	814,505	352	146	21.28	23.24	2.52	8.96	.84
Baltimore	500,343	160	43	8.19	11.34	1.89	1.26	2.52
St. Louis	450,000	160	52	9.45	21.42	—	3.15	—
Boston	413,567	182	57	7.70	22.00	—	3.85	.55
New Orleans	250,000	119	30	6.88	8.55	—	—	2.58
Cincinnati	225,000	103	—	13.58	20.37	.97	3.88	1.94
Washington	225,000	110	36	4.55	21.84	.91	.91	.91
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	20	6	15.00	35.00	—	—	5.00
Charleston	60,145	31	10	6.46	9.69	—	—	3.23
Portland	40,000	8	1	—	12.50	—	—	—
Worcester	78,292	29	10	3.45	34.48	—	—	—
Lowell	71,518	25	5	20.00	20.00	—	—	12.00
Cambridge	65,552	28	12	14.28	17.85	—	10.71	—
Fall River	62,647	30	13	10.00	10.00	3.33	—	—
Lynn	53,334	16	—	6.25	12.50	—	—	—
Springfield	40,731	12	4	—	8.33	—	—	—
Lawrence	40,619	15	5	6.66	20.00	—	6.66	—
New Bedford	37,253	8	4	25.00	—	—	12.50	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	16	—	12.50	12.50	—	12.50	—
Salem	29,011	14	4	14.28	—	—	14.28	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	7	—	14.28	14.28	—	—	—
Haverhill	26,058	7	1	14.28	28.56	—	14.28	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	4	2	25.00	—	—	—	—
Newton	21,553	3	1	—	—	—	—	—
Malden	19,774	9	4	—	22.22	—	—	—
Fitchburg	17,534	3	2	—	—	—	—	—
Waltham	17,332	5	2	—	—	—	—	—
Newburyport	13,875	3	—	—	33.33	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	6	1	33.33	—	—	33.33	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2998; under five years of age 1094; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 457, acute lung diseases 552, consumption 359, diphtheria and croup 159, scarlet fever 87, typhoid fever 47, whooping-cough 45, diarrhœal diseases 40, measles 37, cerebro-spinal meningitis 14, puerperal fever 13, erysipelas 9, malarial fever 6. From whooping-cough, New York 17, Brooklyn 14, Philadelphia, Baltimore, Cincinnati and Washington 2 each, Chicago, St. Louis, Boston, New Orleans, Worcester and Chelsea 1 each. From diarrhœal diseases, New York 16, Philadelphia and St. Louis 4 each, Brooklyn and New Orleans 2 each, Cincinnati, Nashville, Fall River and New Bedford 1 each. From measles, New York 16, Brooklyn 10, Chicago 5, St. Louis and Boston 2 each, Baltimore and Fall River 1 each. From cerebro-spinal meningitis, New York and Philadelphia 3 each, Chicago, St. Louis, Boston, Cincinnati, Nashville, Cambridge, Somerville and Gloucester 1 each. From puerperal fever, Chicago 5, Brooklyn 4, Philadelphia, St. Louis, Cincinnati and Lynn 1 each. From erysipelas, New York 4, Philadelphia 3, Cincinnati 2, Chicago 1. From malarial fever, Philadelphia, Brooklyn, Baltimore, St. Louis, New Orleans and Charleston 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending March 9th the death-rate was 21.0. Deaths reported 3850; infants under one year of age 857. Acute diseases of the respiratory organs (London) 402, measles 198, whooping-cough 94, scarlet fever 51, diarrhœa 35, diphtheria 30, fever 24.

The death-rates ranged from 14.3 in Derby to 31.0 in Blackburn; Birmingham 17.2; Bradford 22.2; Hull 17.6; Leeds 22.5; Leicester 17.3; Liverpool 23.7; London 19.6; Manchester 29.6; Nottingham 19.1; Sheffield 24.6; Sunderland 21.4.

In Edinburgh 23.3; Glasgow 28.1; Dublin 33.4.

The meteorological record for the week ending March 23, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Mar. 23, 1889.	Barometer.	Thermometer			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minim'um.	8 A. M.	8 P. M.		Daily Mean	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
Mar. 17	29.90	35.0	36.0	33.0	100	86		93.0	N. E.	N. E.		24	18		R.	R.		24.00	.19
" 18	29.88	36.0	39.0	34.0	91	91		91.0	N.	E.		13	4		R.	R.		12.00	T.
" 19	29.84	38.0	41.0	34.0	91	83		87.0	N. E.	S. E.		5	3		O.	O.		9.20	.01
" 20	29.86	37.0	38.0	33.0	69	82		76.0	N. E.	N. E.		24	24		O.	O.		0.24	T.
" 21	29.90	36.0	39.0	33.0	72	96		84.0	N. E.	N. E.		34	16		O.	C.		2.25	T.
" 22	30.16	40.0	46.0	31.0	53	47		50.0	N. E.	E.		22	1		C.	C.			.00
" 23	29.99	48.0	61.0	37.0	40	37		38.0	S. W.	W.		9	10		O.	C.			.00
Means for the Week	29.93		43.0	34.0				74.0										52.9	.20

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 23, 1889, TO MARCH 29, 1889.

BARNETT, RICHARDS, Assistant-Surgeon U. S. Army, died March 27, 1889, at Fort Riley, Kansas.

MAUS, Capt LOUIS M., Assistant Surgeon (Fort Schuyler, N.Y.H.), will proceed to Camp S. B. Luce, Fisher's Islands, N.Y., with battery "K," 5th U.S. Art., and report to the camp commander for a tour of rifle practice. Par. 10, S. O. 158, Hdqrs. Div. of the Atlantic, Governor's Island, N.Y. City, Aug. 2, 1889.

ATLANTA BARRACKS, Ga., established by G. O. 28, A. G. O., March 21, 1889.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, April 10, at 7.15 o'clock. Papers: Mr. George Jackson, "The Metric System in Medicine and Pharmacy." Mr. F W. Stuart, "The Treatment of Obesity." Exhibition of Pathological Specimens.

ALBERT N. BLODGETT, *Secretary*.

A L. MASON, M.D., *Chairman*

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the society will be held Monday, April 8, 1889, at the Medical Library, 19 Boylston Place, at quarter of eight P.M. Dr. G. L. Walton: "Cases Illustrating the Latency of Ataxic Symptoms combined with rapid Optic Atrophy." Dr. John Homans, 2nd: "Dementia following Ether" Election of new members. A vote will be taken on the proposed alterations of the Constitution and By-laws.

F. B. HARRINGTON, M.D., *Secretary*.

OBITUARY.

DUANE B. SIMMONS, M D.

Word has come of the death, at Tokio, Japan, on February 19, of Dr Duane B. Simmons, a resident of Japan with brief intermissions since the opening of that country to foreign intercourse He was born at Milan, Dutchess County, New York, August 13, 1832. He went out to Japan as medical missionary with the first mission sent out by the Dutch Reformed Church, in May, 1859. After a few months' service he made a friendly separation from the mission and devoted himself to the general practice of his profession among the foreign and native population of Yokohama. He returned to the United States in 1865, and after two years spent in study here and in Europe, went back to Japan. Soon after came the restoration of 1868, and he became Government Medical Director and Instructor and organized the first hospital service

R. PALMER HOWARD, M.D.

This eminent Canadian physician died March 28th. He was born in Montreal on the 12th of January, 1823. Dr. Howard was educated in that city, and studied medicine in McGill University, Great Britain, and France In 1849 he returned from Europe, and commenced the general practice of medicine, in which he realized a first-class reputation, being speedily in demand by the best people in the city. In 1880 he gave up the practice of surgery, and limited his duties to those of the pure physician. In 1856 he was appointed Professor of Clinical Medicine in McGill, and in 1860, upon the death of Dr. Holmes, succeeded to the chair of Theory and Practice of Medicine in the same institution. About three years ago the degree of LL.D., *honoris causa*, was conferred upon him by the University in which he had been a professor for thirty four years He had been Dean of the Faculty for six years, President of the Canada Medical Association, President of the College of Physicians and Surgeons of Quebec, President of the Medico-Chirurgical Society of Montreal, Vice-President of the Association of American Physicians For twenty-two years he was one of the attending physicians and surgeons of the Montreal General Hospital, and was the painstaking secretary of that institution for thirty-three years. As an author, Dr. Howard contributed largely to medical literature. He has written upon pneumonia, phthisis, heart disease, and anæmia, and his works upon these subjects made him a recognized authority in the profession. In 1885 he contributed a valuable series of articles to Pepper's *System of Medicine* on rheumatism and allied subjects, which were considered to have great medical value.

BOOKS AND PAMPHLETS RECEIVED.

Eleventh Annual Report of the Presbyterian Eye, Ear, and Throat Charity Hospital, Baltimore. 1888.

Methods for the Prevention of Scarlet Fever. An Address Delivered at the Annual Meeting of the Rhode Island Medical Society, June 9, 1888. By Charles V. Chapin, M.D.

A Case of Double Vascular Exophthalmos Recovery under Intermittent Compression of the Right Carotid Artery and the Internal Use of the Iodide of Potassium. Cocaine conjunctivitis. By Charles J. Kipp, M.D., Newark, N. J.

Handbook for the Hospital Corps of the United States Army and State Military Forces. By Charles Smart, Major and Surgeon United States Army. Approved by the Surgeon-General of the Army. William Bond & Co., New York.

A Manual of Instruction in the Principles of Prompt Aid to the Injured Designed for the Military and Civil Use. By Alvah H. Doty, M.D., Major and Surgeon, Ninth Regiment, N. G., S N Y New York: D. Appleton & Co. 1889.

The Science of Successful Surgery. By John B. Roberts, M D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic; Surgeon to St Mary's, to St. Agnes', and to the Jewish Hospital. The Annual Address of the Philadelphia Academy of Surgery. Chicago. 1889.

Bureau of Education. Circular of Information No. 2, 1888. Contributions to American Educational History. Edited by Herbert B. Adams.
3. The History of Education in North Carolina. By Charles Lee Smith, Fellow in History and Politics, Johns Hopkins University. Washington. 1888

Suggestive Therapeutics. A Treatise on the Nature and Uses of Hypnotism. By H. Bernheim, M.D., Professor of the Faculty of Medicine of Nancy. Translated from the Second and Revised French Edition. By Christian A Herter, M D., of New York. New York and London: G. P Putnam's Sons. 1889

Suggestions on the Treatment and Influence of Diet in the Management of Rheumatic Diseases By Morris H. Henry, M A, M.D., LL.D., of New York, Officer of the Royal Order of the Saviour, of Greece; Commander of the Imperial Orders of the Medjidie and of L'Osmanie, of Turkey; Formerly Surgeon-in-Chief of the State Hospitals, Ward's Island, New York New York.

The Treatment of Inebriety in the Higher and Educated Classes. By James Stewart, B A, Member of the Royal College of Physicians of Edinburgh, Licentiate of the Royal College of Surgeons of Ireland, Fellow of the Medical Society of London; Member of the Medico-Psychological Association, and of the Society for the Study of Inebriety; Formerly Surgeon in the Royal Navy. Read before the Society for the Study of Inebriety, January 1st, 1889. London. 1889.

Lectures on the Errors of Refraction and their connection with Glasses. Delivered at the New York Post Graduate Medical School, with Illustrative Cases from Practice both Private and Clinical By Francis Valk, M D, Lecturer on Diseases of the Eye, New York Post Graduate Medical School, etc. New York G. P Putnam's Sons 1889.

The Insane in Foreign Countries. By William P. Letchworth, President of the New York State Board of Charities. New York and London G. P. Putnam's Sons. 1889.

Original Articles.

THE DIAGNOSIS AND TREATMENT OF CANCER OF THE BREAST.[1]

BY J. COLLINS WARREN, M.D.,

Associate Professor of Surgery in Harvard University, Surgeon to Massachusetts General Hospital.

The great changes which have recently taken place in the treatment of this formidable disease have invested it with a new interest, and it has therefore seemed to me that the subject of this paper was as appropriate a one as could be presented to your society by the general surgeon. Until within the present decade the success which has attended operative interference has been so unsatisfactory that many surgeons, among whom I should count myself, had become discouraged, and had chiefly confined themselves to operations upon exceptionally favorable cases, or to those which demanded operative interference for the relief of suffering merely.

The old method of operating contemplated either a removal of the mammary gland with a portion of the integument, or even of a portion only of the gland and other tissues immediately surrounding the disease. When enlarged glands were felt in the axilla an incision was prolonged from the wound a short distance beyond the border of the pectoralis muscle, and the glands were shelled out with the finger or some blunt instrument. It was in rare instances only that more radical operations were attempted. The bold methods advocated by Mitchell, Banks, Keuster, Gross and others are now in course of adoption by the surgical world, and a new mass of statistics is gradually being accumulated which is rapidly furnishing material for reopening the study of this question.

It is important to lay some stress upon the kind of material that should be used for this purpose, for recent discussion has brought out very decided opinions from men whose views should be regarded with the greatest respect, but who are not disposed to look upon the so-called "completed operation" as an advance upon the older methods.

There are good grounds for rejecting the great mass of statistics which have been compiled previous to the present decade.

In the first place, microscopic examinations are wanting in the majority of cases, and many of those which have found their way into reports of cases have not been reliable. Not only have some cases reported as carcinoma proved on further study to belong to non-malignant growths, but there are also types of disease regarded as forms of inflammatory affections of this organ in which the experienced pathologist is able to detect early changes in the growth of the epithelial structures, which are the first steps in the development of a carcinoma.

Again, although the antiseptic treatment of wounds was first introduced nearly a generation ago, it is only within a few years that the system has become so generally perfected that the average surgeon has been able to arrive at the results contemplated by its author. Each succeeding year brings with it a material improvement in mortality statistics, and it would be manifestly unjust to estimate the amount of danger and suffering entailed upon a patient subjected to the operation from material which has been collected previous to the last few years.

The advocates of the completed operations are now laboring under the same difficulties in educating the surgical public up to their standard of operation, precise rules for which are rigorously laid down, and which should be closely adhered to by those attempting to give the new method a proper test. When these conditions shall have become so familiar to all surgeons that cancer will be recognized during the earliest periods of existence, that the diagnosis will be promptly followed by an operation, that the operation will be so thorough in character that it will come up to the most exacting standard, and that the patient may reasonably expect the full benefits of the antiseptic system, there will, I think, be but little doubt that the very unfavorable prognosis now generally accorded to this disease will have to be materially modified. Let us consider first what may be done in the way of an early diagnosis.

When a woman of middle age presents herself with an indurated mass in the mammary gland, which has already involved the skin, and there exists at the same time a retraction of the nipple, and possibly a slight fulness of the axilla of the same side, the diagnosis is so clear that a tyro would find it hard to make a mistake. The problem, however, is far more difficult, and often embarrassing, when an anxious woman has only an indurated spot in the breast to show, and expects the surgical expert to give a definite opinion. There are a few facts bearing upon the etiology of this disease which it is well to bear in mind in making up an opinion.

Among the most important of these is the age of the patient: according to Gross[2] "the largest number in 1622 cases in which the age of the patient was noted was found to be between forty and fifty years, the next largest number was found between fifty and sixty years, the next in the thirties, and the next in the sixties. The earliest age at which cancer of the breast was reported is given by Henry as twenty-one. Very few cases are seen before the age of twenty-five. A case under my care at present in the hospital is that of a girl of twenty-two, and owing to its rarity deserves record here.

Lizzie M., twenty-two years six months old. Born in Boston. No cancer in her family, so far as known. Previous history good, unmarried. Catamenia regular. Presented herself at the Massachusetts Hospital, January 25, 1889. Three months before noticed a lump in the left breast, and almost at the same time a gland in the axilla. She is well developed and nourished. In the upper and outer quadrant of the left breast there is an indurated mass the size of an English walnut. There is no involvement of the skin, but a slight dimpling exists. No retraction of nipple. There are some enlarged glands above the clavicle, but these are said to have existed for a long time previous to any breast-disease.

The completed operation was performed January 26th. The glands did not extend upward beyond the lower margin of the pectoralis minor. There was considerable shock, that night the temperature falling to 95.8°. Pulse, 120; respiration, 48. Prompt reaction took place, however, and the convalescence has been rapid and without farther complications. Suppuration around one suture and opening of the wound at that point: otherwise union by first intention. Microscopic examination of tumor by Dr. Whitney. "A dense, somewhat translucent, retracting nodule deep in the breast. A section presented a whitish, fibrous-looking surface, with mucous, small opaque yellow dots and lines. Microscopic examination showed it to be made up of a thick, dense, small-meshed, connective-tissue groundwork, in the spaces of which were solid masses of rather small, cubical, epithelial cells, many of which were fatty degenerated. Scirrhus cancer.

Another sign of value is the locality of the tumor, if we may accept again the testimony of Gross. In 820 cases, the disease was found in the upper and outer quadrant in 206, near the nipple in 235, and in the upper hemisphere twice as often as in the lower hemisphere. Speaking from general impression only, I should be inclined to agree with the deductions made from these figures, namely, that we are more likely to find the disease in the upper portion of the gland, and more likely also to find it nearer the axillary than the sternal margin of the gland.

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[1] Read before the Boston Gynecological Society, February 14, 1889.

[2] American Journal Medical Sciences, April, 1888.

The influence of heredity has often been quoted as a characteristic peculiarity of cancer. Sir James Paget has cited a number of remarkable instances of the disease occurring among relatives. An example of this tendency was afforded by one of my own cases. Her maternal grandmother died of cancer of both breasts, at the age of thirty. A maternal aunt died of cancer of the breast. A cousin on her mother's side died of cancer of the rectum. An aunt on the father's side was operated upon recently at the Massachusetts General Hospital for a cancer of the breast. But Gross found a family history of cancer in only 8.50 per cent. of his cases.

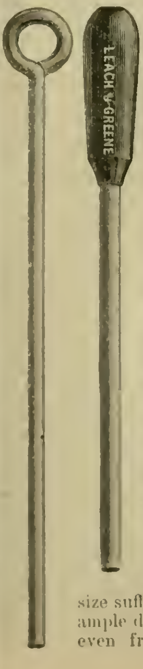
An undoubted record of the prevalence of cancer in a family would, I think, have considerable weight in enabling one to make a diagnosis in a doubtful case. The difficulty in obtaining a record which would approach in accuracy the standard now demanded as evidence of the existence of cancer would be almost an insuperable obstacle. The information ordinarily to be obtained from a patient bearing upon this point is practically of little value.

A slight dimpling of the skin is thought by Gross to be a sign of considerable importance, as one which is to be found at an early stage of the disease. This is due to a pulling upon the fibrous bands which attach the skin to the mammary gland, by the contraction of the diseased portion. I have seen this depression in cases in which I made the diagnosis of chronic mastitis, and there seems to me to be no ground for assuming that an inflammatory condition of the mammary tissue in a state of involution should not give rise to such an appearance. In fact, we may have all the external appearances of cancer of this organ simulated by inflammation. A striking illustration of this fact was observed by me in the breast of the wife of a brother practitioner. In this case there existed, in addition to an indurated nodule in the outer hemisphere of the breast, a retraction of the nipple and an enlargement of the axillary glands. The nodule proved, however, to be inflammatory, and disappeared entirely a few months afterwards; and the patient at the present time, several years after the disappearance of the swelling, is in excellent health. Retraction of the nipple is indeed often a misleading symptom; for it is not infrequently found in breasts that are entirely healthy.

Many of the cases submitted to the surgical specialist are therefore, as I have said, extremely difficult to diagnosticate in the early stages of the disease; and yet this is the period which is generally recognized as the one in which diagnosis is of great value. A striking example of the difficulties which attend such a case is afforded by a patient sent to me in March, 1888, by Dr. Brown, of Reading, Mass.

Mrs. P., forty-five years of age, received a blow from a sharp object eight weeks before. The blow was immediately followed by a swelling below the nipple, at the point of injury. In a few weeks the swelling had diminished somewhat, but a small indurated mass was still to be felt at that point. There was no dimpling of the skin, and no enlargement of the glands in the axilla. The patient's general health was good. The growth appeared to be of an inflammatory nature. I advised her to let me see it again in a few weeks. She visited me a second time, on May 19th, and the breast was then found to be entirely infiltrated with cancerous disease, presenting a hard, brawny mass; the glands in the axilla were also considerably enlarged. I then, of course, recognized a very malignant type of cancer, and advised no operative interference. She received similar advice from several other surgeons, but eventually had it drawn out "by caustic;" and Dr. Brown informs me that she died December 11th. It is probable that operative interference at any period would not be attended with satisfactory results in such a malignant type of the disease, but it would certainly be more creditable to surgery were it possible to give a definite diagnosis in doubtful cases, for it is in precisely such a class of cases that the surgeon is most likely to be consulted.

An old method of ascertaining the nature of morbid growths consisted in the introduction of a grooved needle into the tumor, and submitting to microscopic examination such fragments or juices as could be extracted. Quite a variety of instruments were devised for this purpose, but owing to the danger of producing inflammation by such a manœuvre, unprotected by antiseptic methods, and to the imperfect microscopic technic, which consisted principally in poking the fragments apart with needles, no satisfactory results were obtained, and the method gradually fell into disuse.



It occurred to me about a year ago that this plan might be revived under the favorable auspices of antisepsis, and perfected by the improved microscopical methods. An instrument devised by Dr. S. J. Mixter for removing grains of powder from the skin was suggested by him as suitable for the purpose. It consists in a fine canula (No. 6 Charrière filière), sharpened on the inner edge, which, when rotated by means of a handle at its upper end, acts like a trephine to remove a minute circular disk of skin. I have had a number of different sizes made, gradually enlarging them as experiment showed the absence of unfavorable results attending their use, until I have reached as high as Charrière's No. 12. This gives a diameter of about 4 mm., — a size sufficiently large to take a section of ample dimensions for microscopic study, even from a transverse section of the fragment removed. A small staff is kept within the canula to protect the cutting edge when not in use, and to remove the specimen from the canula.

The method of making an examination with this little instrument is so simple that it can be easily carried out in one's office. A few drops (about ten) of a five per cent. solution of cocaine is injected subcutaneously over the nodule to be examined. The skin, having been carefully cleansed with a weak solution of bichloride of mercury, is punctured with a sharp-pointed bistoury, making a minute wound, sufficiently large to introduce the exploring canula. The instrument is then pressed gently against the new growth, and lightly rotated between the thumb and middle finger. As little pressure should be exerted as possible. After the canula has penetrated the growth the desired distance, from half an inch to two inches, it should be withdrawn a distance of two or three mm., and then directed in a line slightly oblique to the direction which it had first taken. By rotating now a short distance in the new direction, the cylindrical mass of tissue contained within the canula will be divided, and can be removed from the diseased mass. The worm-like mass of tissue pressed out from the canula by its staff should be immediately placed in a weak solution of alcohol, which gives place the following day to strong alcohol; or it can be placed upon the freezing microtome, and longitudinal sections be taken for immediate study.

When the canula is carefully introduced, a segment of the tumor can be obtained showing the various appearances from the extreme periphery to the central portions, so that there is no danger of obtaining a false impression owing to a partial examination only of the growth.

In one of the first cases in which I employed this method the growth proved to be a chronic mastitis, with cystic degeneration. The section showed clearly the interstitial fibrous tissue, with acini and ducts of the glands supported in it. In this case there was great mental depression and nervousness, which by a definite diagnosis it was possible to relieve.

The following is a sample case, showing what may be accomplished by the method: —

Miss C., fifty years of age, always healthy, has had for several years a small lump near the axillary margin of the left breast. Six months previously, had noticed a slight enlargement, since when it has been under the observation of her physician. As it did not disappear, she was sent to me. I used the finest canula (No. 6), and sent the specimen to Dr. Whitney for examination. An examination of a fragment in the fresh state showed clumps of epithelial cells floating in some of the fluid serum removed, and the diagnosis of cancer was made, which was confirmed after removal of the breast.

When the larger canulæ are used, the alveolar structure can easily be demonstrated.

In the case just mentioned the little wound made by the knife was covered with antiseptic cotton, and sealed with collodion, and at the time of the next visit of the patient the wound was found to have been healed by first intention. Prompt healing of the wound has always been the result in those cases hitherto examined in this way, and the patients have complained of no particular pain or inflammation as the result of the operation. In one case a small artery was wounded; but healing took place promptly afterwards. The boring of the canula through the dense morbid tissue might be supposed to cause some pain; but this is avoided by the gentle rotary motion of the instrument. I have succeeded in making a diagnosis in a large variety of morbid growths explored in this way, in doubtful cases.

There is a certain type of this disease in which an early diagnosis is of special advantage, as an operation at this period affords a favorable prospect for a radical cure. I refer to those cases where the disease appears to supervene upon a chronic inflammatory process, and the mass can be removed while the cancerous degeneration is still limited to the inflamed nodule. Such a case is the following: —

Miss W., fifty years of age, sent to me by Dr. F. I. Knight, had noticed an indurated lump in the upper hemisphere of the right breast, six months previously. It had not increased in size since that time. No glands were felt in the axilla. I advised an operation without previous exploration. On laying open the breast, the appearances were so suggestive of a chronic mastitis that I thought I had made an incorrect diagnosis, and did not open the axilla.

The following is the report made by Dr. Whitney of the microscopic examination: —

"The whole gland is replaced by a dense white tissue, in which were several cavities, the largest as big as a robin's egg. These were lined with a smooth membrane, and had evidently contained fluid. On microscopic examination, the basis of the growth was found to be composed of a dense fibrous tissue. In this were embedded the altered glandular elements. In places, the ducts were dilated, evidently the origin of the large cysts seen in the gross. Here and there the acini of the gland were reduced in size, and the cells smaller, as if undergoing atrophy. In other places the cells had proliferated and extended widely from their original place in a plexiform network into the surrounding tissue. In places these lines of cells appeared to follow the course of the lymphatics. Here and there a compound granular cell was seen, but in general comparatively little fatty degeneration. The growth seems to be a diffuse, interstitial fibroma, in which the gland elements are now beginning to proliferate actively. Commencing cancer."

Although no dissection of the axilla was made in this case, I have expressed a very favorable prognosis, as it seems to me that the very early stage of development of a cancer precludes the possibility of infection beyond the point of inflammation.

And this brings me to another branch of our subject, namely, the question of the local origin of the disease.

There are some very high authorities in favor of the view that, although not necessarily a blood disease, it is not, on the other hand, purely of local origin. Such is, I think, the inference to be drawn from the attitude assumed by Dr. R. M. Hodges in his recent paper upon excision of the breast,[3] which has, I need not say, excited much interest. Sir James Paget says: "Once formed, the secondary diseases and much of all that follows, even to the inevitable end, may be due to transference of cancerous materials from the primary growths. But I do not think that all the secondary and yet later events can thus be explained. We have no reason for believing that the morbid material of the blood is always exhausted in the formation of the primary cancer, and it seems more probable that in some form this material remains or is renewed, and that to this, as well as to transference from the primary disease, the secondary and later changes are to be ascribed."

There are many cases which give grounds for such a belief. Thus, cases reported by Dr. Gouley[4] of excision of the breast for scirrhus cancer, with recurrence twenty, twenty-four, and twenty-five years after operation, are suggestive of more than purely local influences. But without attempting to offer elaborate evidence *pro* or *con* bearing upon this question, I must enroll myself with those who believe in the purely local origin of cancer. A familiarity with the habitual progress of the disease from one anatomical structure to another; the steadily diminishing size of the cancerous deposits as we proceed from the periphery towards the centre of the lymphatic system; the analogy between the manifestations of this and other forms of disease whose local origin is well recognized, — are all so strongly suggestive of a local origin, that it is difficult in the light of modern pathology to accept any other interpretation.

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[3] Boston Medical and Surgical Journal, Nov. 29, 1888.

[4] New York Medical Journal, Oct. 13, 1888.

It seems to me, therefore, that with the benefits accruing from the opportunity to make an early and certain diagnosis, if we undertake to remove, not only the tangible evidences of disease, but all those structures which experience shows are habitually involved at a comparatively early date, we have a right to hope for more satisfactory results than have hitherto been obtained.

Let us have a mutual understanding as to the essentials of the so-called completed operation. Surgeons differ somewhat as to the amount of breast integument that should be removed. The followers of Gross, who makes a circular sweep of the whole breast, are comparatively few, and even he now proposes to abandon it in cases which he can keep under observation, and thus be enabled to remove promptly recurrent nodules. Butlin, whose work on the operative treatment of malignant disease has attracted so much attention lately, does not think necessary even to remove all of the mammary gland, although he does attach importance to the inclusion of a wider margin of integuments than the old operations contemplated. It is generally agreed at present, I think, to remove the whole gland and a more liberal supply of integument than formerly. Sometimes vertical incisions are preferred to the customary horizontal cuts, as affording better drainage. But the most important feature of this part of the new operation is the careful dissection of the fascia from the pectoral muscle, for it is in this tissue that capillary lymphatics are concealed, which furnish hiding-places for the outposts of the disease. Careful attention should also be paid to the margin of the pectoral muscle: not only should the fascia which covers in the axilla be dissected off from it, but its lower border should be well freed from fat and connective tissue. The axilla is best opened by a cut through the skin along the edge of the pectoralis, until we come to the edge of the coraco-brachialis. Continuing down on this muscle a short distance with the knife, the skin and superficial fat drop away sufficiently to disclose the great vessels lying beneath a thin fascia. Opening this fascia backward along the line we have come exposes the contents of the axilla, and especially the branches of the vessels, which can now be secured as the operation progresses. A pyramidal mass of fat is now dissected out, the apex reaching sometimes to the clavicle, the base frequently extending deeply on to the subscapular group of muscles. The glands which lie near the clavicle will have to be removed separately, and can best be enucleated from the neighborhood of the vessels by the finger. If they are numerous, the pectoralis can be separated on the line selected for the ligature of the axillary artery below the clavicle, and the glands and some of the loose tissue can then be readily removed. This plan I recently employed in the case of a lady fifty years of age. The wound healed without complications, and the patient made a rapid convalescence.

This operation is doubtless far more severe than any of the old methods; but under careful antiseptic precautions, which are constantly being improved, I cannot help feeling that the mortality rate is now on a descending curve. Dr. M. H. Richardson,[5] in his paper on the results of this operation, is inclined to think that the mortality is increased 50 per cent. by the new method. This impression was obtained, I think, from a study of some of the earlier series of the "completed operations." It is also Butlin's opinion. As the increased mortality rate has been used as an argument against the completed operations, I have taken pains to look up the results of my own operations within the last few years, and find that, in forty-seven consecutive cases of excision of the breast, there have been no deaths. In thirty-two cases only of these was there a dissection of the axilla. The duration of convalescence is much shortened, and complications are rare. Shock is a complication to be guarded against always, but in comparatively few cases has this been of sufficient gravity to cause alarm. I am inclined to think powerful antiseptic drugs have been responsible for more than one case of fatal poisoning before the proper limit of their use was generally understood.

A more minute knowledge of the actual course of the disease through the lymphatic vessels, which ramify along the border of the pectoralis and in the axillary region, may enable us to curtail materially the present wide range of dissection. Here is a field for future research.

Sir Spencer Wells [6] has shown, from Dr. Creighton's observations, that tumors of the sweat glands of the axilla may form nodules on the axillary margin of the breast and in the axilla. In these cases the disease has no connection necessarily with the mammary gland, and the breast need not be removed. The study of the pathology of this region, in spite of many valuable works, cannot as yet be considered as exhausted.

In 605 cases collected by Butlin, the mortality was 15.85 per cent., or 1 in 6. Cheyne reports 37 of Lister's cases, with 2 deaths. In 24 of these cases the axilla was dissected. In Butlin's 40 cases there were 3 deaths. Butlin thinks that the mortality of the completed operation is twice as great as that when the breast alone is removed. Gross makes out a mortality of 14.24 per cent. for all kinds of operations. In 43 completed operations performed by himself, there were only 2 deaths; 1 from fat embolism, and 1 from pneumonia. In 10 additional operations by his colleagues, recovery took place in every instance. The mortality in this series was therefore only 3.7 per cent.

In regard to the number of cures effected by operative treatment, the percentage figures seem discouragingly small; but when we remember that in old times a case of permanent cure was regarded as a surgical curiosity, it must be acknowledged, I think, that a tangible improvement has taken place. Gross obtained from his collections a percentage of 11.83, when the patient was alive and well three years after operation. As in only 2 per cent. of cases did recurrence take place after three years of immunity, this limit has been accepted as an indication of cure. Butlin thinks the percentage of cures should be placed as high as 12 to 15 per cent. at the present time.

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[5] Boston Medical and Surgical Journal, August 30, 1888.

[6] Morton Lecture on Cancer and Cancerous Diseases. London: J. & A. Churchill, 1888.

In those cases in which a fatal termination was reached before the three years' limit, Gross found that there was an average prolongation of life of ten months when the axilla had been dissected.

I regret to say that I have not had an opportunity to ascertain the histories of all the cases of my series. I have, however, been able to follow the history of several mentioned in a former paper,[7] and will briefly refer to them here.

Three years and a half immunity. Mrs. B., Amesbury, Mass., about sixty years of age. Disease had existed two months. A hard and voluminous cancer of the breast, with large glands in the axilla extending as high as the clavicle. The completed operation was performed. The case was not a promising one, and in former times I should have declined to operate. The operation was performed July 9, 1885. Dr. H. G. Leslie writes me, under date of January 14, 1889: "I have to report that Mrs. B. still remains in perfect health, with no signs of the recurrence of the disease."

Four years' immunity. Miss B., about forty years of age, was operated upon in December, 1884. First noticed a tumor in the breast the previous winter: but an eczema of the nipple had existed in 1883. No glands were felt in the axilla; but the completed operation was nevertheless performed, with the result of finding one small nodule in the axilla. She was married October 15, 1888, after an engagement of seven years' standing, no sign of a recurrence having shown itself, and her health having greatly improved.

Four years and a half immunity. Miss J., Haverhill, Mass., was operated upon in June, 1884. The breast was very voluminous and the cancerous nodule was small, and situated near the sternal margin. The axilla was opened, but no glands found. Dr. M. D. Clarke writes me, under date of January 30th, 1889, that he has recently visited Miss J., and that there has been no return of the disease.

Fire and a half years' immunity — recurrence. Grace M., forty-five years of age, was operated upon in the hospital, in July, 1882. There was no gland in the axilla. Had first noticed a lump three years before; no return of the disease until the autumn of 1887. A lump was then felt in the axilla.

A nodule the size of a hen's egg was removed from the axilla in July, 1888. It was found to be a colloid cancer. There was no return in the breast. At the present date both breast and axilla are free from disease; but the patient's general health is not good, and I fear a development of the disease internally. I cannot help feeling that, had the completed operation been performed in this case, there would have been no recurrence.

Ten years' immunity. M. E. M., thirty years old. Disease four years' duration. An ill-defined tumor of the right breast, the size of an egg. Operation performed September 18, 1878. The tumor, on section, was found to be very dense, and infiltrating nearly the whole breast. The breast was excised, but the axilla was not opened. The patient was living in January, 1888, and there had been no return of the disease. This case is taken from the record book of the hospital; and, as no microscopic examination was made, and I have no recollection of the case, the diagnosis may be considered doubtful.

If we add to Gross's 53 cases of completed operations my own 32 cases, we have a series of 85 cases with only two deaths.

It seems fair to assume, therefore, that a mortality rate of 3 per cent. is not too much to hope for in the future.

If Butlin, whose operations are much less radical than those of Gross, thinks that cures are obtained at the present time in 15 per cent. of the cases operated upon, may we not hope for a still further increase of this percentage if a ready method of diagnosis enables us to operate in the earlier stages of the disease?

I do not think it is too much to expect that, when the statistics of the next few years are rolled up and counted, we shall find that surgery has succeeded in accomplishing a cure in 20 per cent. of the cases.

I am well aware that many interesting points of this subject have not been touched upon, but the intended scope of this paper will hardly authorize my trespassing further upon your time.

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[7] Boston Medical and Surgical Journal, February 17, 1887.

A CASE OF TUMOR OF THE BRAIN: REMOVAL; DEATH.[1]

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III. GENERAL MEDICAL CONSIDERATIONS UPON DIAGNOSIS AND THE ADVISABILITY OF OPERATION, WITH REMARKS ON CRANIO-CEREBRAL TOPOGRAPHY. (DR. KNAPP.)

1. *The Diagnosis.*

I will not attempt to discuss the subject of cerebral localization as applied to intra-cerebral growths. That has been done so many times of late as to render another essay on the subject needless, so that I will speak here merely of the reasons which led me to believe that we had to do with a subcortical tumor of considerable size situated in the middle and upper portions of the right ascending frontal and parietal convolutions. (Figs. 6, 7, 8.)

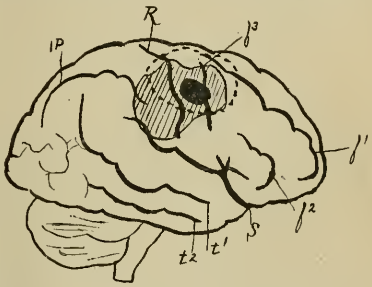

FIG. 6.—View of the right hemisphere of the brain, ⅓ natural size, Reduced from Dalton, Series A, Plate II. The black spot was drawn before the operation, as showing the chief seat of the tumor, and the dotted line as showing its probable size and extent. The shaded portion represents the probable position of the tumor, obtained by placing the tumor on the diagram as nearly as possible in the position it occupied in the brain, supposing the black spot to be beneath the crus. The tumor lay obliquely.

IP, interparietal sulcus; t^1, t^2, first and second temporal sulci. Other letters as before.

(1) *The Diagnosis of the Tumor.*—In many cases, of course, the diagnosis of a cerebral tumor is difficult, and it may be impossible. In this case, however, it was easy. The four classical symptoms of tumor — headache, vertigo, vomiting, and optic neuritis — were all present, while the gradual mental failure and the increasing weakness, with the neuritis, showed increasing intracranial pressure, and strengthened the diagnosis. Additional evidence in favor of the existence of a tumor was afforded by the focal symptoms.

(2) *The Diagnosis of the Location of the Tumor.* — The symptoms given above showed that we had to do with a tumor; the symptoms which helped to determine its situation were the

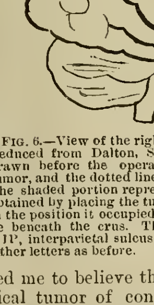

FIG. 7. — Horizontal section of the right hemisphere through the centre of the black spot, showing the position of the tumor, ⅓ natural size. Reduced from Dalton, Series B, Plate II.

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[1] Continued from page 330.

convulsions, paralysis with contracture, anæsthesia, and loss of muscular sense. The history was too uncertain to determine what was the signal symptom, and I could not learn definitely whether the convulsion or the paralysis came first.

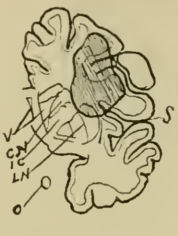

FIG. 8.—Vertical section of the right hemisphere through the centre of the black spot, showing the position of the tumor, $\frac{1}{3}$ natural size. Reduced from Dalton, Series C, Plate VII. The basal ganglia were probably pushed aside by the growth.

V, Ventricles.
CN, Caudate nucleus.
IC, Internal capsule.
LN, lenticular nucleus.
O, optic tract.
Other letters as before.

The convulsions, for the most part, were preceded by a sensory aura in the left wrist and forearm, and began with spasm of the wrist. They were often limited to the arm. Convulsions of this sort have great value in localization. They show with great probability that the lesion involves the motor cortex, or the parts immediately below it. They are of much less value, however, in determining what part of the motor cortex is involved, for the irritation may start from any part of the lesion, so that with a large lesion, the exact seat is uncertain; in fact, in this case, they seem to have affected different parts of the arm at different times. The convulsions in this case, however, indicated that the chief seat of irritation was in the centre of the wrist and fingers.

Paralysis has a much more exact value in localizing. It was most marked in the hand and forearm, and was attended with contracture and exaggerated tendon reflexes, showing that the lesion had given rise to secondary degeneration, and therefore extended probably below the cortex. Bramwell[3] says that epileptiform convulsions of the Jacksonian type are more certainly produced by a discharging lesion in the motor area of the cortex, than localized paralysis by a destroying lesion; but that, when localized paralysis due to a cortical lesion is present, it is more certainly indicative of the exact seat of the lesion than a localized convulsive seizure. The paralysis, therefore, showed that the cortical tumor affected chiefly the centres for the wrist and fingers, but probably involved all the centres for the arm, and, to a certain extent, those for the leg. In other words, the growth probably extended from the junction of the lower and middle thirds of the ascending frontal convolution, opposite the second frontal sulcus, to a level about even with the middle of the first frontal convolution, and it extended from just in front of the prefrontal sulcus back across the ascending parietal convolution. The result showed, however, that the leg centres were not so much involved as I had supposed.

The significance of anæsthesia as a focal symptom has been much discussed, and the location of the cortical sensory centres is still a matter of dispute. Ferrier[4] places the centres for sensation in the hippocampal region, and opposes the belief that the Rolandic region has anything to do with sensation. The majority of authorities, however, — Munk, Luciani and Seppilli, Horsley, and Starr, — think that in the Rolandic region, distributed in the same way as the motor centres, are sensory centres, and Horsley[5] has pointed out what cells may be sensory and what motor. Dana,[6] at the last meeting of the American Neurological Association, showed pretty clearly that, as far as man is concerned, Ferrier's idea of sensory centres in the limbic lobe is without support, and that the centres for sensation are in the Rolandic region. Without an autopsy we cannot be sure that the limbic lobe in this case was healthy, and furthermore, it may be urged that the tumor extended deep enough to affect the sensory tract in the posterior third of the posterior limb of the internal capsule, — Charcot's sensory cross-way. The anæsthesia, however, varied in intensity in the same way that the paralysis did, being most marked in the wrist and forearm; so that I believed that it was due to a lesion of the cortex in the supposed sensory centres in the Rolandic region; and the existence of a sensory aura, with an irritative lesion of the hand centres, seemed to support this view.

Munk[7] has shown that the muscular sense is compounded of four ideas — ideas of touch, of pressure, of the position of the limbs, and of the feeling of innervation of the muscles. These are all, he thinks, associated with the cortical motor centres. Horsley speaks of the sense of present movement (the feeling of innervation?) and the memory of past movements (ideas of position?), and he places these also in the motor centres. Both of Horsley's forms were affected in this case. There is some evidence, however, in favor of the belief that the inferior parietal lobule in man is a centre for the muscular sense, — possibly, as Dana thinks, a centre for the memory of past movements. Neglect of this theory led me, perhaps, to the error which I made in defining the lower and posterior limit of the tumor.

Having thus determined the position of the tumor, the question arises whether it were cortical or subcortical. This question cannot be determined with certainty: but Seguin[8] gives certain indications for diagnosis. "In favor of a strictly cortical or epicortical lesion," he says, "are localized clonic spasm, epileptic attacks beginning by local spasm, followed by paralysis; early appearance of local cranial pain and tenderness; increased local cranial temperature. In favor of subcortical location of tumor: local or hemiparesis followed by spasm; predominance of tonic spasm; absence, small degree, or very late appearance of local headache and of tenderness to percussion; normal cranial temperature." From the absence of severe headache, local headache, and tenderness, from the presence of tonic spasm, and from the negative though unsatisfactory results of cranial thermometry, I believed that the growth was subcortical.

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[3] Bramwell. Intracranial Tumors, p. 85.

[4] Ferrier. Functions of the Brain, 2d ed., p. 323.

[5] Horsley. Remarks at Congress of American Physicians and Surgeons, September, 1888.

[6] Dana. Journal of Nervous and Mental Disease, October, 1888.

[7] Munk. Ueber die Functionen der Grosshirnrinde, p. 45.

[8] Seguin and Weir. American Journal of the Medical Sciences, July, August, September, 1888.

In every case of tumor where an operation is thought of, we must decide whether the growth is single or multiple. Here there were no symptoms which could not be explained by a single lesion. In every case, however, we have to run the risk of other lesions, so situated as to give rise to no symptoms. In the present case the nodule first removed was almost a distinct growth; and Seppilli[9] holds that large tubercles are formed by the fusion of several smaller growths.

(3) *The Diagnosis of the Nature of the Tumor.* — This is usually uncertain. The age, the absence of cachexia, and of signs of a neoplasm elsewhere, excluded carcinoma. The absence of any personal or family history of tuberculosis, and the apparent good condition, led me to think tubercle not very probable. The slow and steady increase in the symptoms and the absence of apoplectic seizures or signs of sudden variation in intracranial pressure excluded the more vascular forms of glioma; but I was disposed to think that there might be either a less vascular form of glioma or a sarcoma; and, with these, there was the danger of infiltration. The absence of any syphilitic history, and the general aspect of the case, the slow progress, and the absence of transitory and multiform symptoms, made me believe that the growth was not syphilitic; and therefore, although I could not tell whether a thorough trial of iodide had been made, I decided not to prescribe it, thinking it probably useless and fearing some debilitating effect. The result justified my decision.

2. *The Advisability of Operating in Cases of Cerebral Tumor.*

(1) *The History of the Operation, with a Summary of Reported Cases.* — The attempts to remove intracranial growths fall naturally into two groups. The first group is formed by the cases where the new growth has been dural or extra-dural, and has been the extension of a new growth outside the cranium. In these cases the external growth has proved the guide for trephining, and the surgeon, induced to operate by symptoms of intracranial pressure, has trephined over the extracranial growth, and has found the intracranial growth beneath. The second group is made up of the cases where there were no external manifestations of a new growth on the outer surface of the skull, — the new growth being diagnosticated and localized by the physician in accordance with the principles of cerebral localization. In these cases the principles of localization were the only clue, and the surgeon has trephined over the theoretical site of the tumor, finding it beneath his opening.

Cases of the first group I have been at no pains to collect. Such operations were done, naturally, before any attempt was made to operate on cases of the second class, and cases have been reported by Macewen,[10] Bergmann,[11] Barton,[12] and others. Some operations have been followed by recovery, others by death. Although such cases are of value in any study of brain surgery, they naturally do not interest the neurologist in the same way that cases of the second class do.

The first attempt to remove a cerebral tumor when the growth showed no outward signs of its existence was made on the 25th of November, 1884, by Godlee on a patient of Hughes Bennett's.[13] Since that time there have been fifteen cases in which a tumor has been removed, one where the tumor was found, but not removed, three where it was not found, and four where cysts were removed or evacuated, — twenty-three cases in all, which I shall summarize as briefly as possible:[14] —

TUMORS OF THE FRONTAL LOBE.

Durante. (*Lancet*, October 1, 1887.) Woman, forty. Left eye seemed lower than right. No smell. Poor memory. Sense of vacuity, with uncertain movements. Sad and melancholic. Trephined, May, 1884, over left frontal bone, above orbit. A lobular, fibro-cellular sarcoma, weighing over two ounces (70 grammes), removed from anterior fossa. Complete recovery.

TUMORS OF THE ROLANDIC REGION.

1. *Bennett and Godlee.* (*Med. Chir. Trans.*, lxviii. 243, 1885.) Man, twenty-eight. Three years before slight twitching of left side of face. Convulsions, with sensory aura in face, spasm beginning in face, extending to arm and leg. Paralysis left arm. Intolerable headache. Double optic neuritis. Reflexes increased; sensation normal. Hard glioma size of walnut removed from middle and upper thirds of ascending convolutions, November 25, 1884. Improved, but died in a month from meningitis (septic).

2. *Hirschfelder and Morse.* (*Pacific Med. and Surg. Jour.*, April, 1886.) Man, thirty-three. Dull headache for two years with vertigo. Left leg stiff and arm weaker. Convulsions. Twitching of left face; spasm of arm and face. Hemiparesis; contracture leg. Knee-jerks increased, especially on left. Slight anæsthesia of face. Optic neuritis. Two and a half cubic centimetres of a soft, infiltrating glioma removed from right ascending parietal convolution, February 15, 1886. Death eight days later from encephalitis (septic).

3. *Horsley.* (*British Medical Journal*, April 23d, 1887. Case 2 of table.) Man, twenty. Irritative lesion in thumb area; epileptic seizures at least once a week; spasms of thumb type constantly. Mind fairly active. Incomplete paralysis of arm. Tubercular tumor removed from thumb centre, June 21, 1886. Recovery, with fewer fits.

4. *Horsley.* (*Art. cit.*, Case 4 of table.) Man, thirty-eight. Irritative and destructive lesion in brain. Complete left hemiplegia. Coma for ten days. Epileptiform seizures, beginning in left shoulder. Four and a half ounces of infiltrating glioma removed September 23, 1886. Recovery. Much improved in paralysis. Mind clear. No fits. Symptoms recurred three months later. Death six months after operation.

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[9] Seppilli. Il sistema nervoso centrale, ii. 415.

[10] Macewen. Lancet, August 11, 1888.

[11] Bergmann. Archiv für klinische Chirurgie, xxxvi. 759, 1887.

[12] Barton. Annals of Surgery, January, 1889.

[13] Durante's case was the earliest cited, but external manifestations were apparently the guide, so that I was almost inclined to reject it, as I did the cases of Bergmann, Macewen, and Barton. Park puts Macewen's case earliest of all, in 1883, but Macewen himself puts it after Bennett and Godlee's. Where the dates of operation were known, I have arranged the cases chronologically.

[14] This list is believed to be complete, being based on an investigation made at the Library of the Surgeon-general's office at Washington.

5. *Horsley.* (*Art. cit.*, Case 9 of table.) Man, thirty-seven. Irritative and destructive lesion. Right hemiplegia. Epileptic seizures, beginning in right forefinger. Constant headache. Complete paralysis of arm, incomplete of leg. Slight defect in speech. Tumor removed, December 7, 1886, weighing four and a quarter ounces. Recovery. Paralysis unchanged. No headaches or fits.

6. *Seguin and Weir.* (*American Journal of the Medical Sciences*, July to September, 1888.) Man thirty-nine. Headache, spasm of right cheek for six years. Three years ago convulsion; twitching of right arm, hand, and face. Face and arm weaker. Slight tactile anæsthesia hand. Muscular sense, cranial temperature, and fundus oculi normal. Knee-jerk greater on right. Sarcoma, size of end of finger, removed from deep down below precentral sulcus, November 17, 1887. Recovery. Paresis and anæsthesia of face and arm persist. Slight aphasia and agraphia.

7. *Macewen.* (*Lancet*, August 11, 1888. Case 9.) Girl, seven. Pain and spasm in right great toe, leading to convulsions. Paresis right leg. Sensation unimpaired. Tubercular tumor, size of hazelnut removed from left ascending parietal at top. Few small nodules in meninges. Recovery. No fits.

8. *Keen.* (*American Journal of the Medical Sciences*, October, November, 1888.) Man, twenty-six. Injury to head at age of three. Scars on head. Intense headache and epileptic seizures for three years. Paralysis of right arm, leg, and face. Pain on pressure. Right eye, pupil dilated, vision poor. Aphasia. Loss of vision. Gastric aura. Paresis right internus, left inferior, and superior recti. Left homonymous hemianopsia. Post-neuritic optic atrophy. Dura adherent to skull. Fibroma, weighing over three ounces, removed, December 15, 1887, from ascending frontal, chiefly in lower two-thirds, extending into frontal convolutions and ascending parietal. Recovery.

9. *Ballet, Gelineau and Péan.* (*Gazette des hôpitaux*, No. 22, February 21, 1889.) Man, twenty-eight. Epileptic attacks every week or ten days for six years, finally status epilepticus with temperature of 40° C. Attacks begin with painful spasm of right great toe and rigidity of leg, followed by tonic and clonic spasms of right arm and face. Paresis of leg in interval. Trephined December 7, 1888, over upper part of left ascending convolutions and fibro-lipoma of pia removed. Recovery, and no occurrence of attacks to date.

10. *Knapp and Bradford.* Case reported December 28, 1888.

TUMOR OF THE OCCIPITAL LOBE.

1. *Birdsall and Weir.* (*Medical News*, April 16, 1887.) Man, forty-two. Unsteady gait. Vomiting. Diplopia. Numbness of right half of body. Headache. Walks towards right. Left lateral hemianopsia. Fundus normal; later neuritis. Some awkwardness of left side. Sarcoma, weighing five and a quarter ounces enucleated from right occipital lobe, March 9, 1887. Death in eleven hours from hæmorrhage.

TUMORS OF THE CEREBELLUM.

1. *May.* (*Lancet*, April 16, 1887.) Boy, seven. Frontal headache with vomiting. Failure of vision. optic neuritis; eyes turned to left. Staggering gait, backwards and to the left. Nystagmus. No knee-jerk. Emaciated and feeble. Tubercular growth, size of pigeon's egg, an inch below surface of cerebellum, removed July 19, 1886. Death in a few hours from shock.

2. *Horsley.* (*Art. cit.*, Case 10 of table.) Man, eighteen. Headache, vomiting, optic neuritis, weakness of all the limbs. Head and eyes turned to right. Tubercular tumor, weighing seven drachms, removed from right lobe of cerebellum December 17, 1886. Death in nineteen hours. Chronic tuberculosis of viscera.

3. *Suckling.* (*Lancet*, October 1, 1887.) Girl, twelve. Headache, vomiting; dim vision: right hemiparesis: tremor of right arm; vertigo; staggering gait, with tendency to fall forwards: optic neuritis; nystagmus: left facial paresis with reaction of degeneration; diminished knee-jerks. Part of a soft gliomatous mass (which was infiltrated, involving the whole left lobe and part of the middle lobe) removed from the cerebellum March, 1887. Death in a few hours from shock.

To these fifteen cases, in which the tumor was found and removed, we must add four other cases in which either the tumor could not be removed, or was not found at the place trephined.

TUMOR WHICH COULD NOT BE REMOVED.

1. *Ross and Heath.* (*Lancet*, April 7, 1888.) Man, twenty. Headache; convulsions; left hemiparesis; optic atrophy; left side of face and left arm convulsed; tender spot over base of right ascending frontal. Trephined October 13, 1887, over tender spot, and large lobulated tumor found, adherent to anterior fossa. Not removed. Recovery from operation. Symptoms unchanged, except some relief from removal of pressure.

TUMORS NOT FOUND AT PART TREPHINED.

1. *Amidon and Weir.* (*Annals of Surgery*, June, 1887.) Woman, twenty-six. Sarcoma removed from neck; brachial plexus injured, causing paralysis of left arm; cramps in left leg, leg weaker; clonic spasm of leg; left hand numb, with cramps; frontal headache; right arm weaker: knee-jerk exaggerated left; left optic neuritis. Trephined October 11, 1886, over upper part of fissure of Rolando. Piece of cortex, size of an egg, removed, which was much congested, but otherwise healthy. Headache and spasm ceased; paralysis improved; three weeks later right side got paretic. Death ten weeks after operation. Sarcoma in cerebellum, extending down cord.

2 *Dana and Pilcher.* (*Medical Record*, February 9, 1889, and personal communication from Dr. Dana.) Man, injury to skull. Two years later epileptic attacks and mental impairment. No localizing symptoms. Trephined over seat of injury, over angular gyrus. Brain projected, and a piece was removed. No tumor found. Death in thirty-eight hours, from respiratory failure. Glioma in anterior half of left hemisphere, extending into corpus callosum, which could not have been removed.

3. *Putnam and Beach*, not yet reported.

Finally, there are certain cases of intra-cerebral cysts, with symptoms more or less closely allied to tumor, where the skull has been trephined and the cyst evacuated or removed. I take no note of dural cysts — traumatic cysts following depressed fractures of the skull, or hæmorrhagic cysts from meningeal hæmorrhage; and, moreover, I exclude cases where the skull was trephined to evacuate a supposed abscess, and, at the autopsy, a tumor was found, as in Sands[15] and Sciammana's cases.[16]

CEREBRAL CYSTS.

1. *Markoe.* (*Medical News,* November 5, 1887.) Man, twenty-five. Fall, striking head, followed by convulsion; recovery. Eight years later similar fall; convulsions recurred; depression left parietal; dull pain; convulsions, with opisthotonos. Trephined over depression January 27, 1887. Cyst found, containing mass, an inch in diameter, which proved to be brain-substance. Recovery.

2. *Fitzgerald.* (Cited from the *Melbourne Age,* an ordinary newspaper, by Senn, in *Annual of the Medical Sciences,* 1888, vol. ii.) Girl, sixteen. Loss of sight right eye; partial paralysis; convulsions. Left temple trephined January, 1887. Trocar thrust into brain, and fluid of an echinococcus cyst withdrawn. Recovery up to time of report.

3. *G. M. Hammond and Roberts* (*Boston Medical and Surgical Journal,* May 5, 1887.) Woman, twenty-nine. Pain over right ear; convulsions limited to left side; left facial paralysis, increasing to hemiplegia; agonizing headache; sensation good; reflexes exaggerated; optic neuritis. Trephined March 30, 1887. Hypodermic needle inserted, with no results. Death from shock in twenty-one hours. Three cysts close together, involving face, arm, and leg centres.

4. *Macewen.* (*Art. cit.,* Case 8.) Man, twenty-two. Eight years before injury to head; paresis right arm; frequent convulsions of tongue, right face, and platysma. Cyst, size of filbert, involving cortex and subjacent white matter, removed from base of left ascending frontal. Recovery. No fits; paralysis improved.

To sum up, therefore, we have the following results: —

Situation.	No. of Cases.	Recovered.	Died.
Frontal lobe	1	1	0
Rolando region	10	7	3 (2 septic, 1 shock.)
Occipital lobe	1	0	1 (1 hæmorrhage.)
Cerebellum	3	0	3 (3 shock.)
Total tumors	15	8	7
Exploratory trephining,	4	2	2 (1 respiratory failure, 1 shock.)
Cysts	4	3	1 (1 shock.)
	23	13	10

Classifying the fifteen tumors actually removed by the nature of the growth, we have the following results: —

Nature of Growth.	No. of Cases.	Recovered.	Died.
Sarcoma	3	2	1 (1 occipital.)
Glioma	4	1	3 (2 Rolandic, 1 cerebellar.)
Tubercle	5	2	3 (1 Rolandic, 2 cerebellar.)
Fibroma	1	1	0
Fibroma-lipoma	1	1	0
Not stated	1	1	0
	15	8	7

(2.) *The advisability of operating with reference to the accessible regions of the brain, and the relative frequency of tumors in these regions.*—The hopeless prognosis of cerebral tumors renders it advisable, in every case of cortical tumor which can be localized, to attempt removal by operative measures as soon as possible. As a rule, of course, it is well first to give the patient the benefit of the doubt and of iodide, — and iodide has not been given until the dose has reached, at least, three drachms a day, and better, six. After a fair trial of iodide there should be no further delay in operating, for not only does each day's delay add to the patient's weakness, but in every case of tumor there is the danger of sudden coma and death. The fatal result in the present case was due, in part at least, to the poor condition of the patient, and the same may be said of several of the cases cited above. Had the operation been undertaken, as advised, in April, 1887, the chances would have been much greater.

It is a self-evident proposition that those tumors alone are accessible to operation which are near the surface of the brain. It is not probable that any advance in cerebral surgery can make it possible to cut into the optic thalamus, the corpora quadrigemina, or the pons with safety. The cases thus far operated on, however, indicate that it is possible to remove cortical tumors, and even tolerably deep-seated subcortical tumors, from any part of the external surface of the cerebrum, especially in the Rolandic region, and the percentage of success thus far obtained proves that the operation is a justifiable one. Of course, tumors in the convolutions at the base of the brain, and on the median aspect of the hemispheres, must remain inaccessible.

Although the external aspect of the cerebrum is accessible to the surgeon, it unfortunately happens that our present knowledge of cerebral localization does not enable us to determine the situation of neoplasms in every part of the cortex. At present we can diagnosticate with accuracy lesions involving the ascending convolutions, and the parts of the frontal and parietal convolutions immediately adjacent, lesions of the posterior part of the first temporo-sphenoidal convolution on the left, lesions of the occipital lobes involving the cuneus, and, perhaps, lesions in the inferior parietal convolution and the angula gyrus, — rather a limited portion of the region accessible.

Unfortunately it only too often happens that tumors are situated, not in these regions, but in the inaccessible parts. Out of four hundred and eighty-five cases collected by Bernhardt,[17] only fifty-seven were in the cortex, and on examining the summaries of the reports of these cases, it seems as if twenty-seven might have been localized. Out of these twenty-seven cases, in three there were growths elsewhere; in two, there was also tubercular meningitis, and in one the growth was a cancer, leaving twenty-one possible cases. In one hundred and twenty-four cases of tumors of the white substance of the cerebrum I find fifteen more which might probably have been localized, but in one of these, again, the growth was a cancer, and in one the tumors were multiple, leaving thirteen cases. Thus, out of four hundred and eighty-five cases, thirty-four, that is, 7 per cent., might possibly have been localized successfully, and have been more or less accessible to the knife, but it is not easy to say, from the tables of Bernhardt, just how deeply seated the cases in the second category were. The estimate that I have made errs rather through being too liberal. The examination of Mills and Lloyd's [18] table of one hundred cases is rather more favorable, for ten of these seem to have been cases that could have been operated on.

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[15] Sands. Medical News, April 26, 1883.

[16] Sciammana. Bollettino della R. Acad. med. di Roma, 1885-6, xi. 75.

[17] Bernhardt. Beiträge zur Symptomatologie und Diagnostik der Hirngeschwülskte.

Hale White,[19] in an elaborate analysis of one hundred autopsies of cases of tumor of the brain at Guy's Hospital, thinks that, including cerebellar growths, ten might well have been operated on, but six of these were cerebellar. In four more, one of which was cerebellar, an operation was possible. On the one hand, however, he excludes very large tumors which can, perhaps, be successfully removed, and also infiltrated growths, which, as is shown by Horsley's case (Case 4, above), may sometimes be removed with temporary benefit; but, on the other hand, in the absence of clinical histories, we do not know in how many of these cases symptoms existed which would permit of localization.

Starr [20] has recently made an admirable study of three hundred cases of tumor in children, with special reference to the question of surgical interference. Out of these three hundred cases he finds that fifty-six involved the cortex or the centrum ovale; of these he found that forty cases gave sufficient data to draw some conclusion from. Of these forty cases an operation was indicated in nineteen, but it would have succeeded in only sixteen (5 per cent.), two being infiltrated, and one multiple. In adults, however, Starr finds that cortical and subcortical tumors are relatively more frequent than in children, in whom, on the contrary, cerebellar growths are commoner.

The chance for operative treatment of cerebral tumor, therefore, is not great, the percentage of cases situated in accessible regions, and giving rise to definite focal symptoms, varying from 5 to 7 per cent., if we exclude tumors of the cerebellum. It seems safe to say that, as a rule, in 7 per cent. of the cases the tumor can be localized and removed, and of these about one-half recover.

It is still a question whether the surgeon is justified in attempting to remove cerebellar growths. All these cases where removal has been attempted have died of shock, but two of the cases were *in extremis*. Starr concludes that in about one-third of the cases the surgeon can reach the tumor; that the operation is essentially exploratory, and is much more dangerous to life, and in estimating his percentage of cases, as quoted above, he does not include cerebellar growths. We might naturally hesitate, therefore, before operating, yet no definite decision can be reached until the operation has been performed on patients who are in good condition at the time. One thing must be said as to cerebellar tumors: they are more common in children, and are very apt to be tubercular. Such growths may become encapsulated, and remain quiescent for a long time. I saw a little boy, two years ago, who had all the symptoms of a cerebellar tumor, which was probably tubercular, and he is still alive and better than he was when I first saw him. In such a case an operation might deprive the patient of several years of a tolerably comfortable existence.

If we add cerebellar growths, our percentage of operable cases becomes larger. Hale White gives seven cerebellar tumors which might have been operated on, out of a total of one hundred. Starr finds ninety-six cerebellar tumors out of three hundred in children, about one-third of which could have been removed. Mills and Lloyd give nine cases out of one hundred, four of which could have been localized, and three removed. Bernhardt gives ninety out of four hundred and eighty-five, of which forty-one, making a very liberal estimate, might have been localized, and nineteen removed. Thus, about 3 or 4 per cent. of all cases are cerebellar growths which can be localized and removed. Adding these, then, the total percentage of removable tumors is from 8 to 15 per cent. at the largest, and about half survive the operation.

We see, therefore, the operation is advisable in tumors situated in the cortex cerebri, or just below it, provided they give rise to symptoms which enable us to localize them, and we must also bear in mind that the local diagnosis is by no means absolutely certain. The percentage of cases which can be localized and removed is and necessarily must remain very small, probably below 7 per cent. The advisability of removing cerebellar growths is still doubtful.

(3) *The Advisability of operating with reference to the Nature of the Tumor.* — As I have just said, the diagnosis of the nature of an intra-cerebral growth can seldom be made with even a probability of success, hence the contraindications can seldom be of value. It is obviously useless to attempt to remove carcinomata, for they are almost always secondary in the brain. All agree that gliomata and sarcomata should be removed, although the former are very often infiltrated, — a fact which never can be foretold. Even in such cases an operation may benefit, as Horsley has shown. In regard to tubercles and gummata, there has been considerable controversy. Gummata sometimes yield to anti-syphilitic treatment, although most men of much experience know that this is not always the case. Seguin points out the tendency of gummata to persist as inert tumors after most thorough specific treatment. Such he believes, in spite of the dicta of Hale White and Bergmann, should, after the failure of mercury and iodide, be removed.

Wood [21] has lately argued that iodide will remove the gumma, but a cicatrix of connective tissue may be left behind, keeping up the symptoms. Any operation to remove the cicatrix will simply convert a medical cicatrix into a surgical cicatrix, and do no good. It seems a question still whether iodide will entirely remove the gummatous deposit, and the result of the removal of traumatic cicatrices in epilepsy certainly shows that the scar of an incision into the cortex, a surgical cicatrix, does not give rise to any symptoms to be compared with those arising from the dense connective-tissue formations that follow injuries or absorbed gummata.

Bergmann takes equally strong ground against operating on tubercles, for the reason that the operation cannot be complete, — a recurrence will follow, the discrimination of the morbid growth over the meninges will give rise to tubercular meningitis, and finally cerebral tubercle is often merely one local manifestation of a general infection. Bergmann's objections might also be raised against the excision of tubercular glands or tubercular joints, and they lose weight when we recall that two of the successful cases in the above list were tubercles, Macewen's being especially unfavorable from the presence of nodules in the pia. Of course, if there be general tuberculosis, no operation is advisable. In the present case, with a growth so thoroughly encapsulated, and with the surrounding tissue apparently so healthy, the risk of local infection seems slight. Carcinomata, therefore, are the only forms of tumor which contraindicate operation.

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[18] Mills and Lloyd. Pepper's System of Medicine, v. 1028.
[19] W. Hale White. Guy's Hospital Reports, xliii. 117, 1885.
[20] Starr. Medical News, January 12, 1889.
[21] Wood. Therapeutic Gazette, December, 1888.

Senn[22] is disposed to believe that optic neuritis is a contraindication for the operation. With it, of course, the patient, if he recover, will probably have poor vision, but it is not of prognostic value as regards recovery from the operation. Amidon's, Godlee's, and Hirschfelder's patients had it, and Keen's patient had had it and had the subsequent atrophy.

3. *Remarks on Cranio-Cerebral Topography.*

Hare[23] has stated that if we attempt to mark out the position of the cerebral fissures on the skull, by making fixed measurements from imaginary base-lines or bony prominences at the base of the skull, we are liable to error in extraordinary cases; although, as a rule, such measurements may be fairly accurate. I therefore adopted the Thane-Horsley method, as modified by Hare, using a cyrtometer made by Leach and Greene, under the directions of Dr. J. C. Warren. From curiosity I also marked out the fissures by Broca's method, as given by Seguin,[24] and by Reid's method, as given by Bastian,[25] both of which are open to Hare's objection; but the latter method gives rules for marking out more of the lesser sulci than Horsley gives.[26] Dana's exhaustive paper[27] had not then appeared.

The fissures of Sylvius and Rolando, and the two frontal and the precentral sulci, were marked out on the right side of the head. Reid's method coincided pretty closely with Horsley's; but Broca's line for the fissure of Rolando began almost an inch farther forward, and ran off from the median line at a much greater angle, crossing the line laid out by the cyrtometer.

On making certain measurements on a skull while drawing one of the illustrations to this paper, I found that the actual bregma was about three-quarters of an inch in front of the place where it ought to be by Broca's method. I therefore, with the help of Dr. J. A. Jeffries, measured, as accurately as possible, fifty skulls in the Warren Museum. These skulls were of different nationalities: 8 Hindoo, 7 African, 1 Chinese, and 34 American or European. The measurements gave the following results: —

The line fell ¼ inch behind the bregma in	2
" " on the bregma in	21
" " ⅛ to ¼ inch in front of the bregma in	5
" " ⅜ to ½ " " " "	17
" " ⅝ to ¾ " " " "	4
" " ⅞ " " " "	1
	50

These results led me to test Broca's method on the living subject; and I therefore applied a flexible square, according to the regular method as given by Dana, on twenty-five adult male patients at the Boston City Hospital, on whom I could readily feel the bregma. The results were still more at variance with the theory.

The line fell ½ inch behind the bregma in	2
" " " on the bregma in	8
" " " ⅛ to ¼ inch in front of the bregma in	2
" " " ⅜ to ½ " " " "	5
" " " ¾ to 1 " " " "	7
" " " 1½ inches " " "	1
	25

Broca's method for finding the bregma being thus shown to be utterly inaccurate, it becomes still more untrustworthy when we remember that the top of the fissure of Rolando is not fifty millimetres behind it; but, as Dana has shown, it may be anywhere between forty and sixty millimetres. In large growths, as in Horsley's ninth case (Case 5, above), or in Keen's case, if we open the skull by any rule of thumb method, we should be likely to come down upon the tumor; but when we wish to be accurate, we must discard Broca's method. The fullest and most accurate methods are the modifications of the Thane-Horsley method, as given by Dana.

(To be concluded.)

THE LIE OF THE FŒTUS.[1]

BY BENJAMIN E. COTTING, M.D., ETC.,

An original, now honorary, member of the Society.

At one of our meetings, years ago, it came out by chance that some of our number still gave adhesion to old hypotheses relative to the situation of the fœtus in the uterus — its *lie*, as now called.

This, so unexpected, impelled me to prepare and read to the Society the paper that was published in the Boston Medical and Surgical Journal, April 7, 1870.

That paper set forth the whole matter as one in natural history and to be studied as such, — a part of a *plan* (or evolution, which is only a plan beginning a little farther back), and thus, in fact, a *vital* procedure, not dependent at all, for origin, progress, or fulfilment, on external or mechanical interferences.

That paper further indicated a similar plan, in this regard, in animals whose horizontal posture and other physical peculiarities rendered untenable the theories of culbute, gravity, instinctive impulse, reflex actions, mental or conscious self-adjustments, and the like, — all which rest chiefly upon assumptions of greater or less absurdity.

As anticipated, that paper effected little or nothing; it was never quoted or alluded to; it was not sensational. Meantime theories ceased not to abound; some on very fanciful foundations. While facts must be sought for in patience, and be verified through much weariness of spirit, it does not appear very difficult to construct a pretentious, not to say a plausible, theory from ambiguous or insignificant materials. The latest we have seen (only a few months old) makes the fœtus "tumble" into the head-downwards posture, and to be kept there by and through continued upward "kickings" against the uterine walls. As usual, there is (in twenty-five octavo pages) no lack of exposition and of confident reasoning in support of this theory, — for fœtuses sometimes *do* kick, or at least their mothers say so. (Of course, all antedated or conflicting theories are refuted by this new one.)

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[22] Senn. Universal Annual of the Medical Sciences, ii., 1888.
[23] In Bramwell. *Op. cit.*, p. 254.
[24] Seguin. Pepper's System of Medicine, v. 93.
[25] Bastian. Paralyses: Cerebral, Bulbar, and Spinal, p. 19.
[26] Horsley. American Journal of the Medical Sciences, April, 1887.
[27] Dana. Medical Record, January 12, 1889.

[1] Read before the Obstetric Society of Boston, February 9, 1889

Since the last meeting of our Society, the annual package of new publications from the (English) New Sydenham Society has reached this country. In it came the text-book of Midwifery of the late Prof. Spiegelberg, in a recent second edition revised and edited by his successor, Prof. Weimer, translated for the Sydenham Society by Dr. Hurry, and issued from the press not many weeks ago. This, therefore, may be considered a summary of the latest science in the department of which it treats.

These authorities,[2] if understood aright, affirm that the *attitude* (that is to say, "the situation of the trunk, head, and limbs of the fœtus relative to each other") begins normal from the start;[3] continues normal, through inherent tendency, in the embryo and young fœtus, as well as throughout its later course. is not the result of pressure, and is "never to be thought of as in any way enforced by the limited accommodations in uterine cavity."

Moreover, they deem any causes supposed capable of bringing on temporary alterations of *attitude* to be adequate also of themselves to restore the original normal state. They say that "this attitude, with the advance of pregnancy, becomes more and more stable;" and they italicize their conclusion that "*persistent marked alterations from the normal attitude only occur in dead fœtuses.*"

As for the *lie* of the fœtus ("the relation of its longitudinal axis to that of the uterine cavity," called the *longitudinal lie* when the two axes coincide) their words are: "During the first months there is no definite lie, since the embryo is suspended by the umbilical cord, and is still very small in comparison to the cavity in which it is placed, yet even in the first half of pregnancy the region of the shoulders and the head are usually found to be directed downwards." And they add also that "the fœtus may have either its head or breech lowest while in the longitudinal lie; the former, called the *cephalic lie*, is the commonest both during pregnancy and at its termination (in over 96 per cent. of all mature fœtuses)"— the longitudinal lie amounting, in all, to 99 per cent.

With our authors, "by *position* of the fœtus is meant the direction in which a definite fœtal surface (the dorsal is the one usually referred to) looks in reference to the side of the uterus"; and (after noting irregularities attributable, they think, to gravity and rotation of the uterus in connection with the mother's posture) they state that "such an alteration in the posture of the mother is the usual cause of the *change in position of the fœtus*; which change," they aver in concluding the sentence, "occurs, even in advanced state of labor, more frequently than the change of lie, especially with cranial positions."

Thus we have in the new volume now before us, under the three heads of *attitude, lie*, and *position*, didactic statements which to these eminent teachers seem proven or trustworthy; and which generally confirm, or in no wise differ from, the doctrines of our former paper.

To the dicta we have thus epitomized, are added also a few comments on the "numerous hypotheses" that of old or latterly "have been suggested" or contended for "to explain why the *cephalic* lie is so frequent;" and also on the assumptions upon which these hypotheses are based. With partial recognition of some of the arguments, but without apparent acceptance of any of the hypotheses, a few are kindly detained a little from the fate that ultimately awaits them all; and the comments concede that "it appears as if *the cephalic lie*, which is so favorable to the successful termination of labor, were *the result of a general natural law*." A perfectly justifiable inference, certainly; it always has been our contention; we italicize it.

In our paper no attempt was made to explain the *why* and *wherefore*. That is as yet beyond mortal ken. Ludicrous as the satirist would have it appear, the answer that a drug produces sleep because it has in it the soporific power, is the best that can be given. Science cannot now go further, and it were well were the limitation more frequently heeded. We merely tried, in a very restricted way, to call attention to some points in the natural history of the fœtus, and we are very glad to receive from such a source the support of these recent and substantial observations.

Hypotheses often seem to arise, directly or indirectly, from exceptional cases. As professional men, we have much to do with nature's exceptional cases; and we sometimes seem more inclined to rely upon the exceptions than upon the rule itself. But nature, indeed, seldom if ever has a rule without exceptions, — as if to show that any rule could have been made differently. For instance, we might perhaps think the pelvic route of the fœtus an absolutely necessary arrangement, were there not species of animals having the uterine outlet not through the pelvis but in front of the os pubis.

It is evident from the foregoing sketch that descriptions of the fœtus up to term are gradually becoming less speculative; one word now as to its onward course after it has reached that stage in its existence.

That when the mother is in a naturally normal posture, dorsal or semi-recumbent perchance, swayed neither to right nor left; and when, at the same time, the uterus is not deflected from without, by distortion or constraint (be the assigned cause of distortion or constraint gravity or anything else) — the head will then, at term, normally approach the brim, and normally enter it in the *longitudinal cephalic lie*, central and vertical, in median antero-posterior plane (the mother and the child being naturally shaped therein to fit each other); and then that after by direct or, if one prefers, by so-called "spiral," or "twisted," or "corkscrew" progress, it has passed through the pelvic way, it will make its exit normally in the aforesaid plane (with occipital succedaneum central, if any) — I am for myself sufficiently convinced, having tested the matter many times (scores) by adequate marks and scratches on the fœtal scalp, and by other proofs.[4] Such is the procedure when the normal is uninterfered with; and often,—for nature, while it has exceptional cases, is not apt to take to devious ways when the direct are as good or better, — a verity manifestly as hard to realize now as ever. At present the *oblique* is the thing to be sought for, and is as readily found as the culbute in former times. Many incline to it; "it has eminent authorities"; it must have its day.

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[2] It is presumable that the author, editor, consultant, and translator are in accord unless otherwise stated in the work itself.

[3] They might have added that the *attitude* (truly vital) is from the first the same in extra-uterine conceptions, and that the uterus also in such cases begins at once to enlarge as if it contained the ovum and needed to make ready for its progress and growth.

But it is to be hoped that some of our number may live to see undisturbed processes of nature more thoroughly demonstrated; for nature cannot always be swerved from *rectitude,* even in the labors of childbirth.

Of a truth the hypotheses we have been writhing under so long have also had in times past their "eminent authorities" without number to sustain them; and possibly, may still have here and there a notable adherent. Nowadays, however, nature's facts, by whomsoever brought to light, are more and more relied upon, and will at length prevail. Even under favorable mention old hypotheses are now "modified in important points," or are cited with lethific qualifications. Apparently they cannot hold together much longer. Indeed many of them of late seem to have been greatly frittered away. The more recent and the new will follow them in due time. Little pin-thrusts like ours may not be noticed, but even such, often repeated, may assist in the disintegration.

Within the knowledge of some of us, a colony of ants worked its way under the corner of a lofty ancient column at Athens, and so weakened the foundations that a moderate gale overthrew it and left it in ruins; in like manner may many minute perforations so riddle the crumbling forms of these empty hypotheses that some day a breath of scientific truth may readily upset and utterly demolish them.

THE USE OF SALICYLIC ACID IN CHRONIC TUBERCULOUS JOINT DISEASE.

BY ROBERT W. LOVETT, M.D.,

Assistant Out-Patient Surgeon to the Children's Hospital.

The usefulness of salicylic acid in chronic joint disease was first called to the attention of the writer by Dr. H. H. A. Beach in the summer of 1887. The case upon which the observation was made was a boy some twelve years old who had been suffering for some months from an affection of the left knee which had been diagnosticated as ostitis by one of the leading orthopedic surgeons of America, and the boy presented every diagnostic sign of that affection. He had suffered from chronic articular rheumatism of the ankles some years previously, and inasmuch as he had then been much helped by salicylate of soda, Dr. Beach did not apply an apparatus to the affected limb, as advised by the surgeon referred to, but allowed the boy to go about with crutches, while he was given salicylate of soda in moderate doses three times daily. During the summer, he was under the care of the writer, who continued the same treatment, and the knee steadily decreased in size until in six weeks it had diminished one-half an inch in circumference, while all the symptoms steadily improved. The improvement continued, and the patient is now walking about apparently well for many months. Since that time the writer has had an opportunity to observe the beneficial action of salicylic acid in a very large number of cases of chronic joint disease, not substituting medicinal for mechanical treatment, but using the drug as an adjuvant to mechanical methods. The use of the drug was begun as an experiment on cases under careful observation, and experience has led to its continually increasing use, but not until lately was it found that the drug had a remarkable influence in controlling night cries and sensitive conditions of the joints. The action of the drug administered in sufficiently large doses to children with painful Pott's disease, hip disease, or tumor albus is in most cases to render a sensitive joint much less sensitive and especially to control spasmodic pain, so common in the form of "night cries." There is no need of salicylate of soda apparently in the routine treatment of cases of hip disease where pain and sensitiveness are absent and only muscular fixation is the chief symptom, but if night cries are present or the joint is sensitive to manipulation the administration of salicylic acid becomes an invaluable adjuvant to proper mechanical treatment.

The relation of individual cases is always tiresome, but it seems the only available way to present this subject, as the statistical method is not applicable in speaking of any such subject as the special action of a drug. The following cases, presented in the merest outline, are random cases from hospital and private practice, chosen merely as being representative of the conditions in which the drug is likely to be of benefit. They are not exceptional cases in any way.

CASES.

I. Katie M., four years old. Typical hip disease of the left side. The child had been under treatment by the long traction splint for some eight months. In December, 1888, owing to some unknown cause the leg became very sensitive and was flexed and abducted. The condition became so marked that she was put to bed with a weight of three pounds pulling upon the leg, but no relief came and night cries came on. The weight was increased to five and then eight pounds, without controlling the cries. Through the day the child was comfortable, but early in the evening she cried out every night very many times and mechanical means were tried in vain to control the cries. Finally the mother came to my office and told me that the previous night the child had cried out oftener than ever before and very loudly, so much so that she had disturbed the neighbors. The child was given ten grains of salicylate of soda three times a day. The medicine was begun one Monday afternoon and Monday night she cried out as much as ever, but Tuesday night she screamed very little and Wednesday not at all, and the night cries have never returned, although the salicylate was only continued for three weeks. The child's present condition is better than it has been since she has been under my care.

II. Fred D., twelve years old. First came under treatment March, 1888, in the early stage of hip disease. It was a mild and slow case, not marked by pain or sensitiveness and he did very well under the use of a long traction splint. Last April he fell down stairs at school and went home in much pain. His condition became worse. His mother removed his splint, and some days later when I saw him at home his joint was in that acutely sensitive condition sometimes seen, in which the muscles continually jerk and pull the head of the bone against the acetabulum. Every jar was exquisitely painful, and he screamed with pain continually. I applied a bed extension to produce traction with a seven-pound weight, and he became much easier. But his cries at night continued and a week later the joint was still so sensitive as to make it impossible to move him, and his night cries were distressing. He was given ten grains of salicylate of soda every three hours and in twenty-four hours the night cries had ceased and the condition of the joint improved so that he was soon able to be up and about within a very few days. His present condition is most satisfactory.

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[4] If the shoulders and the body were allowed to follow in the same direction and plane (the normal way) would there not be fewer perinæum ruptures than now occur with some practisers according to their own statements?

Three cases were under close observation in the wards of the Children's Hospital, and the action of the salicylate of soda could be accurately observed.

III. Joseph R., seven years old, service of Dr. E. H. Bradford. Very acute hip disease. This boy had been much neglected at home and was admitted to the hospital with an abscess of the thigh and an exquisitely sensitive joint. He cried out continually through the night and every movement was painful. Every evening since his admission, the record states, he had cried out very sharply, not only early in the evening but at intervals through the night. On January 21st, at my request, he was given eight grains of salicylate of soda and slept soundly till 10.30, when he was given a second dose and slept till 2.30 A.M., after which he cried out six times. January 22nd no salicylate was given early in the evening and he cried out continually until 1 A.M., when a ten-grain dose of salicylate was given and he slept quietly for the rest of the night. A similar experience was noted on several subsequent nights, and he was finally put upon ten-grain doses of salicylate of soda four times daily and the night cries practically disappeared and are only heard very rarely. The condition of the joint has steadily improved.

IV. Fred G., eight years old. Acute hip disease. A patient in the service of Dr. A. T. Cabot. For one or two weeks after admission this patient cried out regularly five or six times each night. Salicylate of soda was given in ten-grain doses every four hours. Since the first night that the salicylate was given, now some four weeks, the boy has not cried even once. The medicine is still continued.

V. Sarah W., eight years old. Acute hip disease and tumor albus. Service of Dr. Cabot. This child, during a stay of several weeks in the hospital, had suffered very much from night cries, for which every mechanical resource had been tried in vain, and finally the pain in the hip became so continuous and severe that she was given two teaspoonfuls of paregoric each night and in about two hours the pain was ordinarily relieved. On the night of January 21st no opium was given, but in place of it eight grains of salicylate of soda, and in forty minutes the pain was much relieved and in one hour it had disappeared. For several nights when she cried the salicylate was given, always with relief more complete than from the paregoric. January 26th the salicylate was withheld experimentally, and through the evening she cried very much with pain.

Finally she was given ten grains of salicylate four times daily, and all acute symptoms, and especially the evening pains, have disappeared, although the hip is still very sensitive.

It seems proper to add that the mechanical conditions were constant while the experiments were being tried with the salicylate of soda. In each of these cases every mechanical means had been tried to control the pain before the salicylate was administered.

VI. James H., six years old. This boy with hip disease was a case attending the out-patient department of the Children's Hospital, who had been much neglected by his parents and for the first fifteen months of his disease they would not bring him for treatment. When he finally came his joint was in such an acutely sensitive condition that out-patient treatment was impossible and he was admitted to the Good Samaritan Hospital. Rest in bed and continuous traction failed to give speedy relief, but he grew slowly better and was allowed to go home. A relapse at once followed and he came back only to be confined in bed again. This time his joint did not improve very much and he cried out at night more than ever. Finally salicylate of soda was given in the usual doses, but no relief of any consequence followed. After several months I trephined through the trochanter into the head of the bone in the method described by Mr. Stokes, and evacuated a cheesy focus. The night cries stopped for three weeks but began again in a modified form. Salicylate of soda was again tried, with the effect upon the night cries which is noted below: —

Jan.	20	21	22	23	24	25	26	27
Night cries	1	2	2	2	1	0	0	0

Jan.	28	29	30	31.	Feb.	1	2	3
Night cries	0	0	0	0		0	2	0

Salicylate of soda begun Jan. 23; salicylate omitted Jan 31.

This record is copied from that kept by a night nurse, who was constantly in the room with the child.

VII. Dora B., eleven. Dorsal Pott's disease for one year. Some months ago a Taylor back brace was applied at the hospital and much relief was afforded, and the child, having every care at home, grew better and was very comfortable. Late in the fall of 1888 the child grew pale and began to have pain in walking, especially at any sudden jar, which hurt her back very much. She had vomiting and occasional supraorbital neuralgia, and violent attacks of pain in her side and chest. The brace fitted perfectly and no cause for her poor condition was assignable. Her condition became worse and she had severe spasmodic pain in the back. Salicylate of soda was given in ten-grain doses three and four times daily, and in a week the mother brought the child to the hospital free from pain and in much better condition. The salicylate was continued for one week more and then omitted. Within forty-eight hours of its omission the pain in the back was nearly as bad as ever and for several days the child suffered much. At the next visit to the hospital the salicylate was again prescribed, with the same beneficial result as before. After several weeks the child is now in a perfectly satisfactory condition but is still taking fifteen grains of the drug each day.

VIII. Frank K., nine years old. Pott's disease for several years. The boy had worn an inefficient brace, which afforded him but little support. When brought to the hospital an abscess was coming on, his temperature was high, and his general condition very wretched. He was very sensitive and could not sleep at night on account of pain, and he was very much distressed by every movement. On January 28, 1889, his first appearance, he was given salicylate of soda in ten-grain doses three times a day. On February 4, 1889, his mother returned with him, saying that for many months he had not been so comfortable or able to be moved so easily.

IX. James K., eight months old, appeared at the Children's Hospital out-patient department with an acute inflammatory process in the right hip-joint resembling acute coxitis. No cause could be assigned. The joint was immobilized in its flexed position by a posterior wire-splint, but no relief followed and for a month he continued in this state. Finally he was given salicylate of soda in three-grain doses three times daily and within two days his pain was very much less, he nursed better, and his general condition improved very much. He is now in the condition of chronic joint disease without the acute symptoms of pain, etc.

X. Mary K., four years old. Children's Hospital, out-patient department. Low dorsal Pott's disease with beginning psoas abscess. This child had suffered from Pott's disease for two years, but having been much neglected by the mother, presented herself, when she finally came to the hospital, in very bad condition, and although a Taylor back brace was applied, the disease was so acute that she suffered much pain and especially when psoas abscess began to form. Her cries were very severe, especially at night. Salicylate of soda was given in five-grain doses three times daily, and in twenty-four hours, by the mother's report, the pain was very much relieved and continued insignificant, although the abscess steadily increased until the abscess was opened.

To quote further cases would be merely to repeat what has already been told. The use of salicylate of soda in these painful joint affections is of course purely empirical, and what is known of the drug and its physiological action would give no hint to this use of it. Yet it must be evident how very marked its action is in controlling spasmodic pain, and modifying the sensitiveness of acutely inflamed joints.

Most of the patients in the list of cases reported above were suffering from a joint affection clearly tubercular in type, nor was the drug given under the impression that a mistake in diagnosis had been made and that the affection was really rheumatic.

The facts are these: in chronic tuberculous joint disease there is no more common or distressing complication than that acutely sensitive condition which comes on sometimes of itself, and sometimes as a result of inefficient treatment. Mechanical treatment will sometimes control it and at other times is powerless to relieve it in any way. At such times the experimentation above related has shown that salicylic acid is a powerful agent in relieving the spasmodic pain if given in large enough doses, but this analgesic action is not permanent but transitory, and passes off. It may be that salicylic acid has some power of controlling spasmodic pain in general, or it may be only that it possesses some peculiar influence over joint pain.

In the cases coming under the writer's observation no mishaps have occurred in the use of the drug, although in cases where it was continued for a long time the kidneys were watched to see that no nephritis was set up, and in hospital out-patients the drug has not been ordered in cases where the parents were not careful people, and able to bring the child each week to the clinic. The form prescribed has been the salicylate of soda made up in the ordinary five-grain tablets, and these have been taken readily, without complaint. The experience in the use of the drug in this connection has led of late to its wider and earlier use in the hospital clinic, *always, however, as an adjunct to proper mechanical treatment.*

The conclusions which the writer would offer, as exemplified in the cases already related, are: —

That salicylic acid in large doses is useful as an aid to the mechanical treatment of chronic tuberculous joint disease, not in routine conditions, but —

(1) When night cries are present.

(2) When the diseased joint is very painful and sensitive to jar.

(3) When vomiting and general discomfort are associated with an increase in the local disease.

That relief from pain, and diminished sensitiveness follow at once, as quickly as in acute articular rheumatism, and that the drug should be given in as large doses as for that affection until the pain is relieved or the physiological effect is produced.

REPORT ON PUBLIC HYGIENE.

BY S. W. ABBOTT, M.D.

PREVENTION OF COMMUNICABLE DISEASES.

Vaccination. — Data have recently been compiled by the Italian government relative to the extent to which vaccination is now practised by different countries.[1] They are as follows: —

Countries.	Period.	Living births.	Number vaccinated.	Per cent. vaccinated.
Italy.	1880-84	5,214,098	3,829,589	73
Germany.	1880-82	5,080,672	3,625,839	71
Prussia.	1880-82	3,077,742	2,278,004	74
Bavaria.	1880-82	608,925	378,945	62
Saxony.	1880-82	374,979	251,547	67
Würtemberg.	1880-82	230,776	154,412	67
Baden.	1880-82	165,784	94,629	57
Other States.	1880-82	622,466	468,322	75
Austria.	1880-83	3,393,810	2,641,080	78
Hungary.	1880-83	1,794,900	1,547,406	86
France.	1883-84	1,853,250	1,194,796	64
England and Wales.	1875-77 1882-83	2,668,074 1,779,862	2,291,352 1,525,605	86 86
Scotland.	1873-84	1,504,319	1,320,188	88
Ireland.	1882-85	475,637	422,311	89
Holland.	1880-83	577,380	475,533	82
Norway.	1880-82	176,640	153,909	87
Sweden.	1881-83	401,366	320,253	80
European Russia.	1883	3,880,857	2,185,274	56

Körösi sums up the contested points in regard to vaccination as follows:[2] —

1. Whether, in an equal number of the vaccinated and unvaccinated, fewer of the former are attacked by small-pox than of the latter (a question of morbidity).

2. Whether, in an equal number of vaccinated and unvaccinated, fewer of the former die of small-pox (a question of mortality). To the question as to the ratio of the deaths from small-pox to the number of those taken sick with the disease, Dr. Körösi applies the term lethality.

3. Whether or not vaccination is of itself innocuous, and whether or not other diseases may not be introduced by vaccination.

Dr. Körösi gives the data relative to 1,113 persons over one year of age who were ill with small-pox in Buda-Pest. Of these 631 were vaccinated, of which number 42 died, or 6.6%; 468 were not vaccinated, of which number 231 died; or 49.7%; there were 17 doubtful cases, of whom 3 died; so that, with reference to small-pox, the lethality of the unvaccinated was 800% greater than that of the vaccinated. He admits that not quite all of this difference can be attributed to neglect of vaccination, since from all other diseases upon which neglect of vaccination has no effect there died 160 unvaccinated to 100 vaccinated. Taking this into account, we may still predict that under like conditions the unvaccinated will have nearly a sixfold greater liability to death when stricken with small-pox than the vaccinated.

Period of collection of bovine lymph. — Negri occasionally made use of lymph taken at the expiration of three days (3x24 hours). Upon the continent it is common to employ lymph collected either at the close of 5x24 or 6x24 hours.[3] In the United States it is quite common to use that which is collected at the end of 7x24 hours after insertion, or if the collection requires several hours, to complete the operation at that time, after the method of Lanoix. Undoubtedly temperature modifies the development of the vesicle, and in warm countries the period is shorter than it is in cold countries.

In Holland the practice is as follows: —

At Rotterdam, a portion of the calves 5x24 hours, another portion 6x24 hours. At the Hague 5x24. At Utrecht a calf is vaccinated on one side with lymph taken 6x24 hours after injection and on the following day on the other side with lymph taken 5x24 hours after injection. In Amsterdam a portion 4x24 hours, and another portion 5x24 hours. In Haarlem 5x24 hours, and in Brussels 5x24 hours and 6x24 hours. In England the usual practice is to take lymph 5x24 hours after insertion.

The number of insertions vary from 50 to 200, according to the demand. The age of animals used varies from three to nine months.

The following are a portion of the recent regulations of the German government relative to animal vaccination. Decree of the Bundesrath of April 28, 1887: —

Selection and examination of animals for vaccination. — § 1. In procuring animal lymph, only those animals are to be chosen whose state of health can be determined by slaughter, and by an examination of the internal organs after taking the vaccine lymph.

§ 3. Before vaccination the condition of the animal must be determined by a veterinary surgeon. Only those animals which are perfectly healthy are to be employed. The selected animals are to be numbered and registered immediately after the examination.

§ 4. The temperature of the body should be noted at the time of vaccination and at the time of collection of lymph. If the temperature exceeds 41° C., or if there are other signs of illness, except slight digestive disturbance, the animal must be excluded.

§ 5. After taking the vaccine lymph, the animals must be killed and examined by a veterinary surgeon. The examination should especially be directed to the condition of the navel and of its vessels, the peritoneum and pleura, the lungs, liver, and spleen.

§ 6. The veterinarian must give a certificate of every vaccination.

§ 7. The lymph must only be issued to the vaccinating physicians when the autopsy shows that the animal was healthy.

. . . . . .

§ 12. Animals which have come from a distance must not be vaccinated until the day after their arrival.

§ 13. The room for vaccination and lymph collection must be light, airy, easily cleaned, disinfected, and in large establishments easily heated.

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[1] Risultate dell' Inchiesta sulle Condizione igieniche e Sanitaric nei Comuni del Regno.

[2] Neue Beobachtungen über den Einfluss Schutzpockenimpfung auf Morbidität und Mortalität.

[3] Vaillard. Manuel pratique de vaccination animale, Paris, 1886, p. 40.

§ 14. All of the implements used in vaccination and in the collection of lymph, as well as those used in the subsequent handling and transporting of it, must be of a material and shape permitting thorough cleansing and disinfection. They must be used for one purpose only, and before and after each use they must be cleansed, and disinfected when necessary.

§ 15. The place to be selected for vaccination is defined as follows: On young animals the posterior part of the abdomen, from the perineum to the neighborhood of the navel, including the scrotum and the inner surface of the thigh; but in older animals the scrotum, the milk-mirror, the udder, and the neighborhood of the vulva.

Dr. Körösi, who was present at the International Medical Congress at Washington in 1887, has carefully investigated the statements of the Austrian Railway Physician Keller, who adduced certain statistics in opposition to vaccination. These statistics have been widely published and largely quoted by the anti-vaccinationists, Vogt, Lorinser, and Reichsperger. Körösi corresponded with all of the physicians who had contributed the material from which Keller compiled his statistics, and found that not only had Keller suppressed important data, but had actually altered the returns to suit his own views. One of the physicians who contributed to the returns confessed that "the data were prepared in conformity to the taste of their chief, whom he knew to be opposed to vaccination."

The committee of the Ninth International Congress who examined the reports of these statements reported that they were "forced to declare that the statistics of Dr. Keller were found to be false; that they are an unpardonable effort to mislead public and scientific opinion, and that henceforth no weight should be attached to them, having been proved by us to be entirely incorrect."[4]

SMALL-POX MORTALITY IN GERMANY IN 1887.[5]

The present efficient vaccination laws of Germany, requiring the vaccination of all children before the September of the year following their birth and revaccination of school children in the twelfth year, are having their effect in protecting that country from small-pox to a wonderful degree, as compared with surrounding countries having very loose regulations.

Dr. Rahts gives the results of inquiries of the German government upon this point for 1887. There were 168 deaths from small-pox during the year out of a population of more than forty-seven millions. Of these 105 occurred in East Prussia near the Russian border, chiefly in Königsberg, Ortelsburg, and Johannisburg. (Königsberg has a large trade in Russian and German rags.)

The following table gives the small-pox mortality for 1887 in Germany as compared with other neighboring countries having less stringent laws as to vaccination: —

DEATHS FROM SMALL-POX.

	In Germany.	In 194 Cities of Germany.	In 52 Cities and Districts of Austria.	In 29 Cities of Hungary.	In 71 Cities and places in Belgium.	In 28 Cities of England.	In 51 Cities of France.
Population	47,369,224	10,205,123	2,772,987	1,361,781	1,905,843	9,214,099	6,277,007
Total deaths from Small-pox in 1887	168	44	1022	1760	78	332	1956
Ratio per 100,000 inhabitants	0.35	0.4	36.9	129.	4.1	3.6	31

The mortality from small-pox in Austrian cities was therefore 92 times as great as that in the German cities, in Hungary 322 times, in Belgium 10 times, in England 9 times, and in France 77 times as great.

MANAGEMENT OF DAIRY-FARMS.

Dr. J. B. Russell, the medical officer of health of Glasgow, gives the following excellent summary of the sanitary requirements which he deems essential to the proper management of a dairy-farm: —

1. A farm-house ought to be wholesome in structure, and the steading well supplied with pure water, drained by vitrified pipes, and with privy accommodations for both sexes.

2. The house ought to stand apart from the premises used for dairy purposes. A distinct, domestic washing-house is indispensable. The milk-house ought to open into the free air, and be at a distance from the dung-pit. The dung-pit ought to have retaining walls, an impervious bottom, and a light roof borne on pillars.

3. The byre ought to be well lighted, ventilated, and paved, and regularly cleaned.

4. No person who suffers from infections, or any recent indefinite illness, or who has been in any way in communication with an infected person or thing, should engage in the milk business.

5. The milk of no animal which seems to be ill, or which has any sore about the udder or teats, ought to be sold for human consumption.

6. The udders and teats, if soiled, ought to be washed before milking. Soap, warm water, and towels ought to be at hand, and every milker ought to wash hands before beginning.

7. Healthy cattle, healthy servants, cleanliness in every detail of the business of the dairy-farm, mean money to the producer and retailer of the milk.[6]

WATER-SUPPLY, AND SEWERAGE.

The removal of Iron and Algæ from the Water of the Königsberg Supply.[7] — The appearance of algæ in public water-supplies at certain seasons of the year gives trouble in some of the European towns as well as in our surface waters in Massachusetts. Frühling states that the water-supply of Königsberg was once taken to the town in an iron pipe from a distance of seven and one-half miles. The subsoil water collected there was rich in iron compounds.

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[4] Transactions of Ninth International Medical Congress, Washington, 1887. Kritik der Vaccinations Statistik, etc. Josef Körösi.

[5] Arbeiten aus dem Kaiserlichen Gesundheitsamte, 5 Bd. 1 H., 1889.

[6] "On the Sanitary Requirements of a Dairy-Farm," by the Medical Officer of Health of Glasgow. Glasgow. 1889.

[7] Vierteljahrsschrift für öffentliche Gesundheitspflege, 2 H., 1888, p. 339.

so much so that it was impossible to use it for washing, or other similar domestic purposes. There was also a rapid development of algæ, to such an extent as to fill the mains. In 1873 a species of spirillum appeared; afterwards the leptothrix; and the latter was supplanted by the crenothrix.

Subsidence in reservoirs made no improvement, but considerable deposits of mud were removed. After careful investigation had demonstrated the possibility of converting the soluble iron salts into insoluble compounds by means of careful aeration, withdrawing thereby also the food of the various algæ, it was decided to accomplish this aeration in a simple way. The main pipe for about five and one-quarter miles of its length crossed and recrossed an ancient water-course several times, and it was arranged to turn the water out of the supply main into the upper part of this water-course, and allow it to flow along in it to a point about five miles lower down, where filter-beds were made so as to purify the river-water before it was passed into the town water-mains. The effect of this open flow was to change entirely the character of the water, which can no longer, when it reaches the filter-beds, be recognized as the same as that which issues from the upper part of the main.

On reaching the water-course the clouded water gives rise to a red deposit, which becomes smaller in quantity as the water passes onwards, until it finally disappears and the water becomes quite bright. It is also found to have so far lost its tendency to produce algæ that it will remain for weeks in an open vessel entirely free from these growths. It would seem, therefore, that their existence depends on the iron salts which are present to the extent of four parts per 100,000 in the original water. The water is to some extent deprived of its freshness by this treatment, but this disadvantage is of small importance when compared with the gain in other respects.

WATER-SUPPLY OF PARIS. NEW ARTESIAN WELLS.[8]

A part of the water-supply of Paris comes from artesian wells at Grenelle and Passy. A third has been recently completed at the Place Hébert, after the lapse of twenty-two years from the beginning of the work upon it.

The Grenelle well at first yielded about 750,000 gallons daily, through a pipe six and one-half inches in diameter. The daily yield is now only 73,700 gallons; the temperature of the water is about 82° F., and the quality of the water excellent. The depth of the well is 1,795 feet (547 metres).

The Passy well at first gave 4,400,000 gallons, which was afterwards reduced to 1,362,240 gallons. This well is 1,939 feet deep (591 metres).

The new well is 2,194 feet (668 metres) below the sea-level. Its tube is of iron and steel, and cost about a half-million dollars. The temperature of the water delivered by this well is 93.9° F.

SEWAGE DISPOSAL.

Birmingham. — A good description of the method of sewage disposal at Birmingham, England, is to be found in a recent number of *Gesundheits Ingenieur.*

The total area of the farm is 1,227 acres. The area of the drainage district is 47,275 acres, and its population in 1885, 619,693.

In dry weather the amount of sewage disposed of is 16,000,000 gallons per day. The method of disposal is that of precipitation, with utilization of the product for agricultural purposes. About eleven tons of lime are used daily, the lime being first slaked and then conveyed to an upper story of the lime shed, where it is mixed with a part of the sewage pumped from the sewers. The lime is ground to powder, and the compound of sewage and lime is run into tanks where the impurities are precipitated. The capacity of the tanks is 1,169,360 cubic feet. The sludge from the tanks is elevated into wooden carriers and conveyed to beds upon the farm. The cost of lifting it is about ten shillings a day, including fuel and labor.

The sludge is allowed to remain on the land about two weeks before it is touched. The water, draining out of the sludge, leaves a layer from ten inches to a foot in thickness. Various crops are planted upon this, and the dressings are made about once in four years.

LEAD-POISONING THROUGH WATER-SUPPLIES.

The epidemic of lead-poisoning in Dessau mentioned in the report of last year has called forth two excellent monographs upon the subject by Drs. Richter [9] and Wolffhügel.[10] The former treats the subject from a medical, and the latter from a chemical standpoint.

It appears that in the period from September, 1886, to January, 1887, ninety-two persons (fifty-four males and thirty-eight females) were taken ill with lead-poisoning, and double this number were said to have suffered with milder symptoms (not including lead-colic). Most of the sick were from the laboring class. The cases occurred in twenty-seven streets and sixty-seven houses. The different kinds of food, such as meal, flour, sugar, bread, coffee, and confectionery were examined for lead, and (on the strength of reports of cases occurring in New York in consequence of eating vermicelli colored with chromate of lead) forty kinds of vermicelli were examined. All these articles were found to be free from lead. Only one mineral water contained lead, and in this case it was a mixture with the water of the public supply. Among the sick fifty-nine persons had partaken of Full beer (a mixture of one part of beer and two or three parts of water). Lead was found in this beverage. In the beer of five breweries, lead was found in two. And on inquiry it was found that these two used the public water-supply.

Other inquiries of a very thorough character pointed to the presence of lead in the public water-supply.

Examinations made in September showed by quantitative analysis the presence of 2.89 milligrammes of lead per litre, or 3.11 milligrammes of oxide of lead.

At a later period examinations were made of the water furnished at different heights in the town, also in different stories of houses, and at different times of the day. One sample in a garden, which flowed through a long piece of pipe, had 11.6 milligrammes per litre. Another in an empty tenement had 8.7 milligrammes. The results were very variable. Of the results obtained from the first samples of water drawn from the pipes, after the water had remained in them for a time, the average showed 4.41 milligrammes of lead oxide.

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[8] Revue Scientifique, vol. 41, 1888, p. 241.

[9] Die Blei-vergiftung durch Leitungswasser in Dessau im jahre 1886, von Dr. Richter. Vierteljahrsschrift für öffentliche Gesundheitspflege, Bd. 19, Heft 3.

[10] Wasserversorgung und Blei vergiftung Dr. G. Wolffhügel. Arbeit. aus dem Kaiserl. Gesundheitsamte.

As to the *causes*, it was stated that most of the towns supplied with water used lead pipes in the same manner with Dessau, but without evil results. The following are to be reckoned as causes of lead-poisoning: —

1. The composition of the pipe.
2. Meteorological influences.
3. Galvanic effects.
4. Character or composition of the water.

The author states that the first three of these causes may be excluded in this instance. He thinks that the union of iron or zinc with lead lessens its injurious effect, and tin increases it. There is a danger in the use of tinned lead-pipes, or of tin pipes having a lead covering, since, if the water has access to the lead, its action is more marked than it is when the pipes are unprotected. He believes that lead-poisoning may be traced mainly to the character of the water itself. He also attributes much to the presence of air in the water. In the summer of 1886 air was often to be found in the pipes, in consequence of a great demand for water and an insufficient supply, and in the upper stories of houses the water-pipes were often empty.

The author concluded that the character of the water and the carbonic acid contained in it were the chief causes contributing to the poisoning. The water had from 7 to 9.5 parts per 100,000 of solid residue, and a hardness of 2.5 to 2.8 (German).

The remedies proposed were (1) to separate the lead from the water. (2) To substitute other kind of pipe for lead. (3) To give the pipes a protective inner coating.

It was further recommended as measures of prevention that air should not be allowed to gain access to the pipes, and the removal of free carbonic acid should be secured. Regulations were proposed to secure these results.

THE PURITY OF NATURAL AND ARTIFICIAL ICE.

Examinations of ice were made by Dr. Heyroth from samples obtained of the ice-dealers and tradesmen of Berlin. The analyses were carried out by the customary official method.

Natural ice. — A diminution of the saline contents was found in freezing, the residue being about one-tenth only of that of the water. The author coincides in opinion with that of Nichols and of Hills that the waters of winter are richer in their organic contents than those of summer. The increase of oxidation is due to the fact that the gases of decomposition formed in the mud of streams are prevented by the ice from reaching the air.

He [11] also states that the absence of chlorides in ice led to the examination of the relation between the saline contents of the ice and of the water from which the ice was formed. It was found that the amount of chloride of sodium did not increase or diminish in a constant ratio.

He finds that, among the pathogenic micro-organisms the bacilli of anthrax and of erysipelas withstand freezing for a considerable length of time without losing their activity.

He also examined artificial ice from two establishments. It was opaque from countless air-bubbles, milky, and sometimes foul and yellow with iron-rust, sand, etc. The chlorine and ammonia were also greater in amount than in the natural ice. These facts, and the recognized inability to make a perfectly clean ice, and the fluctuation between very wide extremes of the bacterial contents of artificial ice, placed the latter far below natural ice in value.

He concludes, (1) that ice used for the preservation of food and also for the cooling of drinking water, whether it be an artificial or a natural product, should be formed upon and from water whose purity has been ascertained, and which equals at least that of the river and pond waters used for domestic purposes. (2) Manufactured ice should be subject to periodical examination, and its standard of excellence maintained.

A NEW TREATMENT FOR LOCOMOTOR ATAXIA AT THE SALPETRIERE.

BY MARY F. HOBART, M.D.

On the 15th of January, at his regular clinical lecture at the Salpêtrière, Charcot closed his course on locomotor ataxia by presenting the new treatment which has been used on all such cases in his clinic since September, 1888.

This treatment did not originate in the Salpêtrière, but with Motchoutkowsky, in Russia. In 1883 he had a locomotor ataxia patient, who was also affected with a scoliosis. After suspending the man in Sayre's apparatus for the application of a plaster jacket, he noticed a slight improvement in the tabetic symptoms. He then began to suspend his tabes patients every few days for two to three minutes at a time. Satisfied with his results, he published a short monograph on the subject, which fell into Charcot's hands and which the latter presented in substance to his class.

Motchoutkowsky describes fifteen cases, in all of which certain symptoms are constantly modified: fulminating pains, inco-ordinated movements, vesical and sexual functions. These patients had treatments varying in number from twenty-nine to ninety-seven; some of them were cases already far advanced. One man who was too weak to be suspended, was stretched in the horizontal position. The effect of the treatment can only be explained by the alteration of molecular action due to the stretching of the spinal nerves in their oblique position in the spinal canal.

Charcot, after speaking of the fallacy of all the routine treatments for locomotor ataxia, presented a few cases which had been improved by suspension in his own clinic.

Case 1. Man, fifty years old. Appearance of disease five years ago, with lancinating pains occurring every two or three days, and preventing sleep. About six months later symptoms of inco-ordination; later still, retarded micturition and loss of sexual power, girdle sensation, ocular disturbance, etc. Was suspended for the first time, October 22nd. Previously he had been treated with galvano-cautery, without benefit. He had had thirty-three suspensions, varying in length from one-half to three minutes. After the first three or four suspensions pains began to diminish; after fifteen treatments they entirely disappeared. Walks better; does not "feel his legs give way;" can walk all day. Vesical functions better; return of normal sexual power.

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[11] Dr A. Heyroth. Uber den Reinlichkeitszustand des naturlichen und Künstlichen Eises, Arbeiten aus dem Kaiserlichen Reichs-Gesundheitsamte, 4 Band, 1888.

Case II. Man, forty-three years. Syphilis at twenty years. Pains began about five years ago. After eight or nine treatments could walk much better and the pains disappeared. Urinates better, and sexual power has improved.

Case III. Man, thirty-two years old; syphilis at fifteen. Present disease began two years ago with motor disturbance, which is rare; found he could not walk. Lancinating pains did not appear till after a year. Then followed vesical and sexual disturbances. Before treatment by suspension was begun he could walk only by leaning on his wife's arm; now he walks an hour at a time without even a cane. Pains have disappeared; also the sensation of cotton under his feet, while vesical and sexual power are re-established.

After showing these successful cases, Charcot presented one in which the treatment had failed.

Case IV. Man, thirty-two years old; syphilis ten years ago.

The present disease was ushered in eight months since, with ptosis and diplopia; lancinating pains appeared a month later. After five or six suspensions he walked better and pains were nearly arrested.

Three weeks ago, however, he had a fresh attack of ptosis and fulminating pains. This case is a specially difficult one to treat, the disease being favored by heredity. Mother hysterical, two brothers died in convulsions, one has epilepsy, and another has already died of tabes dorsalis.

Charcot thinks that other nervous diseases may be modified by the same treatment, and showed a young girl with Friedrich's disease, who had improved in every respect since she had been regularly suspended.

Reports of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of March 5, 1889. The President, Dr. George W. Jacoby, in the chair.

Dr. Sachs presented a case, No. II., of hemiplegia in a child with unusual associated movements which he described at the last meeting of the society. The associated movements of the paralyzed hand in this case were remarkably similar to the voluntary movements made by the sound side, even to the minute reproduction of the process of buttoning the clothes, etc.

Dr. Chas. L. Dana reported two cases of

FOCAL LESIONS OF THE TEMPORO-SPHENOIDAL LOBE WITH SYMPTOMS OF FORCED MOVEMENTS.

The first was a case of abscess of the right temporal lobe occurring in a woman of thirty-two years. It resulted from a fall on the head and developed slowly in the course of two years. The notable symptom, aside from headache and a hysterical mental state, was sudden forced movements causing the patient to fall back and to the right. She was continually falling out of bed on the right side, and would sometimes perform *manege* movements. She died suddenly. Autopsy showed an old circumscribed abscess of the third and fourth right temporal convolutions, with a recent hæmorrhage into the cavity, bursting into the lateral ventricle.

The second case was one of focal meningo-encephalitis, causing deep and extensive softening of the second and third right temporal convolutions. The patient, a man of forty, was brought into the hospital in a condition of delirium. A history was obtained of an apoplectic stroke one year before. Since then he had had frequent attacks of dizziness and muscular twitchings, during which he would fall always forward and to the right.

A third case of abscess of the right temporal lobe, recently reported in the *Provincial Medical Journal*, was cited in which the patient frequently staggered to the right.

Physiologists found a number of parts of the brain, irritation of which caused forced movements, *e.g.*, the cortex cerebri, the basal ganglia, the cerebellar peduncles, etc.

Pathologists had found in cases of forced movements lesions chiefly in the cerebellar peduncles, especially the middle; but there were a few observations showing such disturbances from lesions of the parietal lobes.

It was suggested that the temporal lobes contained representation of our sense of space and appreciation of changes in bodily position. It might be that the right lobe was especially concerned. There was some *à priori* probability that the vestibular or space-sense root of the eighth nerve and the cochlear or auditory root were connected with neighboring areas in the brain cortex. Anatomically it was known also that the temporo-occipital lobe was connected by a bundle of fibres with the pons nuclei and the cerebellum.

Dr. Gray said it was true that the auditory nerve subserved the senses of hearing and space, and it was quite true that deaf-mutes are never sea-sick, yet lesions of the temporal lobe thus far have produced only word-deafness. These were lesions of the first and second convolutions. We now know that the auditory nerve has connections with the cerebellum. Such profound disturbances as existed in Dr. Dana's cases are generally due to disease of the cerebellar peduncles or semi-circular canals. Autopsies seem to have excluded cerebellar lesion, but no mention was made of any examination of the internal ear to see if the canals were normal. He referred to a case of his with lesion of the temporal lobe with neither word-deafness nor loss of equilibrium. If Dr. Dana's conclusions were correct he had opened up a new field in brain pathology.

Dr. Fisher described some of his recent experiments on dogs. Injury to the parietal or temporal lobes he had found to cause rotation to the side of the lesion quite as much as if the cerebellum were involved. These movements would last for several days. His researches, therefore, in an experimental direction, would tend to corroborate Dr. Dana's clinical deductions. His operations were excision of the cortex in places, with more or less laceration.

Dr. Sachs thought the most important fact that Dr. Dana had sought to establish was the termination of the vestibular branch of the nerve in the fourth and fifth temporal convolutions, whereas other authors had located all auditory terminations within the first and second temporal convolutions.

Dr. Dana in closing stated that he had made a gross examination of the internal ear, but had found no sign of inflammatory change. The cortical area for the cochlear branch would remain the same, but the district for the vestibular branch he believed to lie lower down in the temporal lobe.

Dr. W. M. Leszynsky then read a paper on

LOCALIZED BASAL MENINGITIS AND DOUBLE OPTIC NEURITIS.

and presented the recovered patient that had formed the basis of his article. He spoke at some length upon the value of ophthalmoscopic examination, and emphasized the importance of determining the presence or absence of optic neuritis in every case where headache and vomiting are of doubtful or obscure origin.

Dr. David Webster had seen the case detailed by Dr. Leszynsky a great many times and had assisted in making most of the measurements. An important point in the case was that the patient never complained of his eyes but of headache, and the double optic neuritis was only found upon examination. It is very rare to see such cases without complaint of the eyes on the part of the patients. He had seen many cases where vision was and remained perfect throughout the course of an optic neuritis, and others with partial or total blindness but recovery of vision with the decline of the disease. Many patients do not know that their vision is defective. In this case vision went down at times to 2-7 in each eye. It varied. He thought all cases with head and stomach symptoms ought to be submitted to an ophthalmoscopic examination.

Dr. Gruening said that it was exceptional for a case of double neuritis to take the course that this has done. The termination is seldom so favorable. The prognosis is always bad. We cannot be hopeful when we see a case of optic neuritis. He had observed many cases in young people where the swelling had been enormous and yet it had disappeared. There is particularly great swelling in hydrocephalus internus. We may say that where there is a sudden and great increase of intracranial pressure there will be marked swelling of the optic disk. Recovery is not so rare in the optic neuritis of puberty or in the form sometimes occurring in septic fevers. He had recently seen a case of optic neuritis in a little girl who had suffered from scarlatina, diphtheria, and pertussis in succession, the eye disease following the pertussis. Recovery took place in a short time.

Dr. Birdsall had seen in several cases a decided degree of optic neuritis yet with vision well preserved. These cases were particularly in children. He felt with Dr. Gruening that our prognosis should be very guarded. He described in some detail a case of his own where optic neuritis followed a blow upon the head and where recovery took place. There was no loss of vision.

Dr. Gray thought it was impossible, as a rule, in such a case as Dr. Leszynsky's to make a diagnosis between a neoplasm and a meningitis. There are quite a number of cases where optic neuritis has appeared after exanthemata, and at the autopsy a tumor has been found. The fact of the occurrence of scarlet fever in this particular case would therefore give additional evidence in favor of a neoplasm. We should be very cautious in our prognosis.

Dr. J. E. Weeks believed there were certain conditions of the disks, which may lead us to make a favorable diagnosis. If there is no hæmorrhage present and the disks are pale the prognosis is much more favorable. He mentioned a case of Dr. Knapp's where there were choked disks and three neurologists in the city had diagnosticated tumor. The patient, however, made a perfect recovery. He had observed optic neuritis after diphtheria, dysentery, measles, scarlet fever, etc. There are only three or four cases on record following diphtheria.

Dr. Webster asked the reader of the paper how long after scarlet fever the optic neuritis had appeared.

Dr. Jacoby said that the diagnosis of a circumscribed basal meningitis by Dr. Leszynsky in his case was unwarranted. He had seen Dr. Gruening's case of slight whooping-cough followed by optic neuritis with perfect recovery. In such a case a diagnosis of an intracranial growth could not be made. Another case that had come under his observation was that of a ten-year-old boy in whom sudden blindness developed while he was in apparently good health. There was headache and optic neuritis and two neurologists made the diagnosis of a tumor. The patient recovered. In the case that had just been detailed it was not justifiable to make a diagnosis of either meningitis or a tumor.

Dr. Leszynsky in closing remarked that the causes of intracranial tumor in children could easily be summed up as syphilis, tubercle, and traumatism, of which there had been no history in his case. When the young man came to him he had typical cerebral vomiting and constant headache. The attack of scarlet fever occurred fourteen months previously.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON ORTHOPÆDIC SURGERY.

Stated meeting, January 18, 1889.

Dr. A. B. Judson read a paper on

THE QUESTION OF INTERFERENCE WITH THE ABSCESSES OF HIP-DISEASE.

Dr. Judson exhibited two cases of hip-disease in which abscesses had been absorbed with most favorable results locally and generally, and thus introduced a defence of the expectative plan of managing such abscesses which he had followed for many years. He believed that if mechanical and hygienic attention is duly paid to the affection of the bone and joint the abscesses, if they occur, will be best managed, as a general rule, by allowing them to become absorbed or to open spontaneously. Their presence does not add to the gravity of the deep-seated bone-disease, or interfere with the natural repair and cicatrization of the osseous tissue involved. Many such abscesses are cold and painless, and attain a large size. Their rupture is painless and followed by an unimportant scar. In two of his cases the rupture occurred during sleep and the child supposed he had wet the bed. Many cases, however, are phlegmonous and attended with pain and general wasting. He would secure (1) absolute rest to the joint, (2) the most generous and varied diet, and (3) the use of opium in potent doses if required. He belived that incision is a tardy and fruitless procedure because the most painful stage is present when the pus is in the cells below the periosteum. It substitutes artificial for natural closure, and with the best antisepsis is useless in many cases unless followed by scraping of the purulent depot, excavation of the focus, or excision. It is difficult for the general surgeon or the beginner in orthopædic practice to refrain from operating in such cases, but it takes but little knowledge of the way in which the abscesses of hip-disease are treated at the present time to see that the general surgeon, whose reliance is chiefly on operative procedures, resorts to the knife, with the hope of premoting a rapid recovery; while the orthopædic surgeon who relies chiefly on mechanical means, seeing that the case, no matter how treated, will be tedious, devotes himself to the proper management of the bone disease, and thinks but lightly of the incidental abscesses.

Recent Literature.

Congestive Neurasthenia, or Insomnia and Nerve Depression. By E. G. Whittle, M.D., London, F.R.C.S. Eng. 12mo. pp. 35. H. K. Lewis, London. 1889.

The purpose of this little volume is "to describe the special characters of a common type of nerve derangement, to prove that the insomnia and depression in this type are dependent on cerebral congestion, and to illustrate the remarkable efficacy of blood-letting, either by leeching or venesection, in its treatment." We are naturally reminded of Hammond's exploded notions in regard to cerebral hyperæmia, and the once fashionable "congestion of the base of the brain," but instead of ergot more heroic methods seem in vogue in England. It is not strange, however, that such ideas exist in a country where the knowledge of neurasthenia is so slight that Playfair has usurped half the credit of Weir Mitchell's system of treatment. Beard himself did his best to combat the hyperæmia theory of nervous exhaustion when it was in vogue here, and we fear that blood-letting would prove disastrous in any of the forms of neurasthenia that are met with in America. It may be that there is a "congestive neurasthenia" among the English, and the author of this little work claims marvellous results from blood-letting, but results almost as marvellous were once attributed to ergot, and yet it has gone out of fashion in the treatment of neurasthenia.

—The legislature of Pennsylvania has been asked for $100,000 to aid the Veterinary Hospital of the University of Pennsylvania, and the appropriations committee has recommended an appropriation of $50,000.

THE BOSTON
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IDIOSYNCRASIES ATTENDING THE USE OF ALCOHOL.

Under the somewhat incorrect title of "Idiosyncrasies of Alcohol," Dr. W. S. Searle writes in the last number of the *North American Review.* He opposes the doctrine of total abstinence, while commending the good intentions of those who would rally the world to temperance reform under the banners of prohibition. Temperance, he affirms, is the true doctrine, and total abstinence a fanatical error. Total abstainers have represented alcohol in all its forms and under all circumstances as a deadly poison; fanatics constantly attribute to its pathogenetic influence a multitude of diseases which are by no means exclusively found in drunkards. The pathological effects of alcohol are far from uniform. Often, as with tea, coffee, tobacco, arsenic, the human system gradually becomes accustomed to alcohol and tolerant of its presence. If consumed in moderate quantities and in its milder forms (we are quoting from the *Review* writer), it is extremely doubtful whether it is capable of producing any disease in the majority of individuals.

In support of this statement, Dr. Searle might have appealed to some late European experiments, where certain animals were "dosed" for a number of years with small quantities of pure ethyl alcohol well diluted; these animals did not suffer perceptibly in their health and when finally killed, their viscera were found intact.

Allusion is made to the fact that in many instances men have consumed alcohol in immense quantities and for many years, and yet survived to a ripe old age. Such a fact is quoted from the *New York Tribune*: a man whose name, date, and place of death is given (M. Dronan, of Brittany), died recently aged one hundred years. "He was wont regularly to consume a bottle of wine with his dinner, and follow that meal with a glass of brandy. His ancestors were addicted to alcoholic stimulants. The physicians who made the autopsy were astonished at the soundness of his organs." This man did not die from disease but from accident. If it could be shown that this account, attested by the Paris correspondent of the *Tribune*, were unauthentic, the fact still remains that in every large community individuals exist who have drank distilled liquors freely and steadily for fifty, sixty, and seventy years, and have finally died of old age. Original hereditary influences, variety of employment, the rapid elimination by the emunctories, and established tolerance, count for much in solving the problem of the variety of results; it must be acknowledged that no other substance can be named, the pathogenetic effects of which are so diverse, and which yet often fails to show itself nocuous at all. "It may justly be claimed, however, that in the sedentary, degeneration of the liver is the most constant, while in those of nervous temperament, brain diseases are most common." It may also be noted that alcohol is least injurious to men of lymphatic temperament.

If the physical results of alcohol are varied, continues the reviewer, much more diverse are the effects on the mental and moral nature of man. Some persons are pleasurably affected by alcoholic stimulants; sense and intellect are exalted. Once led captive by alcohol, these unfortunates seldom have sufficient will-power to refrain from renewed indulgence. No moral considerations avail to restrain them, and with few exceptions, they yield wholly, finally, and fatally to the tempter. For such men, total abstinence is the only refuge.

Upon the large majority of men the effects of alcohol, taken to intoxication, are clearly and essentially different. Repeated indulgence brings drowsiness, dulness of apprehension, anæsthesia, vertigo, nausea, and vomiting, — in short, bodily and mental symptoms which are excessively disagreeable. Of this class very few become drunkards, and those are men to whom anæsthesia becomes desirable as a temporary refuge from bodily pain or mental distress. Here lies the explanation of the fact that the proportion of drunkards to moderate and habitual drinkers remains so small.

The *Review* writer alludes to the benefits of alcohol in states of prostration, in early phthisis, and in cases of predisposition to phthisis, where sometimes "those who are assisted by alcohol are often enabled to pass the critical period when this disease is wont to develop." He remarks that "among those in mercantile life who pursue their business with such unremitting attention as is necessary to success in American cities, there are many who might escape a premature breakdown under the enormous loads they carry, if they would renounce their total abstinence principles and practices and partake of wine with their meals. They would eat less, digest better, carry fewer worries to their beds, and so be better able to endure a life which moves at a faster rate and higher pressure than any other on the globe."

It is doubtful whether there are facts either to confirm or disprove the above proposition. It is entirely a matter of speculation whether some persons who have prematurely broken down by devotion to mercantile pursuits and by harassing cares would have escaped the fatality had they indulged moderately in some alcoholic beverage. Good authorities have found reason to believe that even a moderate use of spirituous liquors favors arterial degenerations, cardiac and hepatic derangements, especially in the sedentary. This, at least, is the conclusion reached by Harley in his valuable series of articles in the London *Lancet* for 1888.[1] A careful perusal of these articles should lead one to hesitate before recommending business men to become "moderate drinkers." No general rule can of course be laid down, and the physician in his advice to his patrons will have to be guided, according to his best judgment, by the idiosyncrasies and requirements of each individual case. If he carelessly prescribes a bottle of sherry a day to the man who is overburdened with business cares, and this is to take the place of that rest, relaxation, change of scene, and exercise in the open air which are clearly indicated, he is sure to do his patient harm. That some, however, will be benefited by the temporary use of a moderate allowance of such stimulants there is no doubt.

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THE GRAPHOPHONE IN MEDICINE.

It is interesting to note the attempts to apply to medicine the various advances in science and improvements in machinery which are being constantly brought forward. The graphophone has attracted the attention of Dr. Benjamin Ward Richardson, who has recorded in the *Lancet* of March 23rd certain experiments in its use. He found that when the cough is taken as the speaking or singing voice is taken, the return cough from the machine is as clearly distinct as the original. The machine offers various advantages: "To be able to compare a cough of to-day with a cough of a month or a year ago would be a good clinical observation." Such comparison is rendered possible by the preservation of the graphophone records. But for lecture purposes this instrument offers the greatest advantages. Every kind of cough can be taught to the student by direct demonstration.

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[1] G. Harley, "On the Effects of Moderate Drinking on the Human Constitution, London *Lancet*, 1888, 1st vol. pp. 361, 409, 461, 566, 614.

There is something very fascinating in the idea of lectures illustrated by this modern invention. Imagine a course on children's diseases in which the whoop of pertussis can be given at the right moment and compared with the cough of a severe bronchitis, or the snuffle of a syphilitic infant, perhaps as it was heard a month previous, while the same child shows in its own person the improvement under treatment, its present condition being registered for future use. We believe Dr. Richardson is not the only doctor who is trying to render this instrument useful.

MEDICAL NOTES.

— Dr. David W. Cheever, of Boston, has presented to the trustees of the City Hospital the sum of $2,000, the interest of which he wishes to be devoted to the buying of a case of surgical instruments for each house surgeon on the completion of his term of eighteen months' service at the hospital.

— The committee who framed the medical examiner's bill (bill for regulating the practice of medicine) in Pennsylvania have decided to support the amended bill, which gives one-third of the board of examiners to the eclectic and homœopathic schools, each, despite the fact that, as pointed out by the *Philadelphia* (Daily) *Times*, the number of practsiing physicians in Pennsylvania are 6,000 regulars to 700 homœopathists and 300 eclectics. The committee say: "Our bill placed such discretionary power in the hands of the governor, with the consent of Senate, as would have enabled him at all times to appoint those persons, irrespective of medical tenets, best fitted to carry out the intent of the law for the public protection by enforcing higher education; whilst the amendments added by the homœopaths and eclectics will compel him to always select the majority of the board from those practitioners of medicine who, being vastly weaker in numbers, will be subject to the greatest temptation to make the standard of examination a low one.

"Recognizing, however, the necessity for a State examination of all physicians, in order to protect the public from ignorant practitioners, and knowing that all proper graduates of our medical colleges can pass any just and open examination by whomsoever conducted, we propose to offer no obstruction to the bill as at present amended, since the regular profession is not responsible for its defects. It is to be hoped, therefore, that the supporters of the amended bill will at once push it to its final passage, but we, at the same time, earnestly urge upon the Senate and House of Representatives that the gradual lowering of the standard of education, which we believe will follow the practical operation of the bill as amended, shall be prevented by a further amendment requiring every candidate for examination and license to be a graduate of a medical college having at least a four years' graded course of study, existing colleges being allowed to terminate their present contracts with students. To the bill thus amended we pledge our most hearty support."

BOSTON.

— On Wednesday, April 3rd, there were 59 applications for admission to the Boston City Hospital. Of these, 34 were admitted and 25 rejected.

The latter were classified as follows: Ten were referred to the various out-patient departments; four were deferred until another day; three were found to be proper subjects for appropriate State institutions; two had legal settlements in other cities or towns; in two cases more information was asked, and for two there was no room. One was rejected for epilepsy, and one for phthisis.

Of those admitted, five were for diphtheria; four for rheumatism; three for diseases of the ear; two for pneumonia; two for hernia; two for heart-disease; two were entered as "abdominal;" and there was one each of the following list: lacerated cervix; typhoid fever; measles; renal; tuberculous wrist; urinary extravasation; ischio-rectal abscess; rupture of urethra; injury of elbow; wound of face; epithelioma; peritonitis; erysipelas; fracture of leg.

Between the hours of four and seven there were done, as emergency operations, an intubation, a herniotomy and two perineal operations, one being for extravasation, and one for traumatic rupture of the urethra.

During the day the hospital ambulance made five trips, bringing in six patients, with an estimated run of nineteen miles.

— The will of the late Mrs. Turner Sargent, daughter of Dr. Oliver Wendell Holmes, contains, among others, the following public bequests: $5,000 to the Massachusetts General Hospital for a free bed, to be called the "Turner-Sargent" bed; $1,000 each to the Children's Hospital and House of the Good Samaritan of Boston; on the death of both her father and brother, $25,000 is to be paid to the president and fellows of Harvard College for the general purposes of the university, and the further sum of $10,000 in memory of her father, the income to be applied to the use of the anatomical department, under the direction of the professor of anatomy; the balance of the estate to be paid to the issue of her brother, Judge Holmes. Should he leave no issue, then there is to be paid to the Boston Medical Library Association, the trustees of the Museum of Fine Arts, the Massachusetts General Hospital, $25,000 each.

NEW YORK.

— A committee of the directors of the Manhattan Eye and Ear Hospital have issued an appeal for $100,000 to be raised by subscription and to form an endowment fund in honor of the memory of the late Dr. C. R. Agnew. "In the death of Dr. C. R. Agnew," the appeal states, "the institution lost its earliest and best friend, who gave to it, besides his marvellous professional skill, every possible form of needed service. The directors propose, as a fitting memorial of Dr. Agnew, to extend the capacity of the hospital for usefulness by raising an endowment fund, to be called the 'C. R. Agnew Memorial Fund,' the income of which shall be applied to the running expenses of the hospital. Could any movement more fittingly recall his unselfish services to his fellow-men? If he could be consulted, is there any expression of affectionate regard that he would so much appreciate?" It was the long-cherished desire of Dr. Agnew to purchase the property immediately in the rear of the hospital, which for some time past has been used as a livery stable, and which is liable to become very objectionable and detrimental to the health of the patients, and the directors propose to apply as much of the memorial fund as may be required to the purchase of this property. It is believed that the investment will certainly yield a net income of five per cent. per annum, until such time as the needs of the hospital may justify the employment of the site for hospital purposes.

— In a paper read April 5th before the section on Public Health, Hygiene, and State Medicine of the Academy of Medicine, on "The Efficiency of Filters and other Means Employed to Purify Drinking Water, Bacteriologically considered," Dr. C. G. Currier stated that most of the filters in the hands of the public were useless and worse than useless, so far as any protection from disease germs was afforded by them. Of all substances thus far furnished for domestic filters porous porcelain, rebaked and carefully selected, he had found to be the best; though boiling for at least thirty minutes afforded the only absolute protection in drinking water.

— Drs. T. M. Prudden, H. M. Briggs, and H. P. Loomis, the pathologists of the health department have been requested by the board of health "to formulate a brief and comprehensive statement regarding the contagiousness of tuberculosis in man; stating therein the evidence of the same, and recommending in the briefest possible manner the simplest means of protection from its influence."

— The recent subscription to the building fund of the New York Academy of Medicine has been so successful that it is announced that the lots on 43rd street which had been provisionally secured will be definitely purchased on the 1st of May. Among the contributions received are $5,000 each from Messrs. D. Willis James and J. Pierpont Morgan.

Miscellany.

AN INTERNATIONAL CONGRESS OF THERAPEUTICS AND MATERIA MEDICA.

An International Congress of Therapeutics and Materia Medica is to take place at Paris from the 1st to the 5th of August, 1889 — under the presidency of M. Moutard-Martin.

The topics proposed for special consideration are the analgesic antithermics; the antiseptics appropriate to each species of pathogenic microbes; heart tonics; new drugs of vegetable origin recently introduced into therapeutics; unification of weights and measures; the utility of an international formulary.

ON THE TREATMENT OF PLEURISY BY INHALATION OF COMPRESSED AIR.

Prof. Forlanini, of Turin *Gazzette degli Ospitali* and *London Medical Recorder*, Feb. 20, 1889, strongly recommends the above method of treatment, chiefly with a view to promoting the expansion of the compressed lung after the fluid has been évacuated. And even in tubercular cases, which the author considers form more than half the cases of pleuritic effusion, much good is obtained, for the compressed-air treatment increases the appetite and the sense of well-being, promotes tissue change, and generally improves the condition of the patient. The difficulty has hitherto been the complexity and costliness of the necessary apparatus, but Prof. Forlanini has devised a more simple form. The difficulties in the nature of giddiness, palpitation, ringing in the ears, etc., etc., are simply questions of dose and skill in administration, and are not drawbacks inherent in the system.

EXAMINATION FOR THE ARMY MEDICAL SERVICE.

An Army Medical Board will be in session in New York City, N. Y., from May 1st to 31st, 1889, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

There are at present seven vacancies in the Medical Corps, to which one more will be added in July by the retirement of a medical officer, making eight appointments which are to be recommended by this board.

Persons desiring to present themselves for examination by the board will make application for the necessary invitation to the secretary of war, before May 1, 1889, stating the place of birth, place and State of permanent residence, and enclosing certificates based on personal knowledge from at least two persons of repute, as to American citizenship, character, and moral habits. Testimonials as to professional standing, from professors of the medical college from which the applicant graduated, and of service in hospital from the authorities thereof, are also desirable. The candidate must be between 21 and 28 years of age, and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the board.

Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C.

"SCHOOLS" OF MEDICINE AND MUNICIPAL HOSPITALS.

Apropos of the establishment of a homœopathic hospital or wards by the municipality of New Haven, which has been asked for by some citizens and favored by others on the ground of the necessity of recognizing the various schools of treatment, a correspondent of the *New Haven Palladium* judiciously points out that the petitioners have not gone far enough: —

"There should certainly be a ward for the faith curers and the metaphysical healers. Then, too, there should certainly be a surgical ward for the 'natural bone setters.' Ample arrangements should also be made for the warm-blooded and cold-blooded hydropaths — a sanitary process which, of late, is becoming quite too much neglected. One ward should also be devoted to the building up of wasted humanity by the natural food system, same as they have 'down in Boston.' By all means there should be most liberal provision for the practice of the more occult side of the healing art. This would embrace clairvoyance, inner sight, second sight, magnetism, palmistry, Voudooism, etc., etc.

"None of these, or others, are to be neglected because they appear to be new. The newest philosophy may be the best — at any rate for some uses. Other things will doubtless come along more fresh and attractive. So, is it unreasonable to desire that the ground floor of a new sanitarium among us should be capacious enough to add, from time to time, an annex for each new claimant for popular favor, and thus, in process of time, we may hope to have, in the line of restorative methods and machinery, something that will astonish and confound all stupid and moss-grown opposers of progress and reform?"

HYDROPHOBIA IN FRANCE.

M. Dujardin-Beaumetz, the physician of the Hôpital Cochin, has delivered his report for 1888 on rabies in the Department of the Seine, of which the following summary is given in the *New York Herald*: —

The number of fatal cases last year was nineteen. This is largely in excess of 1880, 1883, 1884, and 1885, during each of which only three deaths occurred. But it is below the number of the deaths of last year. Four were due to cats' and fifteen to dogs' bites. In one case the patient was not bitten but only licked.

The period of incubation of the disease was usually from twenty-five to forty days. Cases, however, occurred in which the disease broke out 139, 143, and even 245 days after the biting. Why the period varies so widely is not known. It is probable, so Dr. Beaumetz thinks, that the time is shortest when the number and depths of the wounds and the quantity of poison are greatest.

The diagnosis of rabies is often attended with great uncertainty. In four cases out of the nineteen there was a wrong diagnosis. In one the death was attributed to lockjaw; in the other three cases the disease was believed to be diphtheria, diabetes, and delirium tremens. An examination into the history of those cases proved them to be rabies.

Dr. Dujardin-Beaumetz announces brilliant results for M. Pasteur's treatment.

During the past year 385 patients were treated at the Pasteur Institute; 105 were bitten by animals ascertained by experiment to be mad, 231 by animals which were pronounced rabid by veterinary surgeons, 49 by animals about which there was no information.

Out of these 385 patients only four died, the ratio being 1.04% if the cases of dogs proved to be mad are only taken into account, and 1.19% if all are included.

On the other hand, the official tables show that 105 persons who were bitten by rabid dogs did not apply for treatment to the Pasteur Institute. Among these 14 deaths occurred. This is a ratio of 13.3%.

To sum up, the mortality for uninoculated persons was 15.90% in 1887 and 13.33% in 1888, while for patients of the institute the mortality was 1.14% in 1887 and 1.19% in 1888.

It should be observed that the wounds were far slighter in the cases of persons who underwent no treatment.

Correspondence.

ARE CROUP AND DIPHTHERIA TWO INDEPENDENT AND SUBSTANTIVE AFFECTIONS?

Mr. Editor, — It is certainly a surprise to see how tenaciously the profession on this side of the Atlantic still adheres to the dualistic view on this subject, while the authorities in Germany more than three years ago passed their final verdict that croup and diphtheria *are one and the same disease.*

The fact, however, that croup is not considered a contagious disease in this country, and, being not isolated, is a most terrific source of infection, the extent of which can hardly be measured, imposes on every physician the duty to give this matter its due consideration, and to speak out his protest against the adherence to exploded theories that retards the proper action on the part of the sanitarian as well as the physician. For it is obvious that the sanitarian will certainly not insist on cases being reported that are not considered contagious, and that the physician will blunder in treatment. What a stupendous issue!

Now with these few lines the writer wishes merely to direct the attention of the profession to what is at present considered the final and almost universally accepted view of the German authorities as to the relationship between croup and diphtheria.

Strümpell says: "The anatomical characteristics of the croupous-diphtheritic inflammation consist in the formation of a *fibrinous exudation* (croup-membrane) that in the form of grayish-white, tolerably tough, elastic, and detachable membranes adheres to the *denuded* mucous membrane — that is, to the mucous membrane *deprived of its epithelium* — or besides this is more or less deeply imbedded in the tissue proper of the mucous membrane itself (diphtheritic infiltration with necrosis of the tissue)."

"An essential difference between croup and diphtheria there is not; the diphtheritic inflammation is the graver form, the croupous the milder. In the first we have, preceding the fibrinous exudation, to deal with a necrosis of the epithelium *and* the subjacent mucous membrane tissue, in the second (the croupous form) *only* a necrosis of the epithelium."

If, therefore, Bartholow places his main distinction between croup and diphtheria in the absence of direct implication of the epithelium in *croup,* and the presence of implication of the epithelium in *diphtheria,* while Strümpell and his school prove that the membranous exudation never forms upon the unaffected mucous membrane either in croup or diphtheria, but in place of the dead epithelium, then we must be satisfied that the last anatomical support of the dualistic theory falls to the ground, for we meet with the *same membrane* in both varieties, situated in the one superficially, embedded in the other more deeply. We find in both varieties the same microbes; we find both varieties contagious, cases of so-called membranous croup followed by typical diphtheria and *vice versa.*

In closing I would add another quotation from Strümpell: "In former times croup, that is, the croupous inflammation of the larynx, was separated as a distinct disease from diphtheria, an opinion still shared by some physicians. But this view is entirely opposed to clinical, and above all to anatomical facts. There are certainly cases in which the pharyngeal affection is but insignificant, but the croupous inflammation of the larynx severe. We admit, even, that in some few cases the diphtheritic infection produces only a croupous laryngitis and tracheitis and spares the pharynx entirely. But a real separation of both affections into 'croup' and 'diphtheria' is entirely untenable,as in the majority of cases the affection of the pharynx precedes that of the larynx.

"Besides we must bear in mind how easily pharyngeal changes of a small extent, especially when they are situated on the posterior wall of the pharynx, or on the epiglottis, are overlooked. Those affections named 'ascendant croup' are, to say the least, extremely rare." — Very truly yours,

G. Liebmann, M.D.

DIPHTHERIA.

Pawtucket, R. I., April 1, 1889.

Mr. Editor, — The mortality from diphtheria in Boston for the last two or three years has been frightful. In the memoirs of Bretonneau, Trousseau, Bouchut, Empis and Daviot, 1859, about 10% of the cases mentioned were fatal, whereas the fatality in Boston has been over three times greater, or over 30% of the cases reported to the Board of Health. The observations of these five French gentlemen extended over a period of some thirty years. My investigations led me ten years ago to these conclusions, among many: that the so-called membranous croup is but a phase of diphtheria; that it is a disease of cool and cold weather, as a rule; that it is an inflammation of the mucous membrane of the parts affected; that it is, at first, a local disease, and that it is of a catarrhal origin. Very many eminent men believe that there are "walking cases," and from such Dr. McCollom explains the fact that during school vacation periods, which correspond to the time of warm weather, in Boston, there are a far less number of cases reported. His idea seems to be that when the schools begin, in the fall, and scholars increase their intercourse with each other, that that explains why there is an increase then of the disease. The facts that there is an increase of diphtheria as cool nights set in everywhere, and that the disease in question is one that affects children the most who are under the school age, perhaps did not impress the doctor as much as those facts weigh with me. The weight of clinical facts thus far is that its contagium does not depend upon a specific germ, but that the infection arises from the decay of the false membrane which renders the breath fetid and infecting. Clearly, such was the belief of Dr. Bard, of New York, who described diphtheria in 1771. That all diseases have, like variola, a specific germ, is a pleasant view; nevertheless, that opinion is thus far but an assertion, and therefore, the only safe practice is that which has the sanction of the ablest practitioners. The prime indications are to limit the exudation and render that which has occurred innocuous. For the first, we need expect nothing but harm from the use of leeches and blisters. But a cathartic potion of calomel will certainly accomplish much good in the most of cases; then for the second indication the insufflation of powdered alum or the persulphate of iron. Regarding repetitions of the calomel, each case must be judged by itself alone. It would be idle to expect any good in many cases where the disease has invaded the larynx to a great extent, yet it might in some. I have seen severe and alarming asphyxia disappear on a full catharsis induced by calomel, and also the threatened extension, downward from the pharynx, arrested. No possible good, it seems to me, can be expected from the use of the bichloride of mercury, nor from the internal exhibition of antiseptic remedies, for the human stomach is neither a grist mill nor a chemical retort. Whether true or an error, the germ-theory has led many into the absurd idea that the alleged bacteria of the disease that they may have been called on to treat is to be destroyed by some germicide, given *per orem.* I hear of one physician, in Providence, who gives carbolic acid in order to kill the supposed bacilli of typhoid fever, which, according to Dr. Chapin, health officer of Providence, may live for "thirty years," and the Bergeron plan of treating consumption by injecting into the alimentary canal sulphuretted hydrogen gas, as a destroyer of the bacillus of phthisis pulmonalis! Such therapeutics leads me to think that the poet laureate of our profession[1] composed his poem, "The Stability of Science," with an especial reference to these very doctors. The observations of Dr. Folsom while secretary of the Board of Health of Massachusetts led him to say, at the meeting of February 13th, that "diphtheria prevails the most where catarrhal diseases are prevalent," which accords with the facts generally. While it is so difficult to diagnosticate in all cases of sore throats between what are infectious and those that are not, the only safe plan is to deem any pharyngitis a possible source of infection, and the so-called membranous croup certainly should be treated as a phase of diphtheria. Isolation should be ordered in croup. Probably the infection is in degree in proportion to the rapidity of the decay of the false membrane and the fetor of the breath of a patient. There are no reasons whatever to believe that the infection is as virulent as that of variola. The indications of treatment are to limit the exudation and to render that already formed harmless. The remedies which I have found the most useful are stated above. Disinfecting gargles and nasal washes are also beneficial. and perhaps a solution of permanganate of potassium is among the best. The membrane should not be torn away. The bed is the only proper place for those who are ill of diphtheria. If stimulants be given, champagne is far the best, but I should not give even that until after having given a depurative cathartic of calomel and jalap or rhubarb. Tracheotomy or intubation, when all else has failed, should be tried. — Yours truly,

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[1] Dr. Holmes.

J. O. Whitney, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING MARCH 30, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Typhoid Fever.	Diph. and Croup.	Scarlet Fever.
New York	1,571,558	860	366	21.12	19.68	.60	7.68	6.84
Philadelphia	1,040,245	389	124	13.26	12.48	4.68	3.64	2.57
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	390	184	18.98	21.84	—	9.36	2.56
Baltimore	500,343	156	52	13.44	8.32	—	3.20	3.20
St. Louis	450,000	168	51	16.80	—	1.20	6.60	—
Boston	413,567	200	78	10.15	25.15	1.50	6.50	1.50
New Orleans	250,000	141	20	8.52	14.20	—	2.13	—
Cincinnati	225,000	134	—	10.36	14.80	2.22	4.96	—
Washington	225,000	89	35	11.24	19.21	3.39	3.39	—
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	24	7	12.48	24.96	—	4.16	—
Charleston	60,145	28	8	10.71	14.28	3.57	—	—
Portland	40,000	13	3	—	15.38	—	—	—
Worcester	78,292	41	16	4.88	43.92	2.44	—	—
Lowell	71,518	32	11	3.13	25.00	—	—	3.13
Cambridge	65,552	25	8	16.00	4.00	—	4.00	8.00
Fall River	62,647	23	9	13.05	13.05	—	8.70	4.35
Lynn	53,334	17	3	11.76	17.64	—	5.88	—
Springfield	40,731	12	2	33.33	8.33	16.66	16.66	—
Lawrence	40,619	14	5	35.70	—	14.28	7.14	—
New Bedford	37.253	15	7	13.33	26.66	—	13.33	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	7	1	42.84	71.40	—	14.28	14.28
Salem	29,011	11	2	18.18	—	—	18.18	—
Brockton	28,813	9	4	22.22	44.44	11.11	11.11	—
Chelsea	28,167	10	—	—	10.00	—	—	—
Haverhill	26,058	8	3	—	—	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	4	2	50.00	—	—	—	—
Newton	21,553	9	1	11.11	11.11	—	11.11	—
Malden	19,774	4	1	—	—	—	—	—
Fitchburg	17,534	7	2	28.56	28.56	—	14.28	—
Waltham	17,332	10	1	10.00	—	—	10.00	—
Newburyport	13,875	5	—	—	—	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	—	—	—	—	—	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2855; under five years of age 994; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 450, acute lung diseases 482, consumption 389, diphtheria and croup 170, scarlet fever 88, typhoid fever 41, whooping-cough 33, diarrhœal diseases 32, measles 31, malarial fever 22, cerebro-spinal meningitis 12, puerperal fever 11, erysipelas 10. From whooping-cough, New York 14, Brooklyn 10, St. Louis 3, Philadelphia and Washington 2 each, Cambridge and Somerville 1 each. From diarrhœal diseases, New York 10, Brooklyn 6, Philadelphia and New Orleans 4 each, Baltimore 3, St. Louis, Nashville, Charleston, Worcester, and Lawrence 1 each. From measles, New York 15, Brooklyn 8, Boston 3, St. Louis and Cambridge 2 each, Philadelphia 1. From malarial fever, New York 6, Baltimore, St. Louis, and New Orleans 4 each, Brooklyn 2, Nashville and Lawrence 1 each. From cerebro-spinal meningitis, New York 4, Baltimore and Cincinnati 2 each, Boston, New Orleans, Gloucester, and Fitchburg 1 each. From puerperal fever, St. Louis 4 Philadelphia, Baltimore, and Washington 2 each, Cincinnati 1. From erysipelas, New York 3, Cincinnati 2, Brooklyn, St. Louis, Charleston, Lynn, and Gloucester 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending March 16th the death-rate was 21.3. Deaths reported 3893; infants under one year of age 862. Acute diseases of the respiratory organs (London) 396, measles 163, whooping-cough 102, diphtheria 58, scarlet fever 43, diarrhœa 35, fever 29, small-pox (Portsmouth) 1.

The death-rates ranged from 14.0 in Sunderland to 33.1 in Blackburn, Birmingham 18.4; Bradford 20.4; Hull 22.6; Leeds 24.4; Leicester 17.0; Liverpool 23.1; London 19.7; Manchester 27.8; Norwich 25.4; Nottingham 19.5; Sheffield 24.9; Wolverhampton 23.4.

In Edinburgh 19.7; Glasgow 32.5; Dublin 26.7.

The meteorological record for the week ending March 30, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Mar. 30, 1889.	Barometer.	Thermometer			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
Mar. 24	29.72	51.0	64.0	42.0	42	28		35.0	W.	S. W.		12	12		C.	C.			.00
" 25	29.70	40 0	52 0	36.0	51	52		52.0	N.	N.		16	6		O.	C.			.00
" 26	30.04	30.0	36.0	22.0	47	72		60.0	N.	S.		9	8		C.	C.			.00
" 27	30.01	44.0	54 0	33 0	63	66		64.0	S.	S.		12	7		F.	O.			.00
" 28	29 78	46.0	54.0	34 0	81	80		80.0	S. W.	N. W.		9	8		O.	O.		3.55	.12
" 29	29.95	39.0	51.0	31.0	50	73		62.0	W.	S. W.		12	21		C.	O.			.00
" 30	30.24	32 0	36.0	29.0	48	57		52.0	N. W.	N. W.		18	10		C.	C.		4 15	.01
Means for the Week																			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MARCH 30, 1889, TO APRIL 5, 1889.

Commanding Officer at Los Angeles, Cal., reports the death of Lieutenant-Colonel R. H. ALEXANDER, Surgeon U. S. Army, at 11 50 this morning, March 29, 1889. (Telegram.)

Lieutenant-Colonel CHARLES H ALDEN, Surgeon U. S. Army; Major HENRY MCELDERRY, Surgeon U. S. Army; Captain WASHINGTON MATTHEWS, Assistant Surgeon U. S. Army; and Captain JAMES C. MERRILL, Assistant Surgeon U. S. Army, detailed as members of Army Medical Board to meet in New York City May 1, 1889. Par. 5, S. O. 74, A. G. O., March 30, 1889.

By direction of the Secretary of War, the following changes in the stations and duties of officers of the Medical Department are ordered: — Major JOSEPH R. GIBSON, Surgeon, relieved from duty at Fort Lyon, Cal., and ordered to Fort Sheridan, Ills. Captain A. H. APPEL, Assistant Surgeon, relieved from duty at Fort Sheridan, Ills., and ordered to duty at Fort D. A. Russell, Wyo. Captain GEORGE H TORREY, Assistant Surgeon, relieved from duty at Fort Monroe, Va., and ordered for duty to Fort Brown, Texas. Captain SAMUEL Q. ROBINSON, Assistant Surgeon, relieved from duty at Fort Brown, Texas, and ordered to Fort Hamilton, New York, for duty. Par. 11, S. O. No. 77, A. G. O., Washington, April 3, 1889.

BALL, R R., Assistant Surgeon, ordered to Fort Riley, Kans., for duty. S. O. 36, Hdqrs. Dept. of the Missouri.

JOHNSON, R. W., Assistant Surgeon, reports departure for Whipple Bks., Ariz. Ty., March 25, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 6, 1889.

MARSTELLER, E. H., Passed Assistant Surgeon, ordered to the U. S. S. "Adams."

STITT, E. H., of South Carolina, commissioned Assistant Surgeon, U. S. N.

GATES, M. F., of Pennsylvania, commissioned Assistant Surgeon, U. S. N.

BOYD, J. C, Surgeon, detached from the Bureau Medicine and Surgery, Navy Department, and ordered to the "Yorktown."

GATES, M. F., Assistant Surgeon, ordered to the Navy Yard, Philadelphia.

OBITUARY. EDWARD T. BRUEN, M.D.

Dr. Edward T Bruen, Assistant Professor of Physical Diagnosis at the University of Pennsylvania, died March 31st, of pneumonia. He was sick less than a week, his ailment having been contracted through exposure and overexertion. He was born in Philadelphia in 1851. In early life he attended private schools under the direction of his father, and later entered the University of Pennsylvania, from which he graduated in medicine in 1873. In 1874 he was elected one of the visiting physicians to the Philadelphia Hospital. In the spring course of the University, of 1879, '80, '81, and '82, he filled the position of Lecturer on Diseases of the Kidneys and Urinary Analysis. In 1880 he was elected Demonstrator of Clinical Medicine, and in 1884 was appointed Assistant Professor of Physical Diagnosis in the same institution He was also a visiting physician to the German Hospital. His contributions to medical literature were numerous, one of his principal works being a "Hand-book of Physical Diagnosis of the Heart and Lungs," which ran through two editions. He was also a contributor to Peppers System of Medicine. He was a member of the Association of American Physicians, of the American Climatological Society, and of the Philadelphia County Medical Society. He leaves a wife and two children.

DEATHS

Died at The Hague, Holland, March 24, 1889, Franz Cornelius Donders, M.M.S.S. Hon., aged seventy years.

Died in Concord, Mass., April 6, 1889, Henry Augustus Barrett, M D., M.M.S.S., aged seventy years.

BOOKS AND PAMPHLETS RECEIVED.

The International Medical Annual and Practitioner. As Index work of reference for Medical Practitioners. Seventh year. New York: C. B. Treat & Co.

The Census of Massachusetts 1885. Prepared under the Direction of Carroll D. Wright, Chief of the Bureau of Labor and Statistics. Vol. I. Population and Social Statistics. Part 2. Boston. 1888.

The Principles and Practice of Dentistry. Twelfth Edition. Including Anatomy, Physiology, Pathology, Therapeutics, Dental Surgery and Mechanism, with One Full-Page Plate and One Thousand and Eighty-six Illustrations. By Chapin A. Harris, M.D., D.D.S., Late President of the Baltimore Dental College Author of "Dictionary of Medical Terminology and Dental Surgery." Revised and Edited by Ferdinand J. S. Gorgas, A.M., M.D., D.D.S. Author of "Dental Medicine;" Professor of the Principles of Dental Science, Dental Surgery, and Dental Mechanism in the University of Maryland. Philadelphia: P. Blakiston, Son & Co. 1889.

College Botany. By Prof. Edson S. Bastin. Including Organography, Vegetable Histology, Vegetable Physiology, and Vegetable Taxonomy, with a brief account of the succession of Plants in Geologic Time, and a Glossary of Botanical Terms. Being a Revised and Enlarged Edition of the "Elements of Botany," with nearly Six Hundred Illustrations, largely from Drawings by the Author. Chicago: G. P. Engelhard and Company.

The Question of Interfering with the Abscesses of Hip Disease. By A. B. Judson, M.D., Orthopædic Surgeon to the Out-patient Department of the New York Hospital. Reprint. 1889.

Treatment of Glycosuria. By Charles W. Purdy, M.D., of Chicago, Ill. Read before the Chicago Medical Society, March 18, 1889. Reprint. Chicago. 1889.

The Fiftieth Annual Report of the Superintendent of the Boston Lunatic Hospital, to the Board of Directors for Public Institutions, for the Year 1888. Boston. 1889.

A Text-Book of Pathology, Systematic and Practical. By D J. Hamilton, M D., F R.C S.E., F R.S.E. Professor of Pathological Anatomy, University of Aberdeen. Copiously Illustrated. Vol I. London. McMillan & Co. 1889

The Resuscitation of Asphyxiated New-born Infants by the Suspension Method. By Llewellyn Eliot, M D., Washington, D C, Reprint. 1888.

A Hand-book of Therapeutics By Sidney Ringer, M.D, Professor of the Principles and Practice of Medicine in University College. Physician to University College Hospital. Twelfth Edition. New York William Wood & Co. 1889.

Original Articles.

FEES IN HOSPITALS.

BY HENRY J. BIGELOW.

Whatever a medical officer may think of the right to receive fees from patients for services rendered within the walls of a charity hospital, there is no doubt that its practice would be disadvantageous to the institution. The writer desires to place permanently on file, a few of the hitherto unwritten arguments against such fees.

The excellent general management of some of the American hospitals is well known. Their exceptional comfort, their careful nursing and their elaborate equipment attract to them patients of a higher class than is generally met in such institutions abroad; among these are patients who, no matter what may be their disease, are able to command all that is essential to their personal comfort and proper treatment, elsewhere. Indeed the question has been raised whether some of the American hospitals are not more elaborate than the friends of the poor by whom they were established and are kept up will permanently support. But there is another point which it is the object of this communication briefly to discuss. In satisfying by a certain luxury of accommodation not inexpensive to maintain, a class of comparatively well-to-do patients who are able to pay their physicians, there is always the danger that such a hospital may drift from its original purpose and become more or less a *maison de santé*, the first object of which, is not so much the relief of the poor as the emolument of the practitioner. Medical men, notably specialists, often establish for their private patients very successful private *maisons de santé*, but it is perhaps well to inquire how far what is advantageous to private interests may be disadvantageous to a large public charity.

This question of fees is not a new one, nor is it confined to Boston hospitals. In this country it is not uncommon to hear a physician or surgeon express the wish to be allowed to receive money from his hospital patient, and even his conviction that under certain circumstances it is proper he should; and it happens now and then that a hospital patient would prefer to remunerate his medical attendant. But, it is safe to say that fees in a public charity, however plausibly advocated, do not harmonize with the spirit of it.

There are many objections to such a practice. In hospitals where there are patients by no means destitute, it would be difficult to restrict it. Permission to seek for a pecuniary advantage would undoubtedly lead to an effort to secure it. And not from the wealthy alone, for it is everywhere the willing patient that most readily pays his physician; the wealthy patient is not always liberal, and others may be liberal beyond their means. Emolument will be obtained where it is sought for. Should the practice begin in the private rooms it will easily extend to the wards. Equally, if fees were allowed for a special class of diseases they would rightly be extended to other diseases.

Nor could the permission be confined to one class of officers without doing injustice to the rest. The patient after paying his share of the current expenses of the institution and of the interest on the value of its plant, might properly be asked to remunerate not only his medical attendants, but other persons. The nurses, for example, might claim with justice that if any service was to be remunerated by a wealthy patient, their faithful attention was deserving of recognition. If not, clearly the training schools for nurses, which supply their attendance, should be remunerated for their outlay. The hardworked house officers who, except at the daily visit, have chief charge of the patient, who, especially in the surgical service, largely relieve the visiting officer of the onerous part of his daily duty, and upon whose fidelity the patient is dependent for his comfort, should certainly receive their share of any pecuniary reward. Indeed if the attending physicians are to be allowed to receive fees, why should not the officers of the immense out-patient department be permitted to enjoy perquisites which now are not allowed. A very considerable practice could be established by them among well-to-do patients attracted to that department by the traditionary reputation of the institution, who could be retained by them as their private patients or sent to their friends. The highest resident officer of a hospital, to whom all patients virtually apply, would be also justified in treating medically, out of the hospital, any well-to-do applicant who did not require admission.

The answer to this is that a public hospital is a trust; originally set apart as a charity for the sick, and not for the pecuniary benefit of their attendants. Whatever in a charitable institution is practised for this end, leads to its gradual, insidious deterioration. Once allow fees and perquisites within a hospital, the institution would be legitimately worked for all it is worth, and patients who paid their attendants would be not the worst cared for.

In certain hospitals by-laws distinctly prohibit fees, but there are cases which by-laws cannot cover. Thus, if a medical man, because he has attended a well-to-do patient in a hospital, should charge him on that account, an unusual sum for further attendance after he has left the hospital, no by-law can prevent such imposition. The Trustees should make sure that the patient while in the hospital is so far informed upon the subject, that he shall not pay an excessive demand of this sort through a sense of supposed obligation incurred in the hospital.

Let us at this point mention two extreme cases which are often urged by the advocates of a fee system. The first is that of a liberal and wealthy person, who having met with a serious accident at the door of a hospital, and having been treated with skill and attention in its private rooms, proceeds to pay his bill. After remunerating the institution perhaps doubly, he next desires to pay his surgeon, and unexpectedly encounters a restrictive rule, which seems to be a great hardship to both parties. One hospital at least has provided, to our knowledge, a safety valve for this rare emergency. It says, virtually, to the patient, "Such a practice would not conduce to the general welfare of this institution. But we shall be grateful to you for a further contribution, and the money will be applied to the cure of some unhappy sufferer we should be otherwise unable to receive." There is no injustice in such an arrangement. The medical officer is fully compensated for his services without receiving fees. The distinction of holding his prominent position is well understood, the world over, to be ample remuneration both indirectly in money and in other ways, for any professional service rendered by its incumbent. To be associated medically, and especially surgically, with a hospital in high repute, to share in the experience it affords, to stand as its representative at once before the medical world and the never-ceasing current of patients who are often attracted mainly by its traditionary reputation, is to be largely in debt to it. It has been said, with truth, that these hospital offices would command a considerable premium in money from the best class of practitioners were they annually put up at auction. If however, it should ever be thought that its medical officers were not sufficiently remunerated, it would be less objectionable that their claim should be for salary rather than for fees.

The other case, which not unfrequently occurs, is that of a physician or surgeon who advises one of his patients to enter the hospital with which he is connected. The difficulty here is that every person who applies however recently to a physician for advice becomes technically his patient. Indeed, as happens daily, a person directed by a country practitioner to a medical officer of a hospital merely to secure for him the traditionary advantages of the institution, might, with customary propriety, be entered as his particular patient, and on that ground a fee could be asked from him. In short, a concession of fees in favor of the physician from his particular patient, could include anybody he might place in the institution.

It should not be forgotten that the outside profession must be considered. When the advantages of a hospital, intended by the public as a trust for the poor, are so organized as to divert well-to-do patients from the outside profession who are not allowed to attend them there, they have a clear right to be dissatisfied. In fact they are quite alive upon this point and have repeatedly expressed this feeling. The only justification of a hospital would be that the money of the wealthy patient went to its funds in support of its charities and not to its medical officers.

Another point relating to hospital attendance by a medical officer off duty deserves to be looked at carefully. In Boston a medical officer has a permanent right to attend a patient out of his term of service. In other cities this right is usually an exceptional courtesy temporarily conceded by an officer in regular attendance. Were it agreed that a physician might have patients in a hospital indefinitely, a practitioner of business ability could easily arrange for a permanent body of patients, drawn from a wide range of country, to be daily visited by himself with great economy of time and trouble, to be supervised for his benefit by hospital Trustees, to be nursed by the training school for nurses, and by hospital employés, at a much less expense to the patient than similar care would cost him outside the walls. Such an arrangement might enable the patient to pay his medical attendant readily, but it was not contemplated in the trust instituted by the founders of the charity. There may be occasionally a special reason for it, but a recognized habit of hospital attendance on patients by medical officers out of their term of service, aside from the inconvenience it occasions to the employés, is a first step towards changing part of a hospital into a *maison de santé* for the benefit of the physicians. Add the right to receive fees and the change is complete.

Lastly, though not least important, if a hospital is dependent upon legacies and charitable subscriptions, it should be able to go to the community with clean hands. No appeal in its behalf would excite much sympathy were it known that a portion of the money given was to enable medical men to collect fees more conveniently.

All this may be briefly stated. Whatever diverts the property, the resources or the conveniences of a charity trust, or even the patients who apply there, to the private advantage of its officers, is a form of the spoils system. If wealthy or well-to-do patients are to be from time to time cared for, and there may be occasions especially in surgery when it is convenient to the physician, or better for the patient, while the charges should be such that no mere wish for economy would lead them there, any money paid by them should go to the general funds and not to the officers. If the occasion to receive fees occurs rarely, the emolument may be easily foregone, but if it is so frequent that the right is worth contending for, that fact is an objection to it. Prevention is often the least troublesome cure; it is well to distrust any wedge which might open the way to fees.

The Trustee of a hospital, often a much occupied business man, gratuitously devotes ill spared time to its service because it is a charity. The medical officer also can afford to be disinterested; he is already sufficiently benefited by his position and is at liberty to resign it when it is no longer advantageous to him.

The views here recorded are held by many of the medical officers of our hospitals. They have undoubtedly contributed to the welfare of the institutions. Indeed of one of these hospitals it was lately said, "Its traditions and its charities are at this moment as clean as are its walls and floors."

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A CASE OF TUMOR OF THE BRAIN: REMOVAL; DEATH.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D.,
Physician to Out-patients with Diseases of the Nervous System, Boston City Hospital; and
E. H. BRADFORD, A.M., M.D.,
Visiting Surgeon, Boston City Hospital.

IV. SURGICAL CONSIDERATIONS. (DR. BRADFORD.)

So few cases of operation of tumor of the brain have been reported in detail as yet, that a surgeon preparing for this operation cannot be guided by accepted tradition, and the problems of the detail of the operation present themselves to his mind without the guidance of extensive formulated experience. The following questions which he has to consider, apart from the question of localization or the propriety of operation, suggest themselves: —

First. The size and situation of the flap.

Second. The extent of the opening in the cranium.

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[1] Concluded from page 359.

Third. The exploration of the brain.
Fourth. The avoidance of hæmorrhage.

Of the preparation of the patient for the operation little need be said. The whole head should be shaved, the line of localization should be marked with nitrate of silver, and an antiseptic dressing applied. The patient's bowels should be thoroughly moved the day before the operation, and an enema given the morning of operation. The usual aseptic and antiseptic precautions should be observed rigidly.

The use of ergot and morphia before the operation, according to the suggestions of Dr. Keen[28] and Mr. Horsley,[29] would seem at present an advisable precaution, although it may be doubted (as suggested by Nancrede[30]) whether these precautions are always necessary, and whether they may not, in some instances, increase the danger of shock. They, however, in the present state of our knowledge of the surgical technique of the operations, will be adopted by most surgeons as safeguards — and morphia diminishes the amount of anæsthetic needed.

The Use of Anæsthetic.

Ether was used in the case here reported. In view of the result, namely, death from shock, it is possible that chloroform might have been preferable, but the difference in the stimulating effect on the circulation between chloroform and ether is slight, and the greater risk of the former was the reason of the choice of the latter anæsthetic.

1. *Size and Situation of the Incision of the Scalp.* — All writers are agreed that a semicircular incision is better than the old crucial incision. In the case here reported, the skin was divided by a large semicircular incision reaching from the temporal region downwards and backwards, and ending at the vertex, the convexity pointing towards the occiput. The undivided portion of the skin was about four inches in length, from the beginning to the end of the incision. This incision has the disadvantage of dividing the vessels of the scalp in the temporal and occipital regions, and, as suggested by Mr. Horsley, an incision is preferable with the convexity pointing upwards and backwards so that the vessels of the scalp may be cut across as near to the terminations as possible.

The incision should be made down to the bone and the flap drawn back quickly, containing as much of the periosteum as can be readily separated. Previous to the incision and reflection of the scalp, it is desirable that the skull be carefully marked at the exact site for the application of a trephine, and for this purpose a small drill can be used perforating the scalp and entering the skull at the point at which it is desired that the trephine be applied, so that after the removal of the flap the point of election marked on the flap may not be lost. A ready way has also been suggested by Dr. Park,[31] viz., driving in a small tack.

The question of controlling hæmorrhage in an incision of the scalp is an important one.

In the case here reported, an attempt was made to control the bleeding vessels by means of acupressure, but the method was not found convenient. The application of a rubber tube tightly around the whole skull, just above the eyes, suggested by Starr and used by Weir, and occiput, will be found more reliable. This will not stop all bleeding, but it will diminish bleeding, and is a ready and simple method. The size of the flap varies necessarily with the size of the suspected tumor, but where an opening of two inches in the cranium is to be made the base of the flap should at least be four inches.

2. *Opening of the Cranium.* — The most convenient way of opening the cranium will probably remain by the use of a large trephine, although a surgical engine, not within the reach of every surgeon, will undoubtedly be a help to those who are accustomed to its use. Ordinarily, for surgeons, either a large two-inch trephine will be the most convenient for use, or, in case a trephine of this size is not to be had, two trephine holes, close to each other, and the use of a rongeur and Hey's saw, will answer.

The latter method, however, causes some delay, and speed is to be considered in this, as in all capital operations.

The button, when removed, should be placed in a warm, aseptic solution, kept at blood-heat by means of a water bath, in order that the button be reapplied, as in the cases reported by Macewen and Burrell.

The prevention of hæmorrhage on the opening of the dura is not a matter of great difficulty if the trephine has been carefully used, for, except in cases of adhesive meningitis, the dura can readily be separated from the skull. Where the trephine is placed over the middle meningeal or the sinuses, the trephine should be applied with great care and the button removed, so that there is no possibility of tearing the dura. If this is done, the middle meningeal can be secured by passing a curved needle around it and tying it before incising the dura. The same is true of the sinuses.

The dura should be opened by a semicircular incision, one-fourth of an inch from the inside opening of the skull.[32]

The dura may be opened by first lifting a part with a tenaculum, and by first penetrating it with a knife, and then cutting with blunt, curved scissors $\frac{1}{4}$ inch from the skull edge. This incision was extended $\frac{3}{4}$ of the circumference, the intact portion being above.

When the dura is at all adherent it must be freely incised (Horsley).

3. *Exploration of the Brain.* — In the case above reported the brain was explored with the finger. An exploring needle was introduced first, as it was evident, from the bulging of the brain, that exploration was necessary. Nothing, however, was learned by the exploring needle, and where the cyst or abscess is not expected an exploring needle is useless. In the majority of cases the finger is the best searcher, and, if carefully guided, is the least injurious.

In the present case the cortex was incised for half an inch, and the finger carefully introduced to a depth of three inches. It is difficult to imagine that in any case of tumor of the brain any method of exploration other than the finger can be satisfactory. The consistency of the tumor is either harder than the ordinary brain-substance, or is softer. But the degree of difference of consistency is so slight that it will escape detection at the end of a probe or exploring needle. In all probability, after increased experience in this class of cases, the surgeon will be able to determine, with some degree of exactness, what may be termed the surgical topography of the brain. At present, however, it is not easy to detect by means of the exploring finger more than a difference of consistency and the extent of this difference. The separation by means of retractors of the incision in the cortex for exploration of the deeper tissue is of but little assistance, and is not free from the danger of too great injury to the brain-substance.

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[28] Keen. American Journal of the Medical Sciences, Oct., Nov., 1888.

[29] Horsley. *Arts. cit.* Also Brit. Med. Journal, Oct. 6, 1886.

[30] Nancrede. Medical News, Nov. 24, 1888.

[31] Park. New York Medical Journal, Nov. 3, 10, 17, 1888.

[32] Macewen has recently made a nearly semicircular incision through scalp, periosteum, and bone, without detaching the scalp, and then forcibly raised the flap, bone and all, breaking the bone at the undivided part; thus preserving the button of bone from the greater danger of necrosis in trephining. — *McKann, Pittsburgh Med. Review*, ii. 217. 1888.

In cases of imperfect localization it is probable that a second incision in the cortex and a second introduction of the finger, would be of less danger than the too extensive use of retractors.

Bulging of the brain-substance into the skull opening is a valuable sign of deep-seated tumor, but its absence cannot be regarded as trustworthy negative evidence, as has been shown in several cases. A slight yellowish tinge, or the opposite, a slight lividity, are indications of the presence of tumor beneath in the corona.

In feeling for the growth firm pressure, sufficient to carry the finger below the skull level, or permit it to pass beyond the skull opening, can be made. Further examination is permissible by gently separating the convolutions, the finger nail and a director, by which means palpation beneath the level of the convolutions is possible.

Exploration by a needle through the unopened dura is not advisable (Weir). Even after the dura is cut, this is of doubtful value, as a growth too soft to be felt by the finger would hardly give an appreciable resistance to the exploring needle, and, on the other hand, fatal hæmorrhage has followed this procedure.

4. *Stopping Hæmorrhage.* — Hæmorrhage will always constitute the accident of this operation chiefly dreaded by the surgeon.

Hæmorrhage from the incisions of the scalp can, as has been stated, be checked by the use of the rubber tube about the head.

Bleeding from the diploe, or cut-bone, is rarely dangerous, but, in a few instances, it has proved not only a troublesome, but a serious complication. It can be checked by sponge pressure, or, in case of larger openings in the bone, by means of the insertion of small plugs of wood, or sponge.

Bleeding from the sinuses can be avoided by care in manipulation. In removing the section of bone, the dura should not be torn. If a sinus pass under the trephine opening a curved needle should be passed through the dura and a ligature tied around the sinus before the dura is incised. The sinus, if adjacent to but not under the opening, may be exposed by drawing on the dura and separating it from the skull by a director. The same procedure checks any bleeding from the middle meningeal.

Vessels in the pia can be tied by separating them by means of a director from the cortex and then gently raising them. Great care is necessary to avoid pulling too hard on the ligature, cutting through the vessel. Gentle traction, just sufficient to arrest bleeding, answers best. Slight dural hæmorrhage may be controlled by pressure obtained by iodoform gauze pressed between the dura and skull.

For bleeding from cerebral vessels, caused by removing adherent dura, a solution of cocaine is useful, and solutions of antipyrin have also been used, but these must be made purely aseptic.

For troublesome hæmorrhage from cerebral vessels, which are too deep to tie, Weir advises using clamps, which may be left *in situ* for a day or two. This, however, of course, excludes the possibilty of healing the wound by first intention.

Weir regards this as better than packing with tampons. The latter will, of course, be necessary where bleeding points cannot be found.

The cautery should never be used to control the hæmorrhage.

Removal of the Growth.

An encapsulated tumor may be easily shelled out with the finger and director, or, if this fail, by a Volkmann spoon, the edges of which have been blunted. Also, growths which are not encapsulated, may be removed in this way, with comparative ease.

In one case reported the tumor was larger than the skull opening. In this it was incised, and some of the contents pressed out. This brought the boundaries of the tumor within view.

Treatment of the Wound.

The question of drainage is an important one. For some hours there is an oozing of blood and serous fluid.

Horsley at first insisted upon the necessity of a drainage-tube, carried to the bottom of the cavity, but also emphasized the necessity of its early removal (in twenty-four hours). He more recently advised an early closure, and drained a portion of the flap, at the most dependent portion unsevered, relying on the arachnoid to absorb.

Weir, on the other hand, is inclined to leave the tube for two or three days, especially if the case is doing well.

The question of proper drainage cannot be decided arbitrarily, but will depend for its solution on the individual case.

The dura is stitched with catgut, except at the place of exit of the tube.

During the operation the buttons and fragments of bone are kept in an antiseptic solution, carbolic or bichloride, 1-2000, and at a temperature between 100° and 105° F. These are then replaced over the severed dura. Horse hair or strands of catgut are placed beneath the flap, for drainage, and a thorough antiseptic dressing is put over all.

After removal of the tube the fluid may accumulate and cause tension. In this case, if it be found necessary to relieve this, the path of the tube can easily be opened with a probe. Horsley considers the advisability of this, — a question to be decided in each case, — there being both advantages and disadvantages in so doing. Opening relieves the tension and the attendant symptoms, but does away with immediate healing of the wound as a whole.

But tension has certain advantages: — (1) It allows entire healing by first intention, causing the lymphatics to absorb. (2) This material acts as a kind of scaffolding for the building up of normal connective tissue.

Change of Dressing. — In Keen's case the dressing was done twice daily for a few days, as bleeding and oozing continued. The rules which apply to other aseptic and antiseptic dressings will guide in these cases.

Death after Operation.

The causes of death after operation are as follows: —

1st. Shock from operation.
2nd. Septic inflammation.
3rd. Hæmorrhage.
4th. Œdema of the brain.

The first of these can be prevented in many cases by dexterity in operative detail and by judgment in selecting cases for operation. Septic inflammation is preventable, and, with proper care as to cleanliness and drainage, should not appear as the cause of death. The precautions against hæmorrhage have been mentioned.

There seem to be no means as yet of preventing the fourth cause of death, viz., œdema of the brain, which is urged by Bergmann as a serious objection to the operation. Statistics, however, hardly support the opinion that tumors of the brain should not be operated upon; and the record of traumatic surgery shows that large cranial openings and loss of brain-substance can occur and be followed by complete recovery.

DIAGNOSIS OF TUMORS OF THE BLADDER AND STONE WITH THE CYSTOSCOPE.[1]

BY OTIS K. NEWELL, M.D.,

Surgeon to Out-Patients, Massachusetts General Hospital, Assistant Demonstrator of Anatomy, Harvard Medical School.

In no less comprehensive and recent a work than the sixth volume of the International Encyclopædia of Surgery, published in 1886, less than one page is devoted to the direct consideration of the diagnosis of tumors of the bladder, and this subject has, until recently, been only investigated by what have been more or less indirect methods. The great advance made by the introduction of cystoscopic examination of the bladder cavity may be somewhat appreciated by the fact that within the last year I have been able to collect twenty-nine cases of tumors thus diagnosed. As these include three cases of my own, and as I had, as far as I know, the good fortune to be the first in this country to thus diagnose a bladder tumor, I wish to call your attention, not to the subject in general, with which you are all familiar, but to some of the facts concerning the details of examination.

In the first place, as to the possibility of always getting a clear view of the bladder cavity. In my early experience with the cystoscope I must confess that I felt somewhat as though the process was still a quite complicated one, and that too often I should find a bloody or cloudy urine an obstacle in the way of getting a clear view of the bladder wall, but I can now say, without hesitation, that always, whether in the course of a day or a week, the bladder can be got into such condition that it is no exaggeration to say with Nitze, it may be examined "as with the light of day." We all know how at times a bladder with hæmorrhagic tendencies will seem for a time to bleed at the least touch or after the slightest locomotion, while again this condition passes off and no ordinary instrumentation or movements seem to incite hæmorrhage. In chronic cystitis I have been surprised when examining patients with this complication to see how readily the bladder may be washed out so that for the time being the distending fluid remains sufficiently clear. I will not dwell upon the appearance of the diseased and normal bladder wall under varying conditions. Suffice it to say that in the normal bladder wall we always readily see the bright-colored vessels running through their bed in the pale-pinkish mucous membrane. The uretal orifices are readily made out, and with moderate distention a few trabeculæ may be present. In the diseased bladder, on the contrary, the mucous membrane may be deeply congested and colored, or even covered throughout with slimy, adherent mucus, which floats about in the distention fluid. The trabeculæ are exaggerated according to the nature of the affection.

All this is seen as a varying panorama in the circular field of the instrument according as it is moved in different directions, and thus what has been called a combination picture of the whole field is obtained. Such pictures as are seen in the field at one time are popularly represented as I have drawn them below. The dark line represents the margin of the field and the drawing within a characteristic view of some part of the growth or object seen. Small growths or objects may be seen in a single field.

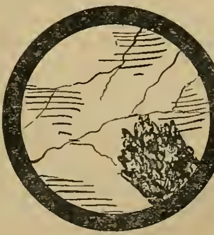

FIG. I.

Fig. I. represents a portion of the first tumor diagnosed by me with the cystoscope. The growth was a fibrous papilloma about three times the size

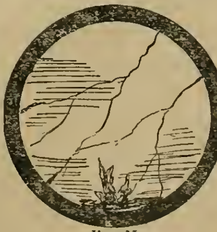

FIG. II.

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[1] Read before the Surgical Section Suffolk District, Massachusetts Medical Society, Feb. 6, 1889.

of the portion shown in the figure, and was from a patient of Dr. M. H. Richardson's, at the Massachusetts General Hospital.

Fig. II. is from the second case and shows part of a recurrent growth floating up from the base of the bladder. This was a case of Dr. C. B. Porter's, also seen at the above hospital. There were no symptoms to indicate need of another operation. The man had married and had children since the first operation.

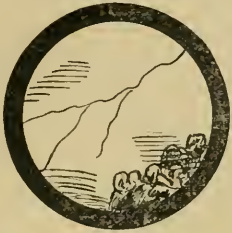

Fig. III

Fig. III. shows view of portion of a tumor diagnosed for Dr. J. C. Warren at the same hospital. The growth was a large one and in the left prostatic portion of the bladder, extending toward the fundus and lateral wall. The patient was not inclined to operation and the symptoms were not imperative.

In diagnosing bladder tumors it is well to remember that a tumor on the posterior wall, or where not hindering urination, may be unaccompanied by pain. Palpation may enable us to detect firm fibrous growths, but not soft papillomatous ones; moreover, with a thick hypertrophied bladder wall and an enlarged prostate, palpation is apt to be very deceptive; renal tumors may, when breaking down, furnish particles of growth pointing to tumor in the bladder where none exists.

Small pediculated growths may be removed from the bladder with forceps introduced through the urethra. Antal in his recent work figures two such cases. The interior of the bladder may be photographed, although this is perhaps of more value in the study of its normal condition than for the portrayal of growths, which may be drawn as made out in the examination, where the field is too often apt to soon become cloudy. With our fearless ether anæsthesia I believe we have a great advantage over our foreign colleagues in the examination of these cases. They appear to be too much afraid of chloroform to use it frequently for the production of profound anæsthesia such as is needed for the satisfactory examination of a sensitive bladder.

In conclusion I wish to speak of the value of the cystoscope in the diagnosis of stone. Certainly any one who possesses this instrument would never think of searching for stone except by its aid. A bladder containing a calculus may be readily washed so as to keep a clear distention fluid and the stone or other foreign body readily seen and located. At the same time the character of it and its surroundings may be readily determined, and anything complicating its removal, such as saculation, prostate formation, or tumor readily made out.

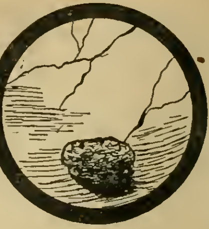

Fig. IV.

Fig. IV. shows a small stone as seen in the field in a case diagnosed by me some time ago at the hospital.

THE BLADDER SUTURE, AFTER SUPRA-PUBIC CYSTOTOMY.

REMARKS UPON SOME OF THE POINTS IN REGARD TO ITS USE AND APPLICATION.[1]

BY F. S. WATSON, M.D.

These remarks are intended to apply only to the suture of bladder wounds made by supra-pubic cystotomy, and do not include the treatment of rupture of the bladder, etc. The subject will be considered first in its technical, and then in its clinical aspect. It should be borne in mind that in the bladder we are not dealing, as in the intestinal wounds, with peritoneal surfaces, consequently there is not in the former the aid to primary union furnished to the latter by the adhesive process usual in peritoneal surfaces, and as a further consequence, failure to unite is more frequent in bladder than in intestinal wounds. As an offset, such failure is not so serious a matter as in the case of the intestine.

Next, I wish to draw attention to the fallacy of inferences in this matter, drawn from experiments on dogs, because a good many published conclusions rest on this basis. This belief I derived from a series of such experiments on dogs, which I made last year, — the conclusions derived from which may be briefly summarized thus: —

1. Primary healing of the bladder wound occurred in every instance, even when there had been a total disregard of antiseptic measures. This occurs because the dog's bladder is covered by peritoneum, and dogs are not liable to peritonitis.

2. The function of the dog's bladder is not so readily disturbed as is that of man, — extensive resections of the dog's bladder and attempts to excite cystitis not being followed generally by bladder disturbance of serious importance.

3. The ultimate results of healing did not materially differ with different forms of sutures used.

4. Silk in two instances caused fistulous tracts from the skin, leading to, but not into, the bladder.

5. The two sutures that most easily and quickly applied were the Dieffenbach and that which Dr. H. W. Cushing has used in the intestine. The Dieffenbach involves more tissue than the other varieties, but I do not know that this is of practical disadvantage.

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[1] Read before the Surgical Section of the Suffolk District Medical Society Feb. 6, 1889.

(Incidentally I will ask you to look at two of the specimens. The first shows one of the disadvantages of penetrating the mucous membrane with the suture, in that stone formation will occur as it has done in this instance, upon that portion of the suture lying within the bladder.

The second is interesting as demonstrating how very smooth and perfect the union of mucous membrane wounds may be, as you see it is very difficult to discover the line of the incision.

6. The needle should be short, as the bladder wound lies deep and in a narrow space, making it difficult to work therein with a long needle.

7. Should silk or catgut be used? If we could count upon primary union, of the wound as a rule, silk would be preferable; but as that is not the case, catgut is the better, for the reason that in case of failure of union, a bit of the silk is likely to be floated upward into the prevesical space (one end perhaps still attached to the edge of the bladder wound), and thus give rise to urinary fistula, or, on the other hand, dropping downward into the bladder, give rise to stone formation, or prevent healing also in that way.

Apart from these technical considerations, the practical results clinically are the more important to know. Should these bladder wounds always be sutured or not? And under what conditions should the suture be applied or not? To answer these questions I will offer a summary of the results of bladder suture in about one hundred cases that I have reviewed for the purpose: —

1. In this series primary union occurred in less than one-half the number (about 35 per cent.)

2. When failure to so unite took place, serious consequences did not result in the majority of instances, and rarely if the outer wound had been left partially or wholly open.

3. The mortality of supra-pubic cystotomies undertaken for similar conditions is somewhat higher in the cases in which suture has been employed than in those in which all the wounds were left open and freely drained. The closure of the outer wound was one of the chief factors in this higher mortality of the former class, owing to consequent urinary infiltration beneath the edges of the outer wound (phlegmon, peritonitis, and septic processes resulting).

4. The less the morbid changes in the bladder in any given case, the greater the chances of successful union with the suture. Thickened bladder walls, irritable bladder, or a foul cystitis making failure probable, and enhancing the danger if it does occur.

5. Silk and catgut record about an equal number of successes and failures.

My personal experience is limited to one case, but it served to make clear to me another indication for not sewing up these wounds, which I emphasized in reporting the case two years ago, and which may be appropriately repeated here, namely: The bladder wound should never be sutured if hæmorrhage of any consequence is liable to occur within the bladder afterward. Such hæmorrhage followed the removal of a papilloma of the bladder in the cases referred to. Shock, which was already marked, was, I think, materially increased by the incessant and violent tenesmus that was brought on by the bladder's efforts to expel its contents of blood clots unavailingly, until the suture gave way after about eighteen hours, giving free exit to the bladder contents and entire relief to the patient, who made an excellent though tedious recovery.

The great temptation to apply the suture arises of course from the much shorter and safer convalescence attending its success, and success, I think it may safely be affirmed, will take place in larger proportion of instances than fifty per cent. if the procedure is not employed indiscriminately, but selection made according to the following rules, which I will offer by way of conclusion: —

1. Employ the suture when the pathological changes in the bladder are slight (as for example, in a young person with a stone of recent formation), or where chronic cystitis has not induced marked vesical change.

2. Avoid the suture in cases in which hæmorrhage is to take place within the bladder subsequently to operation, in irritable or thickened bladders, or when a foul cystitis is present.

3. Whether the bladder wound be sutured or not, the outer wound should be left open for the greater part of its extent.

4. In applying the suture, use catgut and a short needle, and that form of suture most easy of application, two such being the Dieffenbach or Dr. H. W. Cushing's intestinal suture.

The limited space allotted to each separate communication this evening, I have been obliged to condense the subject of bladder suture into barest outline of only the most practically important points, and of necessity these have had to be stated dogmatically as brief conclusions, omitting any liberal consideration of this very interesting subject.

Clinical Department.

A CASE OF TYPHOID FOLLOWING LABOR.

BY J. D. JONES, M.D., UTICA, N. Y.

Mrs. P., aged twenty-seven. Primipara; was confined October 23rd, 1888. The labor was normal. The placenta and membranes came away entire in fifteen minutes after the completion of the second stage. There was no tear of the vagina or perineum. She remained afebrile during the following ten days, and her recovery was satisfactory in every way. She rose November 3rd and had a slight discharge of blood from the uterus after getting up. She remained apparently well till November 16th, when she had a severe rigor. She had a temperature of 103½°; pulse 120, and weak. There was a "lump" in the right breast, attributed by her to the rubbing of the breast by the arm while ironing the day before. The fever was attributed by me to the mastitis, and the breast was bound up, and full doses of quinine and antipyrine administered.

Nov. 17th. No change in the breast. Temperature 105½°; pulse 120, very weak. Bowels confined. As there was a slight discharge of blood from the vagina an examination was made. The womb was firmly contracted and freely movable. No tenderness could be detected by the examining finger or on pressure over the abdomen. The os was closed. She had another rigor.

Nov. 18th. The breast was much smaller and quite soft. Temperature 103½°; pulse 102. She had twenty grains of acetanilide in divided doses the previous evening, and she was thoroughly cinchonized.

Nov. 19th. Morning. Temperature 104½°; pulse 120, and very weak. The breast gave no further trouble, and as it was evident that the fever was not due to that, the baby was weaned. There was a return of the bloody discharge from the vagina. It stopped during the following night and did not recur again throughout the illness. She was given fifteen grains of phenacetine in divided doses. In the afternoon the temperature was 103½°; pulse 120. She vomited once.

Nov. 20th. A.M. Temperature 104°; pulse 120. P.M. Temperature 104°; pulse 140. The bowels, which had been confined heretofore, now became loose. Owing to the weakness and rapidity of the heart's action, and as they had had no beneficial effect so far, the antipyretics were discontinued and she was put on a milk diet and eight ounces of whiskey in the twenty-four hours.

Nov. 21st. Bowels quite loose. Abdomen slightly tympanitic.

Nov. 22nd. The temperature at this time and for the week or ten days following ranged from 101½° to 103¼° and the pulse from 120 upwards. A few rose spots were seen on the abdomen. P.M. Temperature 103½°; pulse 120. Bowels loose.

Nov. 23rd. Eruption abundant.

Nov. 24th. Left cheek flushed. Bronchitis. Pulse very weak. Mind stupid.

Nov. 25th. A.M. Pulse 120 and stronger. She feels much better. P.M. Temperature 103°; pulse 120.

Nov. 29th. A.M. Delirious in the night. Not so much tympanitis. Bowels not so loose. Nausea. (This was not due to over-feeding, as she was taking less than a quart of milk in the twenty-four hours at this time.) Both cheeks flushed.

Nov. 30th. A.M. Temperature 103°; pulse 132 and very weak. Bowels moved twice last night. She was very restless. Cough troublesome. P.M. Temperature 103°.

Dec. 1st. A.M. Lips and teeth covered with sordes. Subsultus tendinum. Delirious, talking of going home, and trying to get out of bed.

Dec. 2nd. A.M. Temperature 100.2°; pulse 120, and stronger. Bowels moved twice — not so loose. Mind stupid. P.M. Coma vigil. Moaning in her sleep.

Dec. 3rd. Delirious all night. Vomited once. Bowels moved twice. She sweat freely.

Dec. 4th. A.M. Sweat profusely in the night. Nervous symptoms much better and she answers rationally. P.M. Temperature 101.8°; pulse 132 irregular and very weak. Vomited once. Bowels moved a little three times. Subsultus tendinum. Less apathetic.

Dec. 5th. Pulse so rapid and irregular that it could not be counted. Delirious.

Regular pulse but very weak. She is brighter mentally. Considerable tympanitis.

Dec. 6th. Restless and delirious all night. Bowels moved four times. Coughs a great deal, and her respirations are accelerated. No physical signs of pneumonia.

Dec. 7th. Bowels very loose during the night. Large bedsore over the sacrum. Delirious. Sweat profusely. Cough very annoying.

Dec. 8th. A.M. Temperature 101°; pulse 132, irregular and very weak. Delirious. Bowels moved twice. P.M. Pulse 120 and very weak. Respirations rapid. Coarse, mucous râles heard over the front of the chest, and subcrepitant over the posterior aspect. (These were attributed to œdema from heart weakness.)

Dec. 9th. A.M. Temperature 97½°; pulse 120, irregular and very weak. She sweat profusely during the night. Bowels moved once. Mind clear.

Dec. 10th. Bowels moved three times. Respirations 48. Cough very annoying.

Dec. 12th. She feels very much depressed. Crying and moaning continually. She has delusions and hallucinations of sight.

Dec. 13th. A.M. Temperature 98.8°; pulse 108, regular and stronger. She slept well last night. Bowels did not move during the night. The bedsore is healing. P.M. Temperature 100°; pulse so irregular and weak that it could not be counted at the wrist. Delirious. Cough much better, and respirations normal.

Dec. 14th. Cries and moans continually and has delusions.

Dec. 15th. A.M. Temperature 98°; pulse 120, weak but regular. Respirations 24. Coughs but very little now. Other symptoms unchanged.

Dec. 16th. A.M. Temperature 97°; pulse 108. Lung symptoms have disappeared. Complains of pain in her feet and limbs. She is quite rational and bright mentally.

Dec. 20th. She is convalescing satisfactorily thus far, considering the prostrated condition in which the disease left her.

Thinking the case worthy of record as illustrating the wonderful enduring and recuperative powers of nature, in an unusually severe attack of typhoid under very unfavorable circumstances, I have simply transcribed my notes as they were made from day to day, without attempting to sift them to illustrate the point of special interest in the case. The difficulty lay in making the diagnosis between typhoid and puerperal septicæmia during the first week. The presumption was, of course, in favor of the latter. It was, however, excluded here on account of the absence of local symptoms.

"In the septic womb," says Watson of Edinburgh, "the os is always open, often admitting the finger easily." In this case the os was closed, the womb was firmly contracted, and freely movable, there was no offensive discharge or tenderness. The repeated slight uterine hæmorrhages were misleading, but Flint mentions them as of "frequent" occurrence in typhoid. Moreover, it was rather late for the appearance of septicæmia. The diagnosis was urgent at this time, for the expectant treatment of typhoid would be manifestly unsuited to septic fever from a retained piece of membrane or clot undergoing decomposition. The subsequent appearance of the diarrhœa, eruption, and other characteristic typhoid symptoms, confirmed the wisdom of our diagnosis.

A word as to the treatment. The administration of the new antipyretics was disappointing, and they were discontinued on account of the threatening condition of the circulation. Merck's tincture of strophanthus was faithfully tried for the heart weakness, but it neither strengthened the beat nor diminished its frequency. Eight ounces of whiskey were given in the twenty-four hours throughout the illness, and the mental disturbance at the subsidence of the fever together with the pain in the extremities may have been due to that, although she appeared to consume that quantity thoroughly.

With regard to the source of infection in this case,—the patient had been using well water, in common with the other members of her own and three other families, but there was no other case. The nurse who attended her in her confinement came directly from the care of a typhoid fever, and the germs may have been carried in that way.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

FEBRUARY 25, 1889. DR. W. L. RICHARDSON, President, in the chair.

DR. O. F. WADSWORTH,—

A CASE OF EXTRACTION OF A BIT OF STEEL FROM THE VITREOUS BY THE MAGNET.

A man, thirty-one years of age, while striking a chisel with a hammer, felt something hit his left eye. He had no special pain then or afterward. He did, however, occasionally notice something appearing before the eye. I saw him sixteen days after the injury. There was a small scar in the cornea, an open wound in the iris behind the scar, and a broad line of opacity running backward through the lateral part of the lens, showing the track the foreign body had taken. The rest of the lens was clear. Except for a few fine threads, the vitreous was practically clear. On movement of the eye a bit of steel could be seen coming into view for a moment from below in the anterior part of the vitreous.

On the following day an antero-posterior cut was made through the sclera, behind the ciliary body and a little below the external rectus, the point of an electro-magnet passed into the vitreous toward the position where the steel had been located, and on the third attempt the steel withdrawn. Only a small drop of vitreous escaped. The eye was kept under a bandage five or six days. There was no reaction.

It is now four weeks since the operation. Vision in the injured eye is nearly $\frac{14}{12}$. The case is an interesting example of how slight damage the wounding of parts of the eye usually especially susceptible to injury may occasionally produce. The steel which I here pass round, is some 3 mm. in its longest direction, and has much the shape of a flint arrow-head.

DR. J. C. WARREN showed a specimen of

FIBROID OF THE UTERUS,

for which hysterectomy was performed. It was a multilobulated affair. The patient was about forty-one years of age. Her general health was very good, but she suffered a great deal from this growth and particularly in the way of neuralgic pains in the leg. She considered herself an invalid, and as she could not afford to be such she was willing to take considerable risk of operation that would give a cure. The operation was performed four days ago and the patient is now doing well, having had no bad symptoms.

The operation consisted in pulling the tumor through the longitudinal incision about four inches long in the median line and clamping it by the clamp devised by Dr. Mixter, and then cutting off the tumor. There were no adhesions. The operation was done with great ease and considerable rapidity. It was the first operation in the new abdominal ward. [One month later the patient was doing well, the wound having nearly healed.]

VESICAL CALCULUS.

Another specimen is that of a calculus formed about the fragment of a catheter which had been four years in a man's bladder. A man nearly seventy years old appeared at the hospital on a Friday in a state of great excitement and desired to have an operation performed immediately. It was done on Saturday. I intended to remove the stone by litholapaxy, but on passing instruments I found he had a very small urethra and the lithotrite entered with great difficulty into the bladder. He had almost the urethra of a child. As he was extremely emaciated and the bladder was quite prominent, and I had to select some other operation, I decided upon suprapubic lithotomy instead of the ordinary operation for lithotomy. It was carried out in a short time. Unfortunately, I discovered I had a crank to deal with who tore off all the dressings and behaved in a very obstreperous way. All the tubes were pulled out indiscriminately, and, notwithstanding that, he lived six days. Under these circumstances, a recovery was hardly to be expected. The specimen shows the catheter imbedded in the calculus.

ABDOMINAL TUMOR.

DR. C. B. PORTER showed a tumor removed by hysterectomy. It was in a woman past middle life although still regular with regard to her periods. The tumor as it now is weighs twenty pounds. About ten pounds of fluid were lost at the time of the operation from the various cysts which were opened. The uterus was dragged so far up to the front that the os could not be felt by the vagina at all. The large mass of the tumor filled the posterior cul-de-sac and pressed it well forward so that there was very little room in the vagina. There was a very considerable amount of ascites and that obscured to a certain extent the positive diagnosis of the character of the tumor before operation, although my opinion was that it was fibrous. The tumor was very adherent to the intestines and to various parts of the wall of the abdomen. The tumor had dragged the uterus so high that I was obliged to dissect the bladder from it and the upper part of the vagina. One ovary is cystic in character; the other is comparatively healthy. The specimen shows the probable presence of a corpus luteum filled with simply blood and clot. The clamp was put on to the upper part of the vagina. In removing the tumor in order to be able to get at the bleeding vessels behind and also to get rid afterwards of the smaller parts, from the clamp this whole mass was cut off with a large amputating knife.

In turning the tumor over one sees more the cystic character of it. There is another tumor coming off from the very top of the uterus itself and this seems to have sprung from the anterior wall. Some of the cysts in the tumor were large.

The operation took an hour and ten minutes on account of the various adhesions. I saw the patient about an hour ago; she was very comfortable indeed and had rallied well from the shock of the operation.

The clamp used was that of Dr. S. J. Mixter.

Drs. P. C. Knapp and **E. H. Bradford** reported

A CASE OF TUMOR OF THE BRAIN: REMOVAL; DEATH.[1]

Dr. Bradford stated that the chief credit in the case was due to Dr. Knapp, as the achievement of localization of the tumor was a brilliant one, the result proving that his diagnosis as to situation and size of the tumor was correct. There is little to be said in regard to the details of the operation.

The skull was trephined, two contiguous openings being made, and a portion of the skull removed by a Hey's saw, making an opening two and a half by three inches. The dura was found tense and the brain bulged when the dura was opened. There was no congestion or abnormal coloration of the surface of the cortex. The cortex was incised, the finger inserted, and the tumor gradually separated from its base and turned out.

Dr. Brainerd: One word with regard to etiology, as to whether injuries of the head have anything to do with the subsequent development of tumors. The patient came into my office with the account of an injury received in 1873. While getting off from a horse-car he stumbled and struck his head. He was stunned, but soon picked himself up and went home. He felt dizzy and sick to the stomach. The next day he was at home away from school, and the day following he had convulsions. Another point in the symptomatology was the complaint of a great deal of thirst. He drank an unusual amount of water. While at his business his employer often spoke to him and asked why he drank so much water. Towards the last the heat and burning in his throat resembled that of a hot iron. These are the only points in my notes not brought out by the reader.

Dr. J. J. Putnam: I think that the best addition I can make to the communication of the evening will be to present briefly two or three specimens from cases I have observed myself, with a very few remarks. I have had opportunities of making seven autopsies in cases of cerebral tumor, if Dr. Newhall will allow me to include the last one in that list. Out of these seven cases two, it seems to me, could be considered as operable. The last one was recently in the Massachusetts Hospital under the care of Dr. Warren. This was a policeman in middle life. He had received a number of injuries to the head, though he was not actually aware that he had received any especially severe one at the site of the tumor. I first saw him in consultation with Dr. Coleman of Lynn, last spring. He complained of intense headache and had had two or three convulsions. I found a double optic neuritis, and while I was examining his eyes the patient had a slight spasm, with partial loss of consciousness and slight movement of both sides of the body. It passed away very quickly. I suggested later his coming to the hospital; and he came a few months ago. While he was there no spasm, I think, was seen by anybody but myself, and that accidentally. I was passing through the corridor and saw him sitting on a bench near the amphitheatre and leaning over toward the left and looking a little dazed. He evidently recognized me, but did not answer questions. His body was inclined strongly to the left; the left arm twitched at the shoulder; the head inclined to the left but not rotated. The knee-jerk was relatively increased on the left side and this remained some little time after the spasm had passed away and consciousness returned. He remained stupid some little time. After a time he went home, and in the course of a few weeks he died.

While the patient was in the hospital we attempted a diagnosis, and arrived at one which turned out in the end to be accurate; and as I think it presents certain points of clinical interest I should like to say something about it.

In the first place, the fact that he had signs of great pressure within the cranium indicated the presence of some tumor. Then, he was found to have an optic neuritis much greater on one side than the other, as Dr. Wadsworth will remember, the prominence of the disk on one side of the tumor being quite excessive. The pain that the patient complained of was almost invariably referred to the right side of the head, especially near the temple, and there was tenderness on percussion there, but not sufficiently marked to allow of determining the site with accuracy. Then we had this one spasm which I saw, and that involved the muscles of the trunk and the shoulder. Then, also the arm and leg on the left side, the side opposite the tumor, were very slightly weaker than on the side of the tumor.

This tumor was found occupying almost the entire caudal half of the second or middle frontal convolution, extending backward as far as the prefrontal sulcus.

The anterior portion of the tumor was found to be more resistant than the brain around it; and I think the resistance was sufficiently greater — there being also a sort of capsule about it — to have made it possible to remove it. Farther back, the tumor was much softer than the brain and had a translucent appearance, and although there was a distinct line of demarkation, the difficulty of removal would undoubtedly have been greater and undoubtedly it would have had to be spooned out. It seems to me it might perhaps have been removed, and at any rate, although it would fall into the general class of gliomatous or sarcomatous tumors, it was not an infiltrating tumor; it was surrounded by quite a distinct wall. The case is interesting from the fact that the indications we had of it, although not sufficient at the time to warrant an operation, yet led to the correct supposition. It was believed to be probable that there was pressure on the motor area, causing a slight degree of weakness without actual paralysis or any great secondary degeneration following down the motor tract, and this slight convulsion of the shoulder and the pain on the right side, and the much greater optic neuritis on that side, led us to suspect a tumor in front of the upper third of the motor convolutions.

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[1] See pages 325, 353, and 373 of this Journal.

Dr. Seguin in a recent review[2] of some of these questions speaks with a good deal of asperity of some of Mr. Horsley's investigations, and especially says that in his belief the second frontal convolution is concerned with the movements of the face. In this case that is evidently not so: the movements of the face were not at all affected, and that would coincide with the opinion of Horsley, and I think of most persons, that these movements are represented in the lower part of the central convolutions, and not in the second frontal convolution.

As to the functions of the frontal lobe, it is thought by Ferrier and others that movements of the head and eyes are represented there, and that view is so far substantiated that in this patient the head was strongly inclined to the left during the spasm. The movements of the trunk muscles are now known to be mainly represented in the median surface of the brain at the part corresponding to the motor area, and contiguous to this tumor.

Case 2: This case, I think, could have been operated on. The only indications in the way of localizing signs was a slight degree of facial paresis toward the end of the patient's illness. The tumor was a hard mass which, so far as consistency was concerned, could have been taken out with the greatest ease, — attached with the merest pedicle to the dura mater and the sphenoid portion of the temporal bone. This great hole seen in the brain is not a destructive lesion, — simply the results of compression. The lips of the fissure of Sylvius are pressed apart to the extent of three inches, and all the convolutions in the neighborhood greatly compressed.

The case has already been reported.

The third specimen is a small fibroid tumor of the size of a walnut, which was found at an autopsy, or in a dissecting-room subject. It had produced indentation but absolutely no injury of the brain tissue.

A word with regard to the case I hoped to demonstrate this evening. Two years ago a patient was under treatment at the Massachusetts Hospital. The symptoms consisted in an extraordinary protrusion of the eyes and deafness on both sides, with otorrhœa and double facial paralysis, and a very extraordinary deformation of the skull. Dr. Fitz, I think, first suggested the diagnosis, and I afterwards reported the case to the Neurological Association. It was evidently hyperostosis cranii. Cases of this diffused thickening seem to be quite rare. The cavities of the head, including the cavities of the orbit and often the foramina, are greatly diminished in size, and the symptoms of which the patient suffers are those of tumor to a considerable degree.

A few weeks ago a young man of eighteen turned up at the hospital presenting very much the same appearance, and on further examination it turned out that he without doubt was suffering from this disease. The symptoms are, complete deafness, with no disease of the middle ear; headache, mental dulness, and double optic neuritis. On the top of the head are two large, flat exostoses somewhat analogous to those seen on this skull. They were recognized when he was five years old and were then about the size of a pea. They have grown since he has been under observation. The question is whether they are not to be regarded essentially as tumors, and whether it is not a very proper case for operation for the removal of portions of the skull, particularly those where these masses are the most prominent, because he has suffered constantly with headache and obliged to give up work from time to time and lie in bed; and it is known that when there is a prominence on the outside there is apt to be a prominence on the inside. It seems to me that two large holes in his cranium which will allow a certain play of the dura mater might give a good deal of temporary relief, which otherwise he cannot hope for.

Dr. J. O. Greene: I examined the man very carefully but the examinations were not at all conclusive in any way.

Dr. Wadsworth: I don't think I have anything to add. When I examined the man he presented optic neuritis which gave no aid so far as localization is concerned. The localizing symptoms which possibly might have been presented by the muscles his mental condition prevented my getting. If there was paralysis present I could not make it out. One thing was said or quoted by Dr. Knapp in regard to optic neuritis being an objection to operation on account of loss of sight. It does not follow by any means that because there is optic neuritis there need be loss of sight. An optic neuritis of very large degree may exist without there being practically any loss of sight; and I have seen such a neuritis recovered from entirely and sight remain almost perfectly normal. I have in mind a particular case — syphilitic — where the neuritis was very marked and vision very little affected at any time.

Dr. M. Prince: I think the case reported a brilliant one both from neurological and surgical standpoints.

There are one or two points on which I may say a word or two which are of some interest. First, the relation between the sensory disturbances and the cortical lesion. As Dr. Knapp has said, the question is an open one at present as to the location of the sensory centres, whether in the motor cortex or not. Curiously enough there are a great many cases on record where lesions fairly circumscribed, quite well limited in the cortical region, have been accompanied by sensory disturbances: on the other hand it is strange that there are cases where not only there have been lesions limited to that area, but pieces actually cut out in surgical operations and yet absolutely no loss of sensation has followed in the parts innervated by the excised cortex; so that the question is, what is the explanation of it? The fact that the centres for sensation are in the motor cortex is strengthened by the anatomical fact that sensory fibres have been traced running towards the parietal lobule on the portion near the motor centre.

In this particular case I was inclined to regard the sensory disturbances as due to pressure upon the internal capsule, inasmuch as there was a spastic condition of the muscles in this case as well as hemiplegia. This showed that descending degeneration had taken place and it seems probable that there was also pressure upon the sensory fibres of the internal capsule.

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[2] Annual of the Medical Sciences, 1888.

It seems that the tumor was deeply seated and you can't tell how deeply. Dr. Knapp says it went way down towards the basal ganglia.

Another point: From a surgical standpoint it is important to distinguish between cortical and subcortical tumors. Unfortunately it is impossible at present with any degree of certainty to differentiate between the two. We have not any firm basis, any decisive points on which we can rely. As Dr. Knapp has said, there are a number of points which, on the whole, favor a cortical origin of given symptoms and a number which favor a subcortical origin. But there is nothing on which we can rely. When you come to remove a deep-seated subcortical tumor it seems as though you were artificially imitating what nature does in disease, as when a hæmorrhage takes place in the brain. A large profuse hæmorrhage at the base of the brain is a very dangerous thing, and, of course, leads to profound shock. When we have to cut deep and remove a large-sized tumor it is evident there must be more or less crushing of the tissues round about it; you must go round it and press and crush the surrounding tissues: great shock must result, so it seems that we shall have to distinguish in the future very precisely between the cortical and subcortical tumors as determining whether an operation is likely to give good results.

To be sure, one very large tumor has been removed by Keene. It was subcortical, in one sense; that is, it extended down to the basilar ganglia. But it arose from the cortex. He did not have to go down through healthy tissue and peel it out. The removal of such a tumor would not give rise to so much shock as one deeply seated. It seems at present as if the possibilities of the operation may be limited by the depth at which tumor is placed, and that an object for future study may well be some mode of differentiating between cortical and subcortical tumors.

Dr. Bullard: In regard to the right-angled square I think that the objection Dr. Prince gives can be remedied if these are made of flexible lead.

I wish also especially to emphasize the point mentioned by Dr. Knapp in the beginning of his paper, that it is very important that we should have detailed accounts of all cases of cerebral surgery in which tumors have been removed, and also of all cases of cerebral tumors which are found at autopsies, the symptoms of which have been carefully observed during life, in order to enable us to localize more exactly and to give us as many data as possible on which to base our statistics.

It is very important to distinguish between cortical and subcortical tumors. This distinction at present probably cannot be made in the large majority of cases; but there is reason to hope as we localize more closely we shall be enabled to do this; and the importance from a practical point of view is certainly very considerable.

Dr. Knapp: I wish to say a word or two in answer to Dr. Prince's suggestion about making a distinction in operating between cortical and subcortical growths. In Seguin's case, which was successful and was doing well up to last September, the tumor was rather deeply seated below the cortex, although it was not of large size. My measurements were taken with as much precaution as possible against the twisting of the square, and I do not think it twisted very often or enough to make much difference in the results. Broca's method is thus proven to be untrustworthy, and we now have a method which is accepted as accurate, so that there is no need to go back to Broca's method. My tables of recoveries show merely the cases that have recovered from the operation, and the cases as yet are very few. Of the seven recoveries, one died in six months from recurrence of the growth, — an infiltrating glioma, — which was not wholly removed. One was a fibroma, and here there is no reason why it should recur. Two were sarcomata, and in one of these Dr. Seguin told me that he feared a recurrence. Of the two cases of tubercle that recovered, I know only that they recovered with fairly good results, but in one case the man had occasional convulsions afterwards.

Dr. G. L. Walton reported a case of

BRAIN TUMOR,

and showed the specimen.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

G. H. MONKS, M.D., SECRETARY.

A meeting of this section was held at 19 Boylston place on Wednesday, February 6th, Dr. E. H. Bradford presiding.

The first subject of the evening was

SUTURES OF THE SKIN.

Dr. G. H. Monks described a method of burying sutures in the deeper layers of the skin, by the use of which the edges of incised wounds might be held permanently in apposition, thus avoiding all danger of subsequent scars from stitch holes.

This suture was particularly of use in exposed parts of the body, such as the face, neck, and hands, where the avoidance of all unnecessary deformity from cicatrices was of some importance. The suture should be a continuous one, of fine silk or catgut, and should be placed horizontally, the needle being made to pass from one lip to the other several times to the end of the wound, where a knot is to be tied and buried. This stitch was first used about two years ago, and resembles that recommended by Dr. H. W. Cushing for sewing up the intestine.

Dr. F. S. Watson: I was much pleased with the idea of the suture which Dr. Monks has described, and have used it in the Out-Patient Department at the City Hospital for about two years. It seems to give complete satisfaction, except that in certain cases the cicatrix seems to be somewhat broader than when the ordinary method is used, and this is probably due to the fact that the papillary layer is not so tough as the epidermal layer, and therefore stretches more easily.

Dr. F. B. Greenough: It occurs to me that this suture might be of considerable value in those rare cases where there is a tendency to keloid growth in the stitch-holes.

Dr. H. W. Cushing: I have closed a large number of incised wounds with the suture described by Dr. Monks, and have obtained very satisfactory results. A change of dressing to remove sutures is avoided, and the resulting cicatrix is smaller than one following a wound closed by the usual interrupted suture. Unless carefully inserted, however, the closure of the wound is not accurate. It therefore requires more time than an interrupted suture; but where this is of no especial importance and the resulting scar at a conspicuous point, it has proved a very desirable suture.

Dr. S. N. Nelson: What dressing is used after uniting the skin with the buried suture?

Dr. Monks: Iodoform, absorbent cotton, collodion.

Dr. Nelson referred to excellent results after using the buried continuous animal suture in the deeper layers of the skin in the manner just described by Dr. Monks. What is needed is: (*a*) coaptation, and (*b*) retention. When the skin has been united in this way, the ordinary dressings that were formerly considered to be necessary for a long time after antisepsis was introduced can be omitted with safety in most cases. The dressing mentioned by Dr. Monks is, as a rule, all that is necessary. Before the iodoform collodion will adhere satisfactorily the skin must be thoroughly dried. This is accomplished, after wiping with absorbent cotton, by blowing with the iodoform blower, the small amount of iodoform that adheres to the skin being an advantage rather than otherwise. If the wound is aseptic, iodoform collodion can then be applied, and while still moist, a few fibres of absorbent cotton can be incorporated into it, which will give additional strength. Generally nothing further is required.

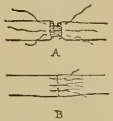
Dr. M. H. Richardson, in connection with the subject of

THE SUTURE OF DIVIDED NERVES AND TENDONS

said: I have very little to add to what I have already said on this subject. Since the publication of a second series of cases of nerve suture[1] I have had some additional experience in the suture of large nerves, both primary and secondary. I have come to the conclusion that catgut is superior to silk, because there is less danger of neuritis and subsequent suppuration. Where I have used fine silk there has been once or twice pain with discharge of the stitch.

In the application of the suture care should be taken first to make both ends sharply cut and even. Before applying the first suture the ends should be let fall into a natural position in the bottom of the wound. In most if not all cases they will take their natural positions. A fine round needle threaded with catgut is then passed through the neurilemma of both nerve ends, very close to the cut surface. As soon as a nerve-trunk is cut a retraction of the neurilemma takes place, beyond which the nerve-bundles project. When the suture is drawn tight care should be taken that the projecting nerve-ends are wholly included within the sutured neurilemma.

In the suture of tendons the main difficulty is in fastening the cut ends so that the stitches will not tear out. I have accomplished this by using fine silk in very numerous stitches, placed so closely together around the entire circumference of the tendon as to resist successfully the constant traction of the muscle. My first case of complete division of the flexor tendons in the palm sewed up in this manner made a complete recovery with a perfectly useful hand. The patient, a woman, was leaning on the handle of a bread-knife, the point of which was stuck into the table. Suddenly her hand slipped and the palmar surface slid down the sharp edge of the steel. Both superficial and deep tendons in the index, middle, and ring fingers were entirely divided. In this case everything was clean and the wound an incised one. It was a very favorable one for tendon suture. A very tight and strong joint was easily made in the manner described, and healing by first intention, with ultimate usefulness of the fingers, followed.



A, Cut ends of nerve, showing sutures applied ready for tying. B, Same, knots tied.

Dr. S. J. Mixter called attention to the importance of taking tension off the point where the divided ends of a tendon are sutured, and declared that much would be gained by stitching the upper end of the tendon to its sheath above the point of division.

Dr. H. W. Cushing described a

BURIED CONTINUOUS SUTURE FOR INTESTINAL WOUNDS,

(which had been first presented at the meeting of the Surgical Section May 5, 1886), and demonstrated its technique by drawings, diagrams, models, and specimens.

Dr. M. H. Richardson said: The experience I have had in suture of the intestine is limited to two cases. Both were complete resections for gangrenous hernia. In both I used the interrupted Lembert stitch in a single row. The first case lived twelve hours, but long enough to demonstrate the strength of the joint. The second case was exactly like the first, the joint being, like that, very perfect in every respect. This case made a rapid and uneventful recovery. In closing a wound of the stomach I believe the stitch of Lembert to be the best, and perfectly satisfactory. I have used it but once, but in this case I applied some thirty-seven stitches. Recovery followed. I do not see how any method of suture can be simpler or more efficacious than the Lembert. A great point in its favor is the extreme rapidity with which it can be applied. In my two intestinal cases not over twenty minutes was taken in the application of the stitch itself, and the same was true in the gastrotomy. This is a very important point in those cases of acute intestinal disease requiring excision of the bowel, for the patient is almost always in a state of extreme exhaustion, and unable to survive the shock of prolonged intestinal manipulations.

Dr. A. T. Cabot: One advantage of interrupted stitches, it seems to me, is that if they are inserted in a distended bowel they are not loosened where the bowel contracts, as must be the case when a continuous suture is used.

Dr. Cushing: In my experimental work I have not observed what Dr. Cabot mentions. The tissues seem to grasp the suture so that it does not slip through them. In cases where it has been used in the living subject this danger from relaxation of the suture has not been observed.[2] Dr. Cabot's remark recalls an objection which applies to the "Lembert" interrupted suture unless it is so formed as to guard against it. Practically, this is an excellent suture. It is the simplest one and the one most readily learned, a fact, I think, which explains its great popularity. It has, however, this fault, that the individual sutures separate during distention of the intestine.[3] The inverted edges are narrowed by this tension, and it then becomes possible for them to evert and prolapse outward between the separated sutures, with fæcal extravasation as a result. This can be readily demonstrated on an intestine.

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[1] See Boston M. & S. Jour., Feb. 9, 1888.

The objection has been raised to the "Right Angle" continuous that it forms a "constricting" circle round the intestine during distention. If the suture is studied it will be found that this is incorrect. By crossing continually from one wound surface to the opposed one the circle is interrupted. Also since it does not include the mucous membrane this portion of the intestine is at no point compressed. These facts explain, I think, why no trouble has followed from such a source in those opportunities where I have used this suture to close wounds in living intestine.

This so-called "constriction" is, I think, an advantage rather than a disadvantage, since during distention the suture becomes more concealed by the serous surfaces on either side of it, becoming more and more approximated in proportion to the increase in diameter of the intestine. Since this approximation of serous surfaces is the element on which we depend in intestinal sutures to secure union, this change during distention is a favorable condition rather than an impediment to the desired result.

Dr. Richardson: How quickly can this continuous stitch be inserted as compared with the interrupted one?

Dr. Cushing: I think that one saves from one-third to one-half the time required by the "interrupted" method.

Dr. Bradford: I should like to bear testimony as to that. In a case of resection of the intestine I used a Lembert part way round, and Dr. Cushing finished it by his method, which was apparently much more rapid. Perhaps I could not apply the Lembert stitch rapidly enough, but I found the tying of so many knots used up much time. This time is saved by Dr. Cushing's method.

Dr. Cushing: The shortest time in which I have succeeded in closing a resection wound in human ileum with the Lembert suture has been fifteen minutes. With the "Right Angle" I have united similar wounds in five and nine minutes. The last opportunity I had to unite a resection wound in a living human intestine the suture was finished in eight and two-thirds minutes.

Dr. O. K. Newell: I think Dr. Cushing's suture is distinctly his own and ought to be called the "Cushing suture." I think perhaps you all will recall the paper I read on intestinal suture, in which there were fifteen figures in regard to it, and I think all that has been considered and written with reference to this subject was there given, except Dr. Cushing's suture. I think there is, however, one fatal objection to the continuous suture that has not been considered to-night, and it is that if any part gives way the whole suture is loosened. That is the only objection. I suppose no man has had so much experience in intestinal suture as Prof. Madelung, who has always used the interrupted suture of Lembert.

Dr. Cushing: In answer to Dr. Newell's objection to continuous sutures: it is a fact, I think, that, unless such loosening as he describes occurs within a few hours after operation, the suture is so securely sealed in by the agglutination of the opposed serous surfaces that such an accident would be improbable. The chances that the suture would tear out enough during these few hours immediately after an operation are very small. If the suture is set in normal tissue, as it always should be, it will require considerable force to cause it to give way. In some experiments which I made, the intestine burst at a point near the mesenteric border without the suture leaking, although it had begun to tear badly.

Dr. Newell: One thing that surprises me is that we use catgut so much. I think the foreign operators use catgut scarcely at all. I wanted to ask Dr. Richardson if the fact that pain followed silk sutures was suggested by his experience in a number of cases or was simply a surmise. I think no suture is so well borne as the silk suture. I think the great trouble is in preparing the sutures properly. The great advantage of silk over all other sutures in nerves and tendons is that you make the smallest possible hole with a 10, 11, or 12 ordinary cambric needle.

Dr. Newell then showed a

PRACTICAL HOLDER FOR SILK.

It consisted of three small jars neatly fixed in a small piece of board. These jars were nearly full of alcohol. In each was a spool of silk, the end running out under the cover. When one wished to use some of this it might be drawn out, the portion which was outside broken off and thrown away. In this way the spool of silk was always kept under alcohol, which rendered it sufficiently aseptic.

Dr. F. S. Watson made some remarks as to the

SUTURE OF THE BLADDER AFTER SUPRA-PUBIC CYSTOTOMY.[4]

Dr. Henry O. Marcy stated that he had been very much interested in the papers and discussion. He had himself for years made a careful study of sutures, and was assured from his own experience that sutures applied as advised by Dr. Cushing should be commended. For the intestinal suture, he thought a modified continuous Lembert stitch much the best, using a fine Hagedorn needle.

In the use of the animal suture, catgut or tendon, the latter much preferred, the advantage of the continuous suture is manifest; because of multiplicity of knots the interrupted animal suture is unsafe and ill-advised. Used as a continuous stitch the strain upon the enclosed tissues is uniform, since the constricting force is distributed through the whole number of stitches taken. The sewing in this way is rapid, diminishing the time at least one-half. Coaptation is also much more uniform and perfect. In resection of the intestine, which he had done a number of times, Dr. Marcy, after joining the divided mesentery, coapted the mucous coat with a running continuous suture and then inverted the peritoneal covering with a continuous double Lembert suture, and thus made this row a line of *buried* sutures by following it by a second row of stitches taken in the same manner about one-fourth of an inch outside first. The time taken in so doing is inconsiderable, and the certitude of closure is very great. The intestine of an animal thus carefully joined will hold the pressure of a column of water.

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[2] Rydygier, Berl. klin. Wchnschr., 1882, 577.

[3] From 2-3 to 6 7 mm. Reiches Deutsche Zeitschr. f. Chir, Bd. xix 230, 287.

[4] See page 382 of this Journal.

Dr. Marcy had on one occasion, in performing a hysterectomy where the bladder was drawn up with the tumor, inadvertently opened the bladder. The wound was closed in this manner and convalescence ensued without accident. In the case of a child scarcely two years old, a patient of Dr. Titcomb of Concord, where there was a fistulous opening from the bladder into a large purulent cavity supervening upon appendicitis, the bladder wound was closed in this way, and also two large openings into the large intestine, followed by a perfect cure.

The use of the animal suture in continuous layering as a buried suture, Dr. Marcy thought marked a great advance, almost a revolution, in the treatment of all operation wounds. If aseptically applied in healthy tissues, securing thereby a careful approximation of the divided parts, drainage is unnecessary; a running stitch lightly taken through the under layer of the skin secures a perfect coaptation, and is unseen, — a buried suture. Iodoform collodion, reinforced by a few layers of cotton, completes the dressing. The wound, if aseptic, remains so, and repair goes on as in a subcutaneous wound. Dr. Marcy spoke further of the importance of the proper preparation and preservation of sutures and gave his decided preference to the tendon from the tail of the kangaroo.

Dr. J. Homans: I have twice wounded the bladder in ovariotomy and each time sewed it up with silk without any special pains, except to enclose the mucous coat. Both cases recovered and have never had any trouble at all since. In these cases the bladders were perfectly healthy, different from those Dr. Watson speaks of. It makes a great difference, of course, whether the bladder is diseased or healthy.

SUTURING OF BONE.

Dr. A. T. Cabot in introducing the subject said: In the first place, I will speak of the union of bones in cases of excision of the knee. I think the first thing to do is to get along without a suture if you can. Oftentimes if you excise a knee that is flexed so that the tissues behind the knee are a good deal contracted you will find on bringing the leg down straight that the bones are kept well in place by the contracted tendons behind the knee, so that you don't need any sutures.

Last year I tried in two cases the method of nailing the bones together which has been spoken of abroad, and unfortunately neither case turned out very well. I don't think it was the fault of the method, but of an accident. One case — a woman over fifty — had scrofulous disease of many years' standing. The wound healed by first intention. The nails were taken out at the end of a fortnight. They were entirely loose in the tissue, and I hoped for good results. I got unfortunately a fibrous union which left the knee with a certain amount of lateral motion, not strong enough to walk upon. A year and a half later she came to see me again, and that time I wired the knee and got a firm bony union.

The other case was one of tuberculosis. The child had a spinal disease as well and succumbed to the general tuberculosis before the knee was healed. In both cases the striking feature was that the nails were entirely loose at the end of a fortnight.

With regard to wiring the patella: last summer I met with a difficulty which puzzled me at first. I was called to see a man with compound fracture of the patella, also compound fracture of the femur on the same side, and simple comminuted fracture of the other patella. I operated on the compound fracture of the patella and found the joint filled with little cubes of cartilage and scraps of bone. All these were cleared out and we had a small, triangular bone attached to the end of the quadriceps, and a very small fragment below.

My father wired a patella in 1865. He cut down and carried the wire completely around the fragments of the bone and the tendon. So far as the immediate result of this went all was satisfactory, but unfortunately the woman developed phlegmonous erysipelas, from which she succumbed several months after the operation.

That idea of carrying the wire round the bone was suggested by that case, and I think the method may be of service when comminuted fractures are met with.

Dr. O. F. Wadsworth described a

PLASTIC OPERATION FOR THE LOWER EYELID

which he had first performed about thirteen years ago, and has had the opportunity of using on several occasions since. The operation originated with Wolfe of Glasgow, and consists in the grafting of a large piece of skin without a pedicle upon a surface denuded to receive it. The operation is particularly valuable in cases where all the tissues about the eye have cicatrized, and where there is no opportunity for a pedicle except one made up of cicatricial tissue.

Dr. A. T. Cabot referred to a case where he had used a pedicle and had taken the flap for the lower eyelid from the cheek. Before this he had always seen flaps taken from the side of the forehead and twisted downwards into place. The twist of the pedicle had to be removed later by a second operation. By the method he advocated, of taking the flap from the cheek, no twist in the pedicle could be detected after the wound had healed.

Dr. Wadsworth stated that the twist in the pedicle when the flap was taken from the forehead had, so far as his experience went, never given rise to subsequent deformity.

Dr. F. S. Watson explained a method for closing

PERINEAL URINARY FISTULÆ,

which he had found of service in his practice.

Dr. O. K. Newell then read a paper on the

DIAGNOSIS OF TUMORS OF THE BLADDER AND STONE, WITH THE CYSTOSCOPE.[5]

Dr. A. Post spoke briefly of a case of

AMPUTATION AT THE HIP-JOINT.

He said the leg was to have been amputated just below the knee-joint on account of malignant disease. The disease had extended and the amputation was made just above the knee-joint. The patient came back later with a return of the disease in the stump, and the only operation that seemed to offer a reasonable hope of success was amputation at the hip-joint. Since the operation everything had progressed favorably. The intellect was perfectly clear; the patient took nourishment and has a reasonable chance of recovery.

Dr. J. Homans showed two

FALLOPIAN TUBES AND OVARIES

removed from a married lady, thirty-one years of age. He said that the catamenia had been regular. The patient had been married thirteen years and had had no children. Examination showed an enlargement in Douglas' fossa the size of a plum. The mass was not tender on pressure. Pressure on the os uteri caused some pain. Later the patient had a worse attack than ever. She was etherized and the case was found to be one of pyosalpinx. There were many little cysts of the broad ligament about the size of small cherries. The second tube burst in its removal. There were more cysts with it but it was not quite so large as the first.

Dr. Marcy exhibited an interesting specimen of a

VILLOUS TUMOR,

size of a small egg, which he had recently removed from the base of the bladder by supra-pubic cystotomy.

Patient a male, æt. sixty-four. Sedentary habits. Well until about four months ago, when, without pain, first noticed blood in urine. When seen by Dr. M. about six weeks before operation, was decidedly anæmic, blood coffee colored, with a sedimentary clot. Had been treated by the usual remedies without avail. Tried faithfully, by use of the double rubber catheter, the hot water douche continued even to three hours, but with no, even temporary, benefit. Although no tumor could be felt by the most careful examination, as life was greatly endangered, it was determined to open the bladder and make the attempt to find the bleeding point.

Was assisted by Drs. A. F. Holt and S. N. Nelson.

After exposing the distended bladder it was held in place by stay ligatures before opening. After division, with two fingers of an assistant in the rectum, the base of the bladder was brought into view, and the pedunculated tumor ligated at its base and removed. There was very little hæmorrhage, but as a prevention, the bladder was filled with sponges held by stout ligatures, which were removed the second day. The patient has made a slow, but uninterrupted recovery, until now, about six weeks after the operation, he has in part resumed his literary labors, and his urine has been free from blood from the first. A fistulous track marks the site of the wound, but nearly all the urine escapes under the control of the will, by the urethra.

BULLET REMOVED FROM EAR.

Dr. E. H. Bradford showed a bullet removed from the external auditory meatus of a would-be suicide.

Recent Literature.

A Practical Treatise on Nervous Exhaustion (Neurasthenia) its Symptoms, Nature, Sequences, Treatment. By George M. Beard, A.M., M.D. Edited with notes and additions, by A. D. Rockwell. A.M., M.D. 8vo. pp. 254. E. B. Treat, New York. 1889.

The original edition of this work has been out of print for some time, we believe. Since it first appeared, of course, great advances have been made in our knowledge of the various neurasthenic states; nevertheless, although Dr. Beard's treatise never presented the subject in a truly scientific fashion, it contained many valuable facts in regard to the symptomatology and treatment of these conditions, and we are glad that it is once more accessible. Dr. Rockwell has added a few foot-notes, and several paragraphs embodying Dr. Webber's researches on vascular tension in neurasthenia, and various points in the electrical treatment. We regret to say that this new edition is poorly printed, with cheap paper and binding.

Rectal and Anal Surgery, with a description of the secret methods of itinerants. By Edmund Andrews, M.D., LL.D., Professor of Clinical Surgery in the Chicago Medical College, etc., and E. Wyllys Andrews, A.M., M.D., Adjunct Professor of Clinical Surgery in the Chicago Medical College, etc. 111 pages. 37 Illustrations. Chicago: W. T. Keener. 1888.

The above work is intended to describe the best method of the diagnosis and treatment of rectal diseases. Also to expose the secret methods of the so-called "pile doctors" or "itinerant rectal specialists." The diseases described are hemorrhoids, anal abscess, fistula in ano, fissure, ulcer, prolapse, polypi, benign and malignant tumors, mechanical rectal obstruction, malformations, and mechanical injuries of the rectum. This part of the work is a concise résumé of the subject. The chief attraction to the reader is the description of the "itinerant method" which is appended to each chapter. This is well and interestingly written, and is a valuable contribution, not only to surgical, but also to general literature. Certain pages, indeed, could be read with profit by even non-medical persons in many instances.

— Dr. James O'Reilly, who was expelled from the Medical Society of the County of New York for improper advertising, recently applied for a writ of mandamus to compel his reinstatement. On April 8th judgment was entered on a final order of Judge Ingraham in favor of the society, dismissing Dr. O'Reilly's proceedings, with costs to the amount of $102.09.

See page 381 of this Journal.

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PHYSICIANS AT THE MERCY OF SHARPERS.

It is notorious not only to those who are within the medical profession but to the public generally, that no other profession is so constantly the victim of sharpers and dead-beats as that of medicine. In fact, the very universality of the knowledge of that abuse adds to its perpetuation. The public knows perfectly well that it can cheat a doctor, and to a certain portion of mankind the opportunity for fraud is all that is necessary to insure its perpetration.

The younger medical men in any community are often taken up by those who have exhausted their credit with older practitioners, and those to whom patients are *raræ aves* are apt not to scrutinize too closely the pecuniary responsibility of their patrons. Other dead-beats, having exhausted the endurance of their neighboring practitioners, select a medical man from a distance and work him at even greater sacrifice of his time and strength, till he finds to his sorrow that he has been casting his pearls before swine, — in fact he may be fortunate even if the swine do not complete the parable by turning again and rending him for his pains.

We have noticed of late that in a number of localities both North and South, associations of physicians have been formed with the aim of preventing such imposition upon the medical profession. These associations maintain "black-lists" for the inspection of their members, upon which are entered the names of all persons in the community who, being able to pay their doctor's bills, have neglected or refused to do so. The members of the association are supposed to refuse attendance (except on a strictly cash basis) to all such persons, though nothing in the agreement is to interfere with the right and obligation of physicians to attend gratuitously the sick poor. A collection agency is also maintained in connection with some of these organizations, for the prosecution of delinquents.

Such associations appeal strongly at first thought to all doctors who have suffered from the ingratitude and dishonesty of their clients, and when it is considered that almost all other professions have a security for the payment of their just dues which medical men lack, there seems some justification for the adoption of methods which it must be confessed savor a little of trade.

Architects and engineers have a lien upon any structures which they erect, and are therefore protected in the rare event of owners refusing their just compensation. Lawyers have a very present help against recalcitrant clients. Artists of various kinds, while none too well paid, are rarely deliberately defrauded. Literary men are doubtless occasionally victimized by conscienceless publishers, but the great grievance for which alone they have thought it worth while to combine, the lack of international copyright, is one which is felt only by the highest members of that profession, and an association of such persons possesses advantages in its *personnel* over any organization for the maintenance of pecuniary rights possible to any other body of professional men.

We confess to viewing with some regret the general formation of such protective associations among physicians. If our profession almost alone is at the mercy of dishonest men is not that a tribute to its exalted humanitarian aims? What should we say of clergymen who should bind themselves together to withhold the ministrations of the church from the delinquent pew-holders?

Again, such an association is unfortunate in the fact that in order to accomplish its aim with certainty it must include in its membership all persons who make any pretence whatever to the treatment of disease. The self-respecting physician is therefore liable to find himself in very mixed company. Persons with whom he would not care to co-operate in the management of a case of illness, he actively co-operates with in the attempt to secure compensation therefor.

In dealing with those who evade their dues physicians may certainly use proper business methods, and it is doubtless an act of friendliness to warn a professional brother of a dishonest client by whom one has himself suffered, but after all means are taken which one can use with self-respect, we fear that a certain amount of imposition is likely to fall to the lot of every doctor.

REPORT OF THE TEWKSBURY STATE ALMS HOUSE AND HOSPITAL.

The thirty-fifth annual report of the Tewksbury State Alms House for the year ending September 30, 1888, has been published.

This Massachusetts Alms House, of former political notoriety, is an institution the most of whose inmates are mentally or physically afflicted in various ways to a greater or less degree. It is in reality a large hospital divided into several departments, viz., three separate hospitals for male and female patients, two separate insane hospitals for male and female patients, and a pauper department occupying several wards in different parts of the institution.

It has been recommended that, as the character of the institution has so materially changed since its establishment thirty-five years ago, the name of the institution should also be changed, so as to more properly conform to what it really is — a State hospital, — the whole number admitted during the past year being 2,006, of which number 1,815 were hospital patients. The new hospital building for female patients, containing nineteen wards, has been completed, and was ready for occupancy the 1st of January, 1888. Thus far it has been proved to be admirably adapted to the purposes for which it was erected. Its system of lighting, heating, and ventilation is excellent.

The trustees renew their recommendation for the erection of a similar hospital building on the easterly side of the premises for the use of male patients.

There have been 184 deaths the past year, 111 males and 73 females. Of this whole number, 29 were among the insane.

In the maternity there have been 111 accouchements, 88 of which were illegitimate. There were remaining in all the hospitals at the end of the year, 189 patients.

The trustees believe that they have the most economical and efficient ventilating system of any hospital of its size in the United States.

In the insane hospital there have been admitted 90 patients, 12 males and 78 females. Of these, 59 were transfers from the State hospitals, and 31 were from the almshouse department. The number remaining at the end of the year was 352; 51 males, and 301 females. These patients, directed by the attendants, not only make all their own clothing and household articles, such as bedding, towels, etc., but they also make all the trousers, overalls, jumpers, and underclothing used in the male department of the whole institution.

The medical staff has consisted of the superintendent and first assistant physician with four subordinate physicians; there have been some thirty-five nurses and assistant nurses. The office of pharmacist is filled by an able and experienced person who is also a graduate in medicine.

The record of diseases and deaths shows that a great variety of diseases have prevailed among the inmates: there have been of alcoholism, 72 cases; of syphilis, 151 cases; of gonorrhœa, 22 cases; of phthisis, 139 cases; of bronchitis in its various forms, 93 cases; of diphtheria, 11 cases; of fever and ague, 37 cases; of heart disease, 45 cases; of rheumatism (acute, chronic and gonorrhœal) 110 cases; of chronic ulcers, 46 cases; of pneumonia, 10 cases. Only five cases are tabulated as "cirrhosis of the liver," which, considering the great number of foreigners sent to Tewksbury for diseases connected with alcoholism, is somewhat surprising. The same remark is applicable to gastritis, of which there were four cases. Nor is the proportion of cases recorded as "chronic Bright's disease" as large as would have been expected out of a total of nearly two thousand cases; the number given is twelve. Only five cases of cancer are recorded. Of the so-called nervous diseases, there were 18 cases of neuralgia and 2 of neurasthenia, 3 of paralysis agitans, 11 of general paralysis, 1 of infantile, and 2 of "motor" paralysis.

In going over this institution, one is struck by the great number of syphilitic patients at present in the hospital department, and the great demand made on the pharmacist for iodides; by the miserable, dilapidated condition of very many of the inmates, who represent the very dregs of society; we may add, finally, by the overworked condition of the medical staff, who are laboring heroically, but amid discouragement and much despair, to benefit physically, mentally, and socially the many wretched specimens of humanity around them.

ANNUAL REPORT OF THE MASSACHUSETTS GENERAL HOSPITAL AND McLEAN ASYLUM FOR 1888.

The seventy-fifth annual report of the trustees of the Massachusetts General Hospital and the McLean Asylum is a document of more than usual interest. It opens with illustrations and a description of the Bradlee Ward and Operating Theatre, which is a new building especially adapted, in the words of the report, "for the treatment of a class of cases in surgery which especially demands every possible antiseptic precaution," but which is already known as the "abdominal ward." The funds for the erection were given by Miss Helen J. Bradlee as a memorial of her brother, the late J. Putnam Bradlee. The building contains fifteen rooms for patients, having one bed each, beside a nurses' sitting-room and the rooms and closets for medical supplies. The "sanitary" department, with the scullery and the opening to the basement for soiled clothes, is in an annexed building separated from the ward by large side openings with open blinds. No other part of the ward has any connection with the sewer. A circular amphitheatre is attached to the ward, with walls of pressed brick and floor of asphalt. Great pains have evidently been taken to erect a building which shall meet the most modern ideas of surgical cleanliness. The ward and theatre are lighted by electricity, and the same munificent gift of Miss Bradlee also sufficed for the introduction of an electric light plant for the whole of the hospital.

In addition to this gift the hospital has received over $27,000 during the past year.

The needs of the Hospital for the Insane, at Somerville, evidently weigh upon the minds of the trustees. The unsuitableness of the buildings, and the unfortunate surroundings, make a removal more and more imperative. The immediate construction of all the necessary buildings upon the new site at Belmont is beyond the means at present in the control of the trustees. They hope, however, to begin work upon one, perhaps two, buildings for asylum convalescents this spring.

A new officer has been appointed at the asylum as pathologist and assistant physician, with the object of beginning upon the practical study of experimental psychology in connection with the clinical work in the wards.

Dr. Cowles, the superintendent, has something to say about the therapeutic uses of physical training in the asylum, and much to say about the training school in which he is so deeply interested.

ON THE PREPARATION OF SUBCUTANEOUS INJECTIONS OF QUININE.

Beuermann has been recently experimenting to obtain the formula of a solution of quinine which, when injected hypodermically, shall not cause pain and shall provoke no local reaction.

He obtains a neutral salt by dissolving twenty parts of muriate of quinine in one part of pure hydrochloric acid and fifteen parts of water. The solution is filtered, and each syringeful contains fifty-five cgs. (nine grains) of quinine chloride. Beuermann has made upwards of one hundred hypodermic injections with this solution without producing pain, or any local irritation whatever. He has seen the temperature of typhoid patients fall, and the pain of neuralgia and rheumatism abate under these injections, which, he says, are not followed by the unpleasant symptoms often attending the administration of quinine by the mouth.

MEDICAL NOTES.

— The legislature of Wisconsin has by a close vote killed the medical bill which was before it.

— The second report of the Du Bois fund for sending trained nurses to the sick poor shows that during the past year one hundred and seventy-one patients have been cared for in their own homes by the nurses, at an expense of $1,351.

— Dr. D. Hayes Agnew has formally closed his active labors at the University of Pennsylvania, though he retains an emeritus professorship. The Philadelphia daily papers take occasion to speak in the highest terms of eulogy of his personal and professional character.

— The report of the Massachusetts General Hospital just issued says that a fund of $10,000 has been received from Dr. Arthur T. Cabot and his brothers, to be called the Samuel Cabot Fund for Pathological Investigations, the income from which is to pay for the services of a pathologist at the hospital, and Dr. Wm. F. Whitney has been appointed to the position.

— It is stated now that investigations by the inspectors of the board of health go to show that the defective sanitary arrangements which probably led to the fatal illness of Miss Gibbs, whose death was alleged to be due to the bad sanitary condition of the school-house in which she taught, existed in the dwelling where she boarded, rather than in the school-house.

— Names of no little celebrity are to be found in the lists of the medical officers of the army and navy, past and present, says the *New York Times*, but it can hardly be said that there is an uncontrollable rush for commissions in the medical corps. There are now about twenty medical vacancies in the two services, about two-thirds of them in the navy. The army usually finds a good supply of candidates, but in the navy the lowest grade seems to offer so few inducements in the way of pay, privileges, and promotion that there have long been complaints that enough candidates competent under the exacting standard found necessary or desirable cannot be had. In Brooklyn and in the Mare Island Navy Yard, boards have lately been in session for the examination of applicants for the medical corps of the navy. The head of that corps, in a recent annual report, set forth the reasons why the service is not more attractive, and the subject is well worthy of the consideration and action of Congress.

— The newly appointed dean of the Medical Faculty of McGill University is Dr. Craik. He was born in Montreal in 1829. His parents were Scotch, and in 1818 they left Edinburgh and settled in Canada. In 1854 he graduated from McGill, and was appointed house surgeon of the Montreal General Hospital. At this period cholera was epidemic, and the hospital was overcrowded with patients. In 1856 he was appointed demonstrator of anatomy. He held this position for five years. In 1861 he became professor of clinical surgery. He succeeded in 1862 the late Dr. Sutherland as professor of chemistry, and continued in this capacity till 1879, when he resigned the active duties of the chair. Dr. Craik acted as registrar of the Faculty for about ten years. In 1875 he was elected treasurer, which position he still holds. The position of dean is the highest honor in the gift of the Faculty, and it is one to which Dr. Craik, by long and honorable service in connection with McGill, is eminently entitled.

BOSTON.

— The annual corporation meeting of the Massachusetts Infant Asylum at Boylston Station, Jamaica Plain, was held April 9th. Mr. Alexander S. Porter presided. Three legacies were left the asylum during the past year, $10,000 the gift of Mrs. J. J. Dixwell, $20,000 from George E. Downes, and $1,000 from an unknown friend. Notwithstanding these munificent donations, the directors are desirous of increasing the subscription list as far as possible, in order that the institution may have all necessary facilities at its disposal. The report of the acting secretary and treasurer, Mr. Cabot, shows total receipts amounting to $46,100.09, total current expenses and investments $45,035.32, leaving a cash balance of $1,064.77.

— At a recent hearing before the street railway committee, Dr. Samuel Eliot and Thornton K. Lothrop, Esq., as trustees of the Massachusetts General Hospital, appeared to protest against the erection of an elevated railway in the vicinity of that institution, on account of the serious effect which it would have upon the patients. It was the general, if not the unanimous, opinion of the medical staff that it would be a great danger, if not fatal to the interests of the institution.

NEW YORK.

— Governor Hill has nominated Dr. Allan McLane Hamilton for the position of health officer of the Port of New York; but it is understood that this nomination, like the others that the governor has from time to time made for the office, will not, owing to political influences, be confirmed by the State Senate; so that the present incumbent, Dr. Smith, will still retain his position.

— Dr. William M. Polk, of the Centennial Celebration Committee, has suggested that relief stations for medical and surgical aid be established under the control of the Police Department at different points along the line of the parades; a sufficient force to handle five or six stretchers being placed at each point in charge of a surgeon supplied with such appliances as may be required for use in emergencies. It is also suggested that the hospitals be requested to place the entire ambulance service of the city at the disposal of the relief corps, all to be under the control of the police surgeons, and to be summoned, as they now are, through the police telegraph call system.

— At the same meeting a fine portrait of Dr. A. Jacobi, ex-president of the academy, painted by Daniel Huntington, president of the National Academy of Design, was presented to the Academy by Dr. A. Caille, who represented a number of gentlemen who had subscribed towards its payment.

— At a meeting of the academy held April 4th, Dr. T. Gaillard Thomas read a paper on "Acute Mania and Melancholia as Sequelæ of Gynæcological Operations," in which he reported six cases of this kind. Four of them proved fatal, one terminated in recovery, and the sixth patient became permanently insane.

— A board of medical officers, to consist of Lieut.-Col. C. H. Allen, surgeon, Major Henry McElderry, surgeon, Capt. Washington Matthews, Assistant Surgeon, and Capt. J. C. Merrill, Assistant Surgeon, has been ordered to meet in New York on the 1st of May for the examination of assistant surgeons for promotion, and of candidates for admission into the Medical Corps of the Army.

PHILADELPHIA.

— The sixty-fourth annual commencement of the Jefferson Medical College took place on the 4th inst., when the medical degree was conferred upon two hundred and twelve graduates. Prof. Wm. S. Forbes delivered the valedictory address.

— Prof. S. W. Gross, of the Jefferson Medical College, who was out of health a year or more ago, and had lately been seriously ill with pneumonia, died April 16th in this city at the age of fifty-two years.

— The eighth annual commencement of the Medico-Chirurgical College was celebrated on the 5th inst., when thirty men were graduated. The valedictory was delivered by Prof. Jas. E. Garrettson.

Miscellany.

THE NEW TITLE.

THE WHY.

Germs in the air,
Germs in the sea,
Germs wherever one may be,
Germs and to spare
Growing in me,
German germs from Germany.

Whate'er we say
Or write or think,
Germs will wriggle in the ink.
On tongues they'll play,
And "culture" drink
From each minute cerèbral chink.

THE WHEREFORE.

A man of modern science wooed
A maiden of accepting mood,
Who, dreading lest contagion might
Do mischief to her chosen wight,
With sol. bichloride washed her hair
And sponged her limbs and body fair.

She rinsed her mouth with "Listerine,"
And held, her snow-white teeth between,
A pad of antiseptic gauze, —
Covering her nose, as well as jaws, —
Which formed a sort of respirator
Between them and her "osculator."

But this reminds, — I should have told
That these were things he'd taught of old,
With others which I may not tell, in
Regard to spots that germs might dwell in.
She was a wise professor's daughter
And practised all which had been taught her.

So this good medicine man, with pride
Clasping his antiseptic bride, —
In disinfected murmur low
Asked "why she loved her doctor so?"
And, softly nestling down, she sighed,
"You're such a dear *old germicide.*"

C. V. G.

PARASITES IN ANNATTO PASTE.

In a recent number of the "Pharmaceutische Zeitung" (Jan. 26, 1889), J. Schirmer gives some further facts in regard to the trichina-like parasitic worms discovered by him in annatto paste. He says: "I have been induced to give this subject further consideration since I have been able to prove the existence of these parasites in greater or smaller numbers in every sample of annatto which I have examined. The worm is colorless, without prominent annular markings, with blunt head and long needle-pointed tail. It is of various sizes and keeps up a lively movement under the microscope. If immersed in glycerine it is at once killed, or at least it becomes motionless.

"This worm belongs to the order of so-called round or thread-like worms (Nematodes). To the same group belong also Vinegar eels (Anguellula aceti), Ascarides (human intestinal worms), and Trichina spiralis. Most of these species live in moist soil and putrefying substances. They undergo in these their full development. The first stage is the embryonic, then, after encysting, the larval, and finally the sexually perfect creature. Almost always these latter begin to migrate after a few days during which they produce eggs, or living young, which follow their parents, and in turn undergo the same cycle of changes."

Now, since, as is well known, annatto is often moistened with urine in order to prevent drying, and since, further, the pulp of which the annatto is made is prone to ferment, the occurrence of these worms should not astonish us. It would, however, be interesting to determine whether they get into the annatto in the tropics or only after it reaches Europe.

The above observations are of interest in connection with the fact that annatto paste has been in use for the manufacture of "Milkman's Benefit," an article which has had extensive use in the milk trade to impart to skimmed and watered milk the appearance of rich whole milk.

SULFONAL AS AN HYPNOTIC IN INSANITY.

In an article on Sulfonal as an hypnotic in insanity, Dr. Samuel Garnier, in the *Annales Medico-Psychologiques* for January and March, 1889, reports at length upon its action in seventeen cases, and concludes that: —

I. Sulfonal is an hypnotic of most remarkable intrinsic value in cases of insanity. In nearly every case of insomnia sleep was produced by doses varying from two to five grammes.

II. It proved efficacious in cases in which paraldehyde, urethane, chloral, and hypnone had invariably failed to act.

III. The advantages of sulfonal in the insomnia of the insane are: the nature and amount of sleep procured by the doses mentioned; the facility in administering the drug by reason of its freedom from taste and odor, and also the fact that it has no appreciable effect upon the respiration, circulation, or digestion.

IV. It should be stated in regard to its action upon digestion that as in 5.5 per cent. of the cases it excited vomiting and in 17.7 per cent. slight diarrhœa, its use is contraindicated when these phenomena appear.

V. The use of sulfonal is sometimes attended with vertigo and difficulty in keeping the equilibrium, the patient appearing in this respect as if intoxicated. It may possibly be contraindicated in the congestive forms of insanity.

VI. The fact that it had a diuretic effect in 17.7 per cent. of the cases should be borne in mind when administering it.

VII. Its calmative action by day is wanting even after a large dose, and if produced it is usually only a somnolence induced the day following the administration of the drug, a condition it is well to avoid by reducing the dose.

VIII. After divided doses, in the single instance in which it was so administered, no sedative effect resulted by day and scarcely any at night.

IX. About one-half of the cases to which sulfonal was administered only on alternate days were comparatively restful during the intervening nights.

X. In sane subjects, sulfonal appears unquestionably to provoke and prolong sleep as well as to render it more profound. The phenomena attending its use are few and of little consequence. It is indicated in all cases of nervous insomnia.

OBITUARY.

MICHEL EUGÈNE CHEVREUL, AGED 103.

M. Michel Eugène Chevreul, the distinguished French chemist, died at Paris last week. His son, who was seventy years old, died recently, and the shock is supposed to have hastened the father's end. Chevreul was born at Angers, August 31, 1786; went to Paris at the age of nineteen years, and became a pupil of Vauquelin, the management of whose chemical laboratory was soon intrusted to his care. In 1810 he was preparator of the chemical course in the Museum of Natural History, and in 1813 was appointed professor in the Lycée Charlemagne and officer of the university. In 1824 he was appointed director of the dyeries, and professor of special chemistry in the carpet factory of the Gobelins. In 1830 he succeeded Vauquelin, in the chair of chemistry in the Museum of Natural History, and in 1864 he was made director, a post which he held for ten years. He was elected, at different times, a member of a number of learned societies in France, England, and other foreign countries. His vitality was great, and his mind and memory retained much of their brightness, notwithstanding advancing years. His daily life was extremely simple and regular. Of late years he was only out of bed a few hours daily. It is said that he never drank wine, never smoked, and never ate fish, or drank milk, except when mixed with other food. His regular diet was of strong soups, beefsteak, or cutlets, and coffee. His father and mother both lived to be more than ninety years of age.

CHARLES J. B. WILLIAMS, M.D., F.R.S., F.R.C.P.

This venerable physician died in his eighty-fifth year, on March 24, at Cannes, whither he had retired fourteen years ago, after an exceptionally long and successful career as a London consultant. Dr. Williams was entered at the University of Edinburgh in 1821, when Hope was lecturing on chemistry, and the third Monro on anatomy. He formed one of a class of three who in 1823 attended the first course of lectures on medical jurisprudence, delivered by the newly appointed professor, Dr. Robert Christison. His bent was towards chemical physiology, and his first scientific contribution was a paper read before the Royal Medical Society on the "Blood and its Changes by Respiration and Secretion." Having taken his M.D. degree in 1824, he proceeded to Paris, where he spent a year in fruitful study, which had a bearing upon all his subsequent work. He was at the time of his death almost the last survivor of the band of students who attended to the cliniques of Laennec, and who learnt the art of physical diagnosis from the great master and creator of mediate auscultation.

Fresh from the inspiring influence of the new teaching Dr. Williams in 1828 produced his first book, a "Rational Exposition of Physical Signs in Diseases of the Chest," which earned the encomium of Sir John Forbes, the editor and translator of Laennec's work. In 1830 he married and settled in Half-Moon street. He contributed several articles to the "Cyclopædia of Practical Medicine," and found time to pursue some investigations in pure science at the Royal Institution under the direction of Professor Faraday.

He delivered the Gulstonian Lectures in 1841, and the Lumleian Lectures (on Success and Failure in Medicine) in 1862. In 1841, in conjunction with Mr. (afterwards Sir) Philip Rose, he took an active part in founding the Consumption Hospital at Brompton, of which he was appointed consulting physician, and over the fortunes of which he never ceased to watch with interest. He also took a leading part in the foundation of the Pathological Society of London in 1846, and was elected its first president. In 1858 he was invited by Mr. Jonathan Hutchinson to aid in founding the New Sydenham Society, and of this also he was the first to act as president. Later still, in 1867, he joined in the movement initiated by Dr. Headlam Greenhow to found the Clinical Society, which has done and is doing such good work in scientific and practical medicine. His last office in connection with scientific societies was as president of the Royal Medical and Chirurgical Society in 1873–4, shortly before his retirement from practice. At this time, too, he received the appointment of physician extraordinary to her Majesty.

Correspondence.

A PREGNANT CAUSE OF FAILURE IN VACCINATION.

Mr. Editor, — Some time ago, I cannot now fix its date, and its author's name I have forgotten, an article appeared in a medical journal, severely deprecating the ordinary method of performing the slight operation of vaccination as unscientific and dangerous in the extreme, because offering a free and hearty welcome to the hordes of ravening germs that are everywhere constantly on the watch for a chance of ingress to the human body. It then proceeded to lay down certain sapient rules to be followed, that all such dangers might surely be avoided and the operation taken from the realms of malpraxis and placed upon a scientific basis. One was directed to most thoroughly wash the arm of the vaccinee, the instrument to be used, and his own hands with a solution of carbolic acid. This article was quite freely copied in the medical press of the country, and similar counsel has likewise appeared from time to time, merely substituting for the carbolic acid, corrosive sublimate, that being the latest favorite among germicides. When such advice is thus freely published and, what is worse, followed, it is high time that a decided protest be entered. For advice that makes pretence of being ultra-scientific, none could well be more grossly unscientific and absurd. Do those who give it or follow it reflect for a moment on what they are trying to accomplish by vaccination — that the introduction of pathogenic germs into the system is precisely the end aimed at by that procedure? Let them do so, and then calmly consider the propriety of saturating the soil in which these germs are to be sown, and everything coming in contact with them, with the most powerful and perfect fluid germicide science has produced. The satisfaction of having performed a thoroughly antiseptic operation may thus be attained, and the wound may heal admirably, but there will be no *vaccination.*

Far be it from me to say one word detracting from the most thorough *asepsis* in connection with vaccination. Thorough cleanliness should be observed and a foul lancet most carefully guarded against.

All this can be perfectly accomplished by observing the following simple directions: Wash the arm thoroughly with plain soap and water, hold your lancet, if you use one, for a moment in a flame, which will as thoroughly sterilize it as an ocean of corrosive sublimate or carbolic acid solution could, and when the lancet has become cool, simply vaccinate your subject; but in the name of all that is rational, do not use a drop of any fluid germicide as an adjunct. Then, if you have not chosen a hot-bed of infectious diseases for the scene of the vaccination and have used proper virus upon a decently healthy subject, you will have the consciousness of having taken every essential precaution, and, what is perhaps of *some* importance, infected your patient with the cow-pox, your sole motive for having to do with him at all.

Very respectfully,
Stephen C. Martin, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING APRIL 6, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diph. and Croup.	Scarlet Fever.	Measles
New York	1,571,558	862	375	23.52	20.40	7.56	8.52	1.56
Philadelphia	1,040,245	372	154	11.34	—	6.48	1.35	.27
Chicago	830,000	291	133	20.40	22.44	9.86	2.04	5.10
Brooklyn	814,505	347	163	17.40	17.88	7.25	4.38	2.04
Baltimore	500,343	162	52	5.20	—	3.25	—	2.32
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	199	72	17.20	19.50	10.50	.50	—
New Orleans	250,000	96	15	8.32	14.56	1.04	1.04	2.00
Cincinnati	225,000	112	—	15.24	7.12	7.12	—	1.04
Washington	225,000	123	40	16.80	15.20	5.60	—	.89
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	14	2	—	21.42	—	—	—
Charleston	60,145	49	11	10.20	10.20	—	—	—
Portland	40,000	9	3	—	—	—	—	—
Worcester	78,292	—	—	—	—	—	—	—
Lowell	71,518	33	14	18.18	27.27	3.03	—	—
Cambridge	65,552	23	7	8.70	17.40	8.70	—	—
Fall River	62,647	19	7	10.52	36.82	5.26	5.26	—
Lynn	53,334	17	7	5.88	11.76	—	—	—
Springfield	40,731	25	4	16.00	20.00	8.00	—	—
Lawrence	40,619	—	—	—	—	—	—	—
New Bedford	37,253	13	2	—	7.69	—	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	—	—	—	—	—	—	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	—	—	—	—	—	—	—
Haverhill	26,058	4	1	—	25.00	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	2	—	—	—	—	—	—
Newton	21,553	4	1	—	—	—	—	—
Malden	19,774	1	—	—	—	—	—	—
Fitchburg	17,534	—	—	—	—	—	—	—
Waltham	17,332	7	—	—	14.28	—	—	—
Newburyport	13,875	—	—	—	—	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	6	1	50.00	16.66	16.66	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2790; under five years of age 1065; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 471, consumption 288, acute lung diseases 414, diphtheria and croup 190, scarlet fever 97, measles 44, whooping-cough 33, diarrhœal diseases 28, typhoid fever 26, cerebro-spinal meningitis 20, erysipelas 13, malarial fever 11, puerperal fever 9. From whooping-cough, New York 19, Brooklyn 5, Washington 3, Boston 2, Philadelphia, Chicago, Baltimore, and Lynn one each. From diarrhœal diseases, New York 8, Brooklyn 5, Lowell 3, Philadelphia, Cincinnati, Washington, and Charleston two each, Chicago, Boston, and New Orleans, one each. From typhoid fever, Philadelphia 7, New York 6, Washington 4, Cincinnati 3, Chicago, Boston, New Orleans, Nashville, Lowell, and Springfield one each. From cerebro-spinal meningitis, New York 7, Washington 4, Chicago 3, Nashville 2, Boston, Cincinnati, Lowell, and Quincy one each. From erysipelas, New York 5, Brooklyn 3, Boston 2, Chicago, Cincinnati, and Charleston one each. From malarial fevers, New York 4, Brooklyn and New Orleans two each, Philadelphia, Baltimore, and Charleston one each. From puerperal fever, Chicago 3, Philadelphia, Baltimore, Boston, New Orleans, Washington, and Springfield one each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM APRIL 6, 1889, TO APRIL 12, 1889.

Byrne, Charles C., Surgeon U. S. Army, promoted surgeon, with the rank of Lieutenant-Colonel, to rank from March 29, 1889.

Munn, Curtis E., promoted from Assistant Surgeon to Surgeon, with the rank of Major, to rank from March 29, 1889.

By direction of the President, Captain Paul R. Brown, Assistant Surgeon, will report in person to Brigadier-General John R. Brooke, President of the Army Retiring Board at Omaha, Neb., for examination by the board. Par. 9, S. O. 80, A. G. O., Washington, April 6, 1889.

By direction of the Secretary of War leave of absence for six months is granted Captain Charles S. Black, Assistant Surgeon, to take effect after the arrival at Fort Sidney, Neb., of Acting Assistant Surgeon Robert P. Finley. Par. 14, S. O. 78, A. G. O., Washington, April 4, 1889.

By direction of the President the State of Wisconsin is transferred from the Department of the East to the Department of Dakota. G. O. 36, A. G. O., Washington, April 6, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 13, 1889.

Heffenger, A. C., Passed Assistant Surgeon, found unfit for duty at present, by Retiring Board, but not permanently incapacitated for active service, and granted one year's leave of absence for medical treatment.

DuBose, W. R., Passed Assistant Surgeon, detached from the U. S. S. "Constellation," and ordered to the Practice ship "Jamestown."

Lowndes, C. H. T., commissioned an Assistant Surgeon in the U. S. N., March 13, 1889.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED APRIL 13, 1889.

Godfrey, John, Surgeon, to proceed to Poughkeepsie, N. Y., on special duty, April 10, 1889.

Mead, F. W., Passed Assistant Surgeon, to report in person to the Supervising Surgeon-General, April 3, 1889. Detailed as Acting Chief Clerk, Marine Hospital Bureau, and Attending Surgeon, Port of Georgetown, D. C., April 10, 1889.

Wheeler, W. A., Passed Assistant Surgeon, relieved from duty at Buffalo, N. Y., to assume charge of the service at Norfolk, Va., April 3, 1889.

Devan, S. C., Passed Assistant Surgeon, relieved from duty as Acting Chief Clerk, Marine Hospital Bureau, and Attending Surgeon, to assume charge of the Service at Buffalo, N.Y., April 3 and 12, 1889.

Pettus, W. J., Assistant Surgeon, granted leave of absence for four days, April 6, 1889.

Stoner, J. B., Assistant Surgeon, to rejoin station (New York) as soon as practicable, April 11, 1889.

APPOINTMENTS — BOSTON DISPENSARY.

At the quarterly meeting of the Board of Managers of the Boston Dispensary the following appointments were made: — Dr. William S. Boardman, District Physician; Dr. J. Payson Clark, to the Department for Diseases of the Throat and Nose; Dr. Edwin E. Jack, to the Department for Diseases of the Eye; and Dr. Edward M. Greene, Pathologist.

David Webster, M.D., of New York City, has been appointed to the chair of Ophthalmology in Dartmouth Medical College, in the place of W. W. Seeley, M.D., resigned.

SOCIETY NOTICES.

The Fortieth Annual Session of the American Medical Association will be held in Newport, R. I., on Tuesday, Wednesday, Thursday and Friday, June 25, 26, 27, and 28, commencing on Tuesday, at 11 A.M.

The following are the names of the officers of Sections: — Practice of Medicine, Materia Medica, and Physiology: Dr. F. C. Shattuck, Chairman, Boston, Mass.; Dr. G. A. Fackler, Secretary, Cincinnati, Ohio. Obstetrics and Diseases of Women: Dr. W. H. Wathen, Chairman, Louisville, Ky.; Dr. A. B. Carpenter, Secretary, Cleveland, Ohio. Surgery and Anatomy: Dr. N. P. Dandridge, Chairman, Cincinnati, Ohio; Dr. W. O. Roberts, Secretary, Louisville, Ky. State Medicine: Dr. J. Berrien Lindsley, Chairman, Nashville, Tenn.; Dr. S. T. Armstrong, Secretary, U. S. M. Hospital Service. Ophthalmology: Dr. George E. Frothingham, Chairman, Ann Arbor, Mich.; Dr. G. C. Savage, Secretary, Nashville, Tenn. Laryngology and Otology: Dr. W. H. Daly, Chairman, Pittsburg, Pa.; Dr. E. Fletcher Ingalls, Secretary, Chicago, Ills. Diseases of Children: Dr. J. A. Larrabee, Chairman, Louisville, Ky.; Dr. C. J. Jennings, Secretary, Detroit, Mich. Oral and Dental Surgery: Dr. F. H. Rehwinkle, Chairman, Chillicothe, Ohio; Dr. E. S. Talbot, Secretary, Chicago, Ills. Medical Jurisprudence: Dr. James Y. Kiernan, Chairman, Dunning, Ills.; Dr. T. C. Evans, Secretary, Baltimore, Md. Dermatology and Syphilography: Dr. L. D. Bulkley, Chairman, New York; Dr. W. T. Corlett, Secretary, Cleveland, Ohio.

Boston Society for Medical Improvement. — A Regular Meeting of the Society will be held on Monday, April 22, 1889, at the Medical Library, 19 Boylston Place, at eight o'clock P.M. Dr. Henry J. Bigelow "will make a few remarks upon the portrait of a surgeon belonging to the society." Drs. J. Collins Warren and James J. Putnam will speak of "Recent Contributions to Cerebral Surgery," with stereopticon.

F. B. Harrington, M.D., *Secretary.*

Suffolk District Medical Society. — The annual meeting will be held at No. 19 Boylston Place, on Saturday, April 27, 1889, at 8 P.M. Papers: Dr. Henry Jackson, "The Use and Misuse of Disinfectants and Deodorizers in Medicine." Dr. Samuel J. Mixter, "Compound Fracture of the Skull, with extensive Laceration of the Brain. Recovery." Reports of the Nominating Committee, of the Treasurer and the Librarian, and of the Committee on Social Meetings. Election of Officers. Supper after the Meeting.

Herman F. Vickery, *Secretary.*

DEATH.

Died in Dorchester, Mass., April 12, 1889, Edwin Charles Bullard, M.D., M.M.S.S., aged forty-eight years.

OBITUARY.

JEROME H. KIDDER, M.D.

Dr. Jerome H. Kidder, formerly of the United States Navy and lately in charge of the Bureau of Exchange in the Smithsonian Institution, died suddenly of pneumonia in Washington, April 8. He was widely known in scientific circles, and was held in warm esteem. Dr. Kidder was a native of Maryland. In 1862 he was graduated at Harvard College, and the next year entered the Tenth Maryland Volunteers as private. In '64 he was mustered out, but in '66 returned to the United States service as Assistant Surgeon in the navy. In 1871 Dr. Kidder was made Passed Assistant Surgeon, and in 1876 Surgeon. His work brought him into prominence, as he was attached to the Naval Hospital and Laboratory at New York, to the Transit of Venus Expedition to Kerguelen Island as naturalist, and on special duty with the United States Fish Commission of 1875. After being appointed Surgeon he was stationed at the Smithsonian Institution to prepare reports upon the natural history of Kerguelen Island, and then was sent to the European station, placed on duty with the Fish Commission for another summer, and lastly made chemist and microscopist of the Naval Department at Washington. In 1884 he resigned from the navy, but his work at the Smithsonian had since continued.

HENRY A. BARRETT, M.D.

Dr. Henry A. Barrett, a prominent physician and surgeon of Middlesex county, died at his home in Concord, Mass., April 6th, at the age of seventy years ten months. Dr. Barrett had never fully recovered from a severe attack of pneumonia which he experienced some fifteen or twenty years ago, and one lung had been more or less affected ever since that time. Prudence and care, however, had enabled him to remain in the active practice of his profession up to within about three weeks of his disease. Dr. Barrett was born in Norfolk, Va. His father was a descendant of Col. Barrett of Concord, of Revolutionary fame, and his mother was a native Virginian. He received his early education in the Northampton schools and subsequently went through Amherst College. Returning to Concord, he taught the High School there for three years, and then entered the Harvard Medical School. After receiving his title degree of M.D. he settled in Concord, where he had been engaged in active practice for about forty-five years. He was appointed Medical Examiner for the Sixth Middlesex District, under the Acts of 1877, which position he held continuously down to the time of his death. He was also physician at the Massachusetts State Prison during a portion of the time that it was located at West Concord, holding that office during the years from 1880 to 1885 inclusive. In 1863 married Eliza Leighton of Concord, who survives him.

BOOKS AND PAMPHLETS RECEIVED.

Intubation in Chronic Stenosis of the Larynx, with a Report of Five Cases. By Joseph O'Dwyer, M.D. Reprint. 1888.

Intubation of the Larynx in Diphtheritic Croup. Analysis of Two Hundred Cases operated upon. By Dillon Brown, M.D. Reprint. 1889.

Therapeutische Notizen der Deutschen Medizinal-Zeitung. Herausgegeber Dr. Julius Grosser. 1880-1889. Heft 1. Bogen 1-5 (A - Gelenkentzündung). Berlin. 1889.

The Sanitary Inspector, a Monthly Journal Devoted to Personal and Public Hygiene. Published by the Maine State Board of Health. A. G. Young, M.D., Secretary of the Board, Editor. Augusta. Vol. 1, No. 9. 1889.

Preliminary Report to the Illinois State Board of Health. Water Supplies of Illinois and the Pollution of its Streams. By John H. Rauch, M.D., Secretary, with two appendices: I. — Chemical Investigations of the Water Supplies of Illinois. By Prof. J. H. Long. II. — The Illinois River Basin in Its Relations to Sanitary Engineering. By L. E. Cooley, C. E. Springfield, Ill. 1889.

American Resorts, with notes upon their Climate. By Bushrod W. James, A.M., M.D., member of the American Association for the Advancement of Science, The American Public Health Association; The Pennsylvania Historical Society; The Franklin Institute, and The Academy of Natural Sciences, Philadelphia. The Society of Alaskan Natural History and Ethnology, Sitka, Alaska; etc., etc. With a Translation from the German by Mr. S. Kauffmann of those Chapters of "Die Klimate der Erde," written by Dr. A. Woeikof, of St. Petersburg, Russia, that relate to North and South America, and the Islands and Ocean contiguous thereto. Intended for invalids and those who desire to preserve good health in a suitable climate. Copyrighted, Philadelphia and London: 1889. F. A. Davis. Octavo. 300 pages, cloth.

Original Articles.

A PECULIAR FORM OF ŒSOPHAGISMUS.[1]

BY HAMILTON OSGOOD, M.D.

The affection considered in this paper is called "peculiar" because in several respects it seems unlike other œsophageal disturbances which are described in the books and which are suggestive of the malady in question. It would be an easy matter to dismiss the subject with the off-hand diagnosis of globus hystericus or simple œsophagismus, that is, stricture of the œsophagus not dependent upon pathological growths in, or trauma of, this tube; but the many writers whom I have consulted, consider globus hystericus as pathognomonic of hysteria; and in ordinary œsophagismus, which is also pronounced an hysterical affection, there exists either a simple impossibility of deglutition, or a difficulty so marked as invariably to arrest a probang, or even fluids, at some point in the œsophagus, and there occurs regurgitation both of food and liquids. Whereas, in the cases which I am about to call in witness, there was no evidence of hysteria, and one-half my patients were males, while, with the exception of an abnormal condition of the mucous membrane, the females were otherwise in sound health. With reference to ordinary œsophagismus there was in my patients at no time an insuperable difficulty in swallowing either solids or liquids. Still, there was one symptom which is common to the three lesions, viz., a sense of oppression in the œsophagus. In globus this is compared to a ball rolling upward and downward in the gullet. In ordinary œsophagismus, accompanying the more or less stubborn dysphagia with regurgitation, there is a sudden, painful, and absolute closure of the œsophagus.

In my patients the symptoms were the same sudden, often intense, pain and sense of constriction in the epigastrium; radiation of the pain; slight regurgitation if the attack occurred at table, with an arrest of food at the cardiac orifice and perfect consciousness on the part of the patient of this arrest, the food, however, after an instant's delay, passing on into the stomach.

My notes contain details of six cases, which, in their symptoms, very closely resembled each other, their unlikeness being shown in a difference in the intensity, frequency, and duration of the attacks; some of them occurring often during a period of years and lasting but a few moments, others appearing less frequently but exhibiting a larger degree of obstinacy and severity.

In its character, the affection, as I have seen it, seems largely sympathetic and reflex, for invariably there has existed some chronic form of disturbance in the mucous membrane at some point more or less distantly removed from the locality to which the sensations of pain were chiefly referred. So far as I am aware the ailment does not affect children. The ages of my patients varied between twenty and fifty years.

The attacks in question, as to the time of day and other circumstances, occur in a perfectly irregular manner and the intervals between them are equally unmethodical. The degree of their intensity varies as widely as do their other peculiarities, being sometimes slight, sometimes excessive.

Although œsophagismus occurs in catarrhal conditions of the stomach I should not admit dyspeptic symptoms on the part of my patients, there being no indigestion, no pyrosis, in brief, no disturbance of that nature. In no case have I found this organ tender on pressure. The distress was always located beneath the xiphoid cartilage as high as its union with the gladiolus, and here tenderness on pressure is usual. From its point of origin the discomfort, which is very peculiar in character, may radiate up to the pharynx and from that locality pass into one or both of the ears. This aural pain is probably located in the mucous membrane of the Eustachian tubes, but is said to terminate in the tympanum in what is declared to be a sharp point. When the entire tract of the œsophagus is thus involved the distress is very annoying and is apt to alarm the patient. The salivary glands secrete abundantly, a symptom, so far as I have been able to discover, mentioned only by Luschka.[2] There is a sense of impending suffocation, in some cases of death, for a prolonged attack seems to carry the sensation by the route of the vagus nerve to the heart. Sometimes the distress appears at the right of the median line and gradually involves the right chest as far as the outer border of the mamma, being sharply felt in the nipple. In extreme cases pain is felt in the back, and, when leaning against a chair the patient experiences a soreness in the spinal column at a point opposite the original seat of pain. This may indicate that the intercostal nerves also become sensitive. In my patients at all times there existed a difficulty in swallowing beer, champagne, apollinaris water, and other gaseous drinks. So soon as the fluid reached the lower end of the œsophagus a spasmodic, but only momentary, constriction followed.

In describing this lesion it will perhaps suffice if, without giving details of individual cases, I borrow from each of them.

In none of my patients were the attacks confined to meal hours. The distress appeared in the most capricious manner at any waking hour of day or night and under all circumstances; as, for example, during a change from an upright to a stooping posture, as in lacing the boots; on turning in bed; on rising from a prone to a sitting position; during a rapid walk; after a hearty laugh, or sudden cough, or sneeze or hiccough; on inhaling a bit of food into the larynx; while sitting, lying, or standing in perfect quietude; on waking from a dreamless sleep without bodily movement. No patient has ever been able to give me a reason for the onset, which is electric in its suddenness, coming like a grip upon the lower end of the œsophagus and at once causing radiation of pain.

It is during the existence of an obstinate attack that the sufferer complains of the strange sensation of pain in one ear, very rarely in both ears, and not at all in some cases. This sensation extends in an unbroken line from the lower end of the œsophagus (or subjectively from beneath the xiphoid cartilage) through the pharynx and on into the tympanum. It is described as suggesting a fine wire dragging painfully upon the cardiac end of the gullet, being sharply felt throughout the entire length of this tube, as if the wire were hot, and ending in the tympanum in the acute point already mentioned. In other cases lancinating pains are felt in the chest, neck, and throat, as if they darted about indifferent as to which nerve-fibres they followed. Sometimes the sensation rises to the level of the larynx and there halts in the form of a hot lump. Or, the entire inner surface of the œsophagus feels as if the tube were lined with heated metal. In all cases, however, the original seat of the distress is invariably connected by sensation with the most distant locality which may be involved. So that radiation of the pain simply means that a larger district is included in the feeling of distress.

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[1] Read before the Boston Society for Medical Improvement, March 11, 1889.

[2] Anatomie des Hals.

"There being no nerve," according to Yeo,[3] "which can be compared to the pneumogastric in the variety of spasms in which it participates," it is probably to this nerve that we must look for an explanation of the wide dissemination of distress in the malady under consideration.

Arnold's nerve, the auricular branch of the pneumogastric, is joined soon after its origin by a filament from the glosso-pharyngeal and later gives off an ascending and a descending branch to the facial nerve. The tympanic branch from the petrous ganglion of the glosso-pharyngeal perhaps also participates in the sensation in the tympanum. In short, as Vulpian[4] has shown, the various anastomoses of the vagus with the accessory, glosso-pharyngeal, facial, and sympathetic nerves are largely accountable for the pain in œsophagismus beginning at the lower end of the œsophagus, terminating in the tympanum and involving the intermediate space.

In attempting to solve the problem as to which nerves preside over the œsophagus, Vulpian[4] placed especial importance upon the separate origin of the accessory and pneumogastric, because in his experiments he made a particular point of irritating both nerves at their place of origin. He finally decided that the manifold anastomoses, even before leaving the cranial cavity, of the vagus with the accessory (these inosculations continuing in the later course of these nerves), and that the numerous anastomoses also of the pneumogastric with the glosso-pharyngeal, facial, and sympathetic, made it impracticable, from an anatomical standpoint, to decide as to which of these nerves, the vagus or accessory, were really the motor nerve of the œsophagus, although, *a priori*, it is impossible to deny a functional participation of every one of the five nerves which have been named in the innervation of this tube.

The results of Vulpian's experiments were briefly these: 1. In dogs (*a*) irritation of the roots of the pneumogastric, within the cranial cavity, causes violent movements of the pharynx and œsophagus in their entire length. These roots, therefore, supply fibres which are in part strictly motor and partly reflex. (*b*) Irritation of the glosso-pharyngeal within the cranium causes in the œsophagus movements which are wholly reflex. (*c*) Irritation of the accessorius creates a doubtful effect. At any rate, the motor peculiarities of this nerve can be attributed only to the upper root-fibres which lie nearest the pneumogastric. (*d*) Of all the nerves which anastomose with the vagus, the facial is the only one which possesses an undoubted motor influence upon the œsophagus, and this is decidedly confined to the upper half of the tube.

2. In cats, according to all probability, it is chiefly the fibres of the accessory in the course of the vagus, at least it is not exclusively the actual fibres of the pneumogastric, which produce motion in the œsophagus.

3. In rabbits the share taken by the vagus and accessorius in the innervation of the muscular tissue of the œsophagus is apparently nearly the same in both nerves.

Evidently, then, it would be a difficult matter, with justice, to accuse any special one of these nerves as the offender in the peculiar radiating distress, which in the various forms of œsophagismus (Hamburger including globus hystericus as the first stage) involves nearly the whole of the chest, the neck, the throat, and even the tympanum. Probably, however, notwithstanding the importance of the glosso-pharyngeal as an exciter of reflex movements and in spite of its undoubted share in creating œsophagismus during the existence of a granular condition of the pharynx, it is with the pneumogastric that the odium of blame would chiefly rest.

Luschka[5] makes the interesting statement that the auricular branch of the vagus admits a remarkable sympathy between the ear, the lungs, and the stomach, which, formerly a perfect enigma, was explained by Rahn in 1771. This sympathy makes clear why it is that in many individuals, tickling the external meatus will cause vomiting and a more or less severe, sometimes convulsive, cough. Luschka mentions cases in which a foreign body, or hardened wax, in the ear caused signs of phthisis which disappeared on the removal of the offending body.

The aural symptom in œsophagismus interests me especially, because I find mention of it in only two cases. One is noticed by Zenker and Von Ziemssen,[6] in regard to which these writers merely allude to abnormal sensations in the auricular branch of the pneumogastric. The other allusion is made by Lincoln[7] in the report of a case of cancerous stricture of the œsophagus in which "pain extended up into the ears."

Zenker and Von Ziemssen say that, according to Goltz, irritation of the terminal branches of the sensitive nerves in the œsophageal mucous membrane, by their inosculations with the ganglionic plexuses (demonstrated by Meissner, Auerbach and others) in the walls of the œsophagus, causes a contraction in the irritated portion of the gullet, and that inactivity in the medulla oblongata may be largely responsible for persistence of these contractions.

From the researches of these experimenters, Zenker and Von Ziemssen[8] conclude that obstinate spasm of the œsophagus may result from direct irritation of its walls, from manifold lesions of innervation in the roots and branches of the vagus and in the medulla oblongata, and finally from severe irritations which affect other peripheral and sensitive regions. Luschka[9] says he never succeeded in finding ganglionic cells in the submucous tissue of the œsophagus.

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[3] Manual of Phys.

[4] Med. Jahresberichte, 1866, vol. i, p. 116.

[5] Anatomie des Hals.

[6] V. Ziemssen's Cyclop., vol. viii, p. 210.

[7] New York Med. Jour., 1884, xl.

[8] *Loc. cit.*, Art. "Œsophagismus."

The vagrant and complicated course of the nerves which are involved might be made to explain still further the curious routes of pain in œsophagismus, but enough has been said on this point.

Comparing my experience with that of the various writers, I find but one, Niemeyer,[10] who says that many cases considered as spasm of the œsophagus are merely a sensation of compression. This, he remarks, is common after dog-bite and arises from fear. He thinks the origin of œsophagismus is frequently reflex, proceeding from the uterus, sometimes of central origin and symptomatic of disease of the brain or upper portion of the spinal cord. Attacks, he says, generally occur at meal times and are accompanied by regurgitation of food. Globus he considers hysterical.

Eichhorst[11] accredits œsophagismus to hysteria, hypochondriasis, epilepsy, chorea, and tetanus. A symptom also of rabies. Says it is caused by physical excitement, by disease of stomach and intestines, by injury of the œsophagus, in many cases by affections of the throat (quoting Seney's case in which relief was given by excision of the tonsils), and adds that it occurs during pregnancy and lactation and sometimes in gout. He claims that attacks commonly occur during meals.

Lennox Browne[12] thinks imperfect mastication of food a cause of œsophagismus, and says the spasm appears in gout. Also that it is sometimes caused only by cold, or equally only by hot food or drink, which is then regurgitated.

Strümpell[13] considers œsophagismus a rare affection, occurring especially in hysterical individuals, no anatomical change being present. Thinks it may be reflex from the uterus or from an ulcer in the œsophagus. He deems globus of similar nature.

Zenker and Von Ziemssen[14] suppose the source of the spasm may be traced to powerful physical affections and as a result of hysteria and the psychoses, think it resembles functional disturbance of the respiratory organs, and that it might be referred to lesions of the gray matter in the medulla oblongata. They agree that the spasm may be reflex from abdominal organs or be caused by anger, fright, dread, but think the customary division of the malady into symptomatic and idiopathic cannot be carried out, and add that the differential diagnosis of œsophagismus depends chiefly upon the intermittent character of the dysphagia coincident with spasm of the glottis, neuralgia, palpitation, and predisposition to spasms in general, and finally is to be decided with the sound.

Henna[15] reports a case in which he not only excludes hysteria, tetanus, hydrophobia, etc., but thinks the disease extremely rare. In this opinion he confines himself strictly to *idiopathic* œsophagismus. The case was one of actual constriction, lasting eight days, nearly causing starvation of the patient, a man of seventy years. The stenosis was overcome by a sound and did not return. The writer thinks the case a neurosis, the exact nature of which may not be demonstrable, and quotes Valleix's[16] definition of the condition, viz., "A convulsive constriction of the œsophagus whose explanation cannot be found in that or neighboring organs," as perhaps the best yet proposed.

Ogsten[17] says that pain at the lower end of the œsophagus generally means cancer. In the matter of diagnosis of spasm of the gullet he rightly considers auscultation of great value. He found that in eleven individuals two and a half to eight seconds, or an average of four seconds, was the time required for food to reach the stomach. If a stricture exist liquids will create a churning sound at the site of it. Ogsten explains that at the moment in which fluids leave the mouth the *pomum Adami* rises. At this point of time the fluid passes from the pharynx into the œsophagus, and it is then that the ear placed three inches below the left scapula will hear an "amphoric gurgle" or an "amphoric rushing sound;" and Hamburger is quoted to the effect that the ear can recognize the sound of deglutition as being produced by the egg-shaped form in which the substance is swallowed, the broad end going first; and that when the stricture is reached the egg-shape is broken and the change can be heard. Ogsten naively adds, "My ear cannot recognize an egg-shaped sound."

B. W. Richardson[18] reports a patient who could swallow cold foods and liquids but in whom hot substances created pain and were often regurgitated. Richardson thinks that heated foods are likely to produce contraction of the circular fibres of the œsophagus, "while cold," he says, "has a tendency to relax them. Heat irritates, cold soothes. It is better and easier to introduce a cold than a warm tube or sound." My experience would teach me the exact opposite of this advice.

Albert,[19] after an excellent and instructive diagnosis by exclusion, says that spasm of the œsophagus arises through a disturbance of the innervation of this tube, which causes spastic contraction of a portion of the same and hence the changes which occur in the symptoms. The œsophagus is now open, now closed. He compares the spasms to similar strictures of the urethra occurring especially in hysterical individuals, and cites a purely neurotic case in which the patient could swallow nothing but liquids for two years. Mere mention of the trouble brought on a spasm.

Lewis[20] mentions the case of a man who could swallow one mouthful of water, two with difficulty, while the third was regurgitated. A sound was passed without meeting the slightest resistance, but the patient could not afterward retain fluid with any better success. An anodyne mixture was followed in two hours by a sensation of "something giving way inside," and the trouble did not recur. This case suggests Ogsten's statement[21] that sometimes the œsophageal sound must be forced on until its outer end is in the mouth before the stricture is reached. In Lewis's case an obstinate stricture apparently existed, and his sound probably did not go far enough to reach it.

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[9] *Loc. cit.*

[10] Path. u. Therap., Bd. i. p. 523, 8te Auflage.

[11] Spec. Path. und Therap., Bd. ii. p. 66.

[12] Diseases of the Throat.

[13] Spec. Path. u. Therap., Bd. i. p. 561.

[14] *Loc. cit.*

[15] Hosp. Gazette, Oct. 18, 1879.

[16] Guide du Practician, 5th ed., tome iii. p. 584.

[17] Manch. Med. Chron., 1886.

[18] Asclepiad, 1886, iii. p. 65.

[19] Allg. Wien. Zeitg., 1884, xxix. p. 18.

[20] New York Med. Rec., 1886, xxx. p. 516.

[21] *Loc. cit.*

Burrall[22] mentions an attack which he relieved with ether.

Bamberger[23] includes affections of the heart, lungs, and aorta among the reflex causes of œsophagismus.

Debove[24] alludes to a patient in whom the pain radiated from the epigastrium and eighth dorsal vertebra toward the shoulder, not naming which. There was in this case an œsophageal cicatrix, and I cite it simply because Debove is the only writer I have met who found in œsophagismus pain in the dorsal region. Pain in the dorsal vertebræ, and soreness beside, were marked in two of my patients.

As a mere recapitulation and with reference to the symptoms mentioned by the writers whom I have quoted, it may be said that in my cases the attacks were not confined, nor were they peculiar to, meal-times; they were caused neither by fear, anxiety, nor hysteria, nor were they a sequel of nervous ailments and other forms of spasm. The patients were not affected, nor were the attacks caused, by the temperature of food or drinks. Regurgitation, when it did appear at table, was so infrequent, and so mild in character, as never to interfere with a continuation of eating, notwithstanding persistence of the feeling of constriction and severe pain. The act was rarely more than half accomplished, and the sudden sensation of spasm which was its cause did not prevent deglutition of the mouthful of water taken with the hope of relieving the condition. There was only temporary difficulty in swallowing solid food, and I was not obliged to use a sound in any case.

Moreover, it should be repeated that the seizures rarely occurred at table. It should not be forgotten, however, that when an attack came on during a meal, food was arrested in the lower end of the œsophagus, and after a moment's delay passed on. This completion of the act of deglutition, however, did not in any case relieve the pain, which not only remained but often increased, and so long as it lasted, although swallowing was possible, the patient naturally refused to eat.

Valleix's definition[25] of œsophagismus I hold to be unsound, because I unfailingly found a distant cause. The auscultatory symptoms of Hamburger did not occur in my cases.

Ogsten's[26] opinion that pain in the lower end of the œsophagus generally means cancer seems to me unfounded.

In spite of distress I was never obliged to administer ether.

In short, as I remarked at the outset, my cases seem peculiar in the absence of the absolute stenosis which generally is the striking feature of œsophagismus. In my patients the chief symptom was a localized distress, a sense of clutch, weight, compression, all distinctive of spasmodic stricture, the pain, which was entirely unlike gastrodynia, radiating capriciously and causing great discomfort not only in and of itself, but by its reflex effects upon respiration and the heart, and yet at no time complicated, except in a mild degree, by either dysphagia or regurgitation. I have, therefore, considered the lesion, as I have seen it, a localized sensation of constriction without actual contraction of the œsophagus. It is, I think, a form of hyperæsthesia of high degree, a reflex irritability of the nerves of sensation which does not extend to, or at any rate causes only a slight contraction of, the muscular tissue of its locality. The sensation suggests a mechanical condition which probably does not actually exist.

Romberg[27] mentions a patient who suffered such intense pain in the pharynx that she thought it proceeded from a tumor in that locality. There *was* a tumor, but it was connected with the pituitary body. It is a common thing for patients to complain that there is so large a swelling in the fauces as makes deglutition impossible. The physician finds a small ulcer or a slightly enlarged and painful follicle and nothing more. Stone in the bladder causes pain in the glans penis, but stricture of the urethra does not coexist. These examples in proof of my theory might be multiplied. In my patients the affection was invariably reflex in character. I have never failed to discover the coexistence of follicular hypertrophy of the pharynx, accompanied in two cases by intestinal catarrh. Sympathy between distant localities of the mucous membrane is a constant and interesting phenomenon. In a recent case of chronic pharyngitis I found there were large hæmorrhoids; in another similar case there was chronic conjunctivitis. In neither case did I treat the secondary ailment. In the one, the hæmorrhoids, in the other, the conjunctivitis, disappeared upon the return of normal conditions to the throat.

Upon this principle my treatment of the form of œsophagismus under consideration has given relief. Attention to the pharynx has deprived the œsophagus of its habit of spasmodic pain so long as the throat remained in good condition. Intestinal catarrh has been relieved by means of nitrate of silver, one-tenth of a grain three times daily, together with electricity.

When called upon to treat the œsophagismus I have found that the secondary current gave relief. In treating chronic cases the application of the current to the epigastrium for ten minutes, twice or three times weekly, has accomplished much in breaking up the liability of the patient to a return of the distress. But there is another useful method of alleviation. If the patient takes carbonic acid gas in any form, as in a small quantity of seidlitz powder frequently repeated, or any strongly effervescing drink, the eructations which are sure to follow will relieve the sense of constriction.

In two cases the patients had learned to swallow air by means of a spasmodic jerk of the diaphragm. The air could be heard rumbling downwards along the course of the gullet. The trick is similar to the act called "sucking air" in cribbing horses. After air has thus been swallowed twelve to twenty times, or after a sufficiency of effervescing drink has been taken, the stomach experiences a feeling of distention. Under this condition a sudden change of posture from sitting to lying, from standing to stooping, or the reverse, a quick spring to the feet, a lateral or antero-posterior rocking movement of the body, or a blow upon the sternum with the hand, will cause the air or gas to burst upward from the stomach with force and in considerable quantity, and the œsophageal distress is relieved. Sometimes these eructations will occur spontaneously from mere over-distention of the stomach. Having once disappeared, the pain may not return for months. It may reappear within five minutes; or, momentary relief may leave behind a dull memory of the feeling of constriction beneath the xiphoid cartilage, and the pain then gradually returns in lesser or even in greater degree, again to be displaced by the use of air or gas, together with one of the muscular movements; the efficacy of which experience has taught the patient. Relief by this means does not necessarily prove the existence of a muscular stricture in the œsophagus, but it shows, I think, that the forced and sudden distention of the gullet has broken a possible deadlock in the nerve currents of this tube, or has overcome what may have been a localized vaso-motor spasm. It is a curious and efficacious remedy, and generally terminates the trouble in a particular instance. If it fail it has only to be repeated. The help afforded by the galvanic current seems also to make it evident that arrested nerve-currents have again been set in motion. The anti-spasmodics, belladonna, musk, opium, etc., have proved beneficial on some occasions, but I have seldom used them.

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[22] Phys. und Pharm., 1879, p. 46.

[23] Virchow's Path. und Ther., Bd. vi. Ite Abthg. p. 24

[24] Gazette Hebdom., 1885, p. 678.

[25] *Loc. cit.*

[26] Ogsten's paper, *loc. cit.*

[27] Nerv. Krankheiten, 2te Aufl. 1 p. 18.

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THE ANTISEPTIC REMOVAL OF SO-CALLED LOOSE BODIES FROM THE JOINTS;

WITH REPORT OF A CASE THREE TIMES SUCCESSFULLY OPERATED ON.

BY SAMUEL B. WOODWARD, M.D.,
Surgeon, Worcester City Hospital.

April 9, 1887, I saw, in consultation with Dr. Delahanty, M C., a strong, middle-aged man, whose right leg had, a week before, suddenly stiffened in a semiflexed position while he was getting into bed. He could completely flex the limb, but could not extend it. There was moderate swelling about the joint, which was, however, neither tender nor painful. Pressure at the inner side of the ligamentum patellæ caused a movable body to protrude slightly beyond the edge of the ligament, often with a loud snap. The larger portion of this, however, remained always between the ligament and the joint, thus absolutely preventing extension of the limb. In the left knee could be also felt a loose body, which had thus far caused no trouble. Anteriorly over the lower end of the left femur, and over the external aspect of the head of the right tibia, were scars, stated by patient to be those following operations for the removal of similar bodies six years before.

Repeated attempts to dislodge the mass in the right knee-joint failed, and some days later the leg was shaved, washed, and disinfected, and an incision made over the protrusion at the edge of the ligament. The loose body continually slipped from the grasp of an assistant, and it was only after the finger had been passed through the opening in the joint capsule, and the foreign body felt and finally seen, that it could be seized with strong forceps, and by the exertion of considerable force extracted.

The limb could now easily be extended. The joint, which was full of blood, was freely washed out with a warm solution of corrosive sublimate (1–4000), the wound in the joint capsule left to itself, and the external wound sutured with carbolized silk. A few strands of the same material were inserted as far as the synovial sac; iodoform was powdered on the cut, the leg swathed in absorbent cotton, wet in a bichloride solution, and fastened to a ham splint with a rubber bandage. All instruments had been disinfected with hydronaphthol.

The highest temperature recorded was 99.2. All sutures were removed on the fourth day, when there was some serous effusion in the joint, which was, however, neither red nor tender.

The splint was removed on the tenth day. In two weeks the patient was walking about, and in three weeks was at work.

The flattened cartilaginous disk removed, one and one-half inch long by one inch broad, was strongly attached to the inner surface of the joint capsule by a tough, broad band. This prevented its free movement and caused the difficulty in extraction.

By the courtesy of Dr. C. E. Woodbury, superintendent of the Rhode Island Hospital, I learn that in 1880 Dr. Caswell performed the two operations already referred to. The body taken from the left knee was as large as a lima bean; the one in the right resembled an old style copper cent. Full Lister precautions were taken, and the patient discharged well nine days after the second operation.

Interference with these peculiar little bodies has, until lately, been generally considered foolhardy, inflammatory destruction of the involved joint or death of the patient too often resulting. B. Bell advised amputation,in case any operation was undertaken, while Velpeau declared that one-third of those operated on perished. Larrey, in a report to the Society of Surgery of Paris in 1860, gave as the result of 131 operations by direct incision, 98 (74%) recoveries, 28 (21.3%) deaths, and 5 (38%) failures, while by the indirect method, in which the capsule is opened subcutaneously, the foreign body pushed into the cellular tissue, and there left until the capsular wound heals, when it is cut down upon and extracted, 39 operations gave 19 (48.7%) recoveries, 5 (12.8%) deaths, and 15 (38.4%) failures. He claimed to include in these 170 operations all that had been reported since the time of Ambrose Paré, and from them concluded that one should never operate unless there were: 1st, complete mobility of the false cartilage; 2nd, the presence of pain, lameness, and other ill effects; 3rd, failure of palliative measures; 4th, express desire of the patient to undergo an operation after all its difficulties and dangers had been fully explained.

Bryant in the first edition (1873) of his "Surgery" says: "In general, the palliative treatment is the correct one, for, knowing how destructive inflammation of a joint following a wound too often becomes, few surgeons would venture upon an operation without an absolute necessity, and such seldom exists, for, by suitable treatment, the foreign body may become fixed and the limb be freely used as *a stiff one*" *(sic)*.

Of twelve cases of loose cartilage admitted to St. George's Hospital from 1865 to 1876, but five were operated on at all, and of these one died, making the death-rate 20%, and leaving as Mr. J. H. Morgan says, "seven of them presumably limping through life under the idea that it is better to endure the pain and discomfort than incur the risk of an operation."

As half a loaf is better than no bread, so is the partial introduction of antisepsis into our statistics an improvement upon the septic table of Larrey; for, in "Ashhurst's Encyclopædia of Surgery," Barwell, who reports 88 cases, and whose statistics, as they extend from 1860 to 1884, must necessarily include many septic operations, gives, as the result of 48 direct operations, 44 (91.6%) recoveries, and 4 (8.3%) deaths, with no failures; and 29 (72.5%) recoveries, 1 (2.5%) death, and 10 (25%) failures, in 40 cases operated on by the indirect method.

At present, the indirect operation seems to be rarely, if ever, performed, being, with its high percentage of failure, discarded in favor of direct antiseptic incision.

In a somewhat extended search I can find but few reported cases since the year 1874.

I have been able to collect (principally from English and American sources) 105 cases where claim of direct antiseptic incision of a joint for removal of a foreign body is made. In 104 of them the knee was the joint affected.

The list includes, in addition to 92 operations for the simple removal of over 740 loose cartilages (400 being in one instance present), one operation where, besides the removal of a cartilaginous body, a vascular tumor 2 inches in diameter was cut away with scissors, and another where a bony tumor was removed with a saw.

In one case the foreign body proved to be a sarcoma; in one a fibroma; in one a lipoma; and in another a fibro-fatty tumor. In two cases loose pieces of bone were removed; in one a thorn, supposed before operation to be a spicula of bone, and twice bullets were extracted. One of these had been thirteen years in the joint. In two cases "nothing could be found," but, in one of these adhesions on the back of the patella were forcibly broken up.

There was but one death from the 105 operations, and, as that was due to "phlegmonous erysipelas," the asepsis of the operation is at least doubtful.

In two cases suppuration demanded amputation of the thigh, after which the patients recovered.

One of these cases was after removal of a "fibro-fatty body" by Dr. R. F. Neil, where there was "severe manipulation" of the joint; the other was at St. Thomas' Hospital, and no particulars are given.

Stiffness of the affected joint is reported in three cases. In one of these cases 400 loose cartilages were removed, and in the other two, 25 and 4 respectively.

In four other cases slight impairment of motion is reported. In one of these there were adhesions and stiffness before operation, but no loose body. The second is the one where a bony tumor was also sawed off. In the third, recovery was complicated by a secondary hæmorrhage, rheumatic fever, and pericarditis. Of the fourth, we have no particulars. In all other cases prompt recovery with good motion of the affected joint resulted.

In place of Larrey's death-rate of 21.3% and Barwell's of 8.3%, we have here a death-rate of less than 1% (0.9%), with great doubt whether the single death should be recognized as the result of an aseptic operation; while in but ten cases (9.5%) was there failure to produce a perfect joint with good motion.

With proper care before, during, and after this operation, there seems to be then but a remote chance of loss of limb, and almost no risk to life, and although in complicated cases there is a possibility of more or less resulting stiffness, it is to be remembered that a joint containing a loose cartilage is a constant source of annoyance and that the possessor is always more or less crippled by it.

Twenty-seven cases reported by Verneuil, in the *Revue des Sciences Medicales*, for 1878, with 25 recoveries and 2 deaths, have been excluded from my list, on account of his terse comment: "Poor antisepsis;" and 13 cases reported by Axel Iverson in 1874, with 12 recoveries and 1 death, have been also rejected as too early in the history of antisepsis for a fair judgment. In neither of these reports are any particulars given.

Adding these deaths to the one caused by "phlegmonous erysipelas" we have four in all, three of which were in France, and one in Norway, and these are all that I have found reported from any form of operation since 1874.

Cases of Antiseptic Operations for Removal of Foreign Bodies from the Joints.

No.	Reference.	Operation.	Remarks	Operator	Result
1	Lancet, vol. i., 1871	200 loose cartilages.	Elbow. 2 drainage-tubes.	J. Lister.	Healed in 4 weeks, with improved motion
2	Brit. Med. Jour., vol. i., 1874.	1 loose cartilage.	No rise of temperature.	Dr Lichtenberg	Walked in one week.
	Lancet, vol. ii., 1875.	1 " "	Drainage tube 4 days. Joint in state of inflammation at time of operation.	J. Bell.	Healed in 12 days.
4	" " " "	1 " "	Drainage. Dressed daily with the spray.	W. J. William.	Perfect result in 15 days.
5-26	St. Barth. Hosp. Reports, 1876-1886.	Loose cartilages.	No particulars given.	Not given.	Recovery.
27	St. Barth. Hosp. Reports, 1876-1886.	400 loose cartilages.	Joint opened on both sides and drained.	" "	Suppuration of joint with abscesses of leg and thigh. Patient discharged in 6 months with ankylosed joint. Died 2 months later. At autopsy tubercular peritonitis and pleuritis found.
28	St. George Hosp. Reports, 1877-78, p. 763.	1 loose cartilage.	No rise of temperature.	Mr. Holmes.	No impairment of motion. Healed rapidly
29	St George Hosp. Reports, 1877-78, p. 763.	1 " "	" " " "	Mr Stirling.	No impairment of motion. Healed rapidly.
30	St. George Hosp. Reports, 1877-78, p. 763.	2 loose cartilages.	Lithotomy scoop used in joint. No drainage.	Mr. Howard.	No stiffness.

Cases of Antiseptic Operations for Removal of Foreign Bodies from the Joints — Continued.

No.	Reference.	Operation.	Remarks.	Operator.	Result.
31	Lond. Med. Rec., vol. i., 1877.	1 loose cartilage.	Drainage.	J. Bell.	Healed in 2 weeks.
32	Lancet, vol. ii., 1877.	1 " "	Size 1½x 1¼.	S. M. Coffyn.	Walked well in 1 week.
33	Brit. Med. Jour., vol. ii., 1877.	A thorn.	Injury had been followed by pain at motion. Supposed to be a spicula of bone.	C. Heath.	Quick recovery.
34-41	St. Thomas' Hosp. Reports, 1877-1885.	Loose cartilages.	No particulars.	Not given.	Recovery.
42	St. Thomas' Hosp. Report, 1883.	" "	" "	" "	Suppuration of joint. Free incisions on 3rd day. Amputation on 19th day.
43	Phil. Med. Times, 1878.	1 loose cartilage.	Incision through capsule from popliteal space.	Championniere.	Healed in 16 days.
44	Brit. Med. Jour., vol. i., 1878.	Loose cartilages.	....	Annandale.	Complete recovery
45	Brit. Med. Jour., vol. i., 1878.	2 loose cartilages.	Effusion and lameness for 3 months.	H. Cameron.	" "
46	Brit. Med. Jour., vol. i , 1878.	Large lipoma.	Several others removed from neighborhood of joint.	Mr. Barwell.	Healed in 14 days.
47	Brit. Med. Jour., vol i., 1878.	4 loose cartilages.	Severe manipulation of joint.	Mr. Bartleet.	Stiffness of joint.
48	Brit. Med. Jour., vol i., 1878.	25 " "	Considerable rise of temperature.	" "	" " "
49	Lancet, vol. i., 1878.	1 loose cartilage.	....	Mr. Barwell.	Healed in 6 days.
50	" " " "	1 " "	No symptoms.	" "	" " 4 "
51	Brit. Med. Jour., vol. i., 1879.	1 " "	....	J. Lister.	Joint freely movable.
52	Brit. Med. Jour., vol. i., 1879,	Several pediculated growths.	Same patient as No. 51.	" "	Wound healed and movements restored.
53	Brit. Med. Jour., vol. i., 1879.	1 loose cartilage.	Drainage-tube for one day.	" "	Good movement.
54	Brit. Med. Jour., vol. i., 1879.	Nothing found.	Same patient as No. 53. Other knee.	" "	" "
55	Lond. Med. Recd., vol. i., 1879.	2 loose cartilages.	....	Verneuil.	Well in 3 weeks.
56	Brit. Med. Jour., vol. i., 1879.	3 " "	Lithotomy scoop used in joint. Temperature rose twice to 100°. Previous synovitis.	Dr. Humphrey.	Slight stiffness of joint. No difficulty in walking. Soldier.
57	Lond. Med. Recd., vol. i., 1879.	1 large cartilage.	....	Championniere.	Natural movements of joint in 3 weeks.
58	Lancet, vol. ii., 1879.	3 loose cartilages.	No drainage. No swelling. Partial operation by Syme 20 years before.	Annandale.	Recovery. "No limp."
59	" " " "	1 loose cartilage.	No swelling or pain.	"	Free use of joint.
60	" " " "	1 " "	Size 2½x1¼.	"	Good motion.
61	Med. Times and Gaz., vol. i., 1880.	1 " "	No anæsthetic. Shock. Temperature 102.6°. Hospital diarrhœa.	Mr. Ferguson.	Normal joint in 8 days.
62	Brit. Med. Jour., vol. i., 1880.	80 loose cartilages.	Finger in joint found 3 more under membrane, which were left. No drainage.	Axel Key.	Healed by 1st intention. Relief.
63	Revue des Sciences Medicales, Jan. 18th, 1880.	1 loose cartilage.	No fever.	Gillette.	Recovery in 3 weeks.
64	Revue des Sciences Medicales, Jan. 18th, 1880.	1 " "	....	Paquet.	Recovery.
65	Revue des Sciences Medicales, Jan. 18th, 1880.	1 " "	No particulars.	"	Death from "phlegmonous erysipelas of leg."
66	Revue des Sciences Medicales, Jan. 18th, 1880.	Loose piece of internal condyle.	....	Chipault.	Good result.
67	Revue des Sciences Medicales, Jan. 18th, 1880.	1 loose cartilage.	....	Tillaux.	"Guérison complet."
68	Revue des Sciences Medicales, Jan. 18th, 1880.	1 " "	....	"	Recovery.
69	Revue des Sciences Medicales, Jan. 18th, 1880.	Bullet.	....	Ehrmann.	Succes rapide.
70-71	Records of R. I. Hospital, 1880.	1 loose cartilage from each knee.	In one drainage used.	Dr. Caswell.	Complete cure.
72	Lancet, vol. i., 1881.	1 loose cartilage.	....	C. C. Cocks.	Up on 21st day.
73	Brit. Med. Jour., 1881.	1 " "	Secondary hæmorrhage. Rheumatic fever. Pericarditis.	Mr. Jowers.	Healed in 9 days. Slight impairment of motion.
74	" " " "	1 " "	....	Mr. Furner.	Good motion of joint.
75	" " " "	1 " "	....	Mr. Jowers.	Healed in 12 days.
76	" " " "	1 " "	....	" "	Walked well in 34 days.
77	" " " "	No loose body found. Adhesions on back of patella broken up.	Incision 4 inches long.	" "	Patient phthisical. Knee somewhat stiff 4 months later.
78	Lancet, vol. i., 1883.	1 loose cartilage.	20 years' standing.	Pemberton.	Perfect result.
79	" " ii., "	1 " "	....	Griffith.	Healed in 2 days.
80	" " " "	1 " "	Horse-hair drainage.	R. Bell.	Well in 2 weeks.
81	Brit. Med. Jour., vol. i., 1883.	12 pediculated growths.	Removed with scissors. Drainage-tube through joint. T. 100.2° for 2 days.	E. Atkinson.	Patient walked 2 miles with elastic knee-cap in 12th week.
82	Trans. Clin. Soc., 1882.	7 loose cartilages.	Finger scoop and forceps used in the joint. One cartilage overlooked and found 6 months later.	T. Holmes.	No stiffness.
83	Phil. Med. Record, Jan. 21st, 1882.	Loose fragment of bone.	Capsule sutured with catgut.	A. P. Geister.	Recovery in 2 weeks.
84	Phil. Med. Record, Jan. 21st, 1882.	3 loose bodies, also a villous mass, 1½x2, covered with vessels.	Scissors used. 2 drainage-tubes.	" " "	3 years later was entirely well.
85	Phil. Med. Times, Feb. 24th, 1883.	Fibroma.	Behind inner condyle; articulation freely opened.	Nicaise.	Walked in 17 days.

Cases of Antiseptic Operations for Removal of Foreign Bodies from the Joints — Continued.

No.	Reference.	Operation.	Remarks.	Operator.	Result.
86	Trans. Path. Soc., 1884.	1 loose cartilage. Bony tumor removed from condyle with saw.	Counter opening.	Sydney Jones	Slight suppuration. Dressing continued 7 weeks. Motions fairly well preserved.
87	Brit. Med. Jour., vol. i., 1884.	1 loose cartilage.	....	Porter	Good recovery.
88	Brit. Med. Jour., vol. i., 1884.	Bullet.	13 years in joint.	"	Good result.
89	Phil. Med. News, April 5th, 1884	1 loose cartilage.	Removed with bullet forceps. Chill on 4th day. Half ounce of pus escaped on removal of sutures, which included capsule.	Dr. Little	Healed well finally with good joint
90	Phil. Med. News, April 5th, 1884.	1 " "	Catgut sutures in capsule.	W. T. Bull	Recovery.
91	Phil. Med News, April 5th, 1884.	1 " "	No capsular sutures.	" " "	Did well.
92	Phil. Med. News, April 5th, 1884.	1 " "	....	" " "	" "
93-95	Phil. Med. News, April 5th, 1884.	Loose cartilages.	3 operations on same patient, twice on one knee.	Sands.	No rise of temperature. Perfect joint.
96	Phil. Med. News, April 5th, 1884.	1 loose cartilage.	....	A. P. Geister	"Complete cure."
97	Phil. Med. News, April 5th, 1884.	1 fibro-fatty body.	Severe manipulation of joint. Drainage-tube. Irrigation with corrosive sublimate.	R. F Weir.	Suppuration of joint. Threatened septicæmia. Amputation of thigh. Recovery.
98	Brit. Med. Jour., vol. i., 1886.	1 loose cartilage.	....	Morgan.	Recovery under primary dressing.
99	Brit. Med. Jour., vol. i., 1886.	1 " "	2 previous attacks of synovitis.	Lyth.	Recovery.
100	Lancet, vol. i., 1886.	1 " "	Size 2x1¼.	F. Page.	Walked in 2 weeks.
101	" " " "	1 " "	Patient æt 80.	" "	" " " "
102	Trans. Path. Soc., 1886.	2 loose osteo-arthritic deposits.	....	W. Edwards.	Healed soon.
103	Brit. Med. Jour., vol. ii., 1886.	22 loose cartilages.	Largest size of patella. Knee hot and painful before operation	W. J. Shaw.	No change of dressing for 22 days Cure.
104	Annals of Surgery, vol. vi.	Sarcomatous tumor, one in. long with slender pedicle.	No sutures. No drainage	R. F. Weir	No reaction. Walked in 2½ weeks
105		1 loose cartilage with tough pedicle.	Same patient as 70-71.	S. B. Woodward.	Perfect result.

A NEW DEPARTURE IN DOSAGE.[1]

BY F. D. S. STEVENS, M.D., LYNN, MASS.

MANY will object to the title of this paper on the ground that the method of dosage, of which I am about to speak, is not new.

By a new departure in dosage, I mean the administration of drugs in small doses, at short intervals, until their physiological action is manifest upon the patient; in lieu of the old way of prescribing the same remedies in larger doses, at longer intervals, to produce the same effect. I also mean, in many instances, that the physicians shall dispense their own medicines. I hope I will not be misunderstood by this as favoring the dosimetric system of dosage. An examination of the older works upon practice and materia medica will reveal the fact that we do not administer the same drugs in the same way that we did twenty years ago. Until recently, it has been customary to administer certain classes of remedies in full doses, at once, with a view to producing their physiological action with each dose. I presume that the most of us now prescribe or dispense the same drugs in diminished doses, frequently repeated, until the desired effect is produced, and which shall maintain the same action continuously.

The class of remedies thus used are the moto-depressants, such as aconite and veratrum, the excito-motors, such as belladonna and hyoscyamus, and the cerebral sedatives, among which, most prominently, are the preparations of opium. The dispensing of drugs in this way is awkward at first, but it is a habit easily acquired, and once formed, there are few who will care to abandon it.

It is not, however, to the method of giving this class of medicines in smaller doses, at shorter intervals, that I wish to call your attention, but to a new vehicle or medium through which they can be safely and cheaply introduced into the human economy. Until recently, the dispensing of remedies by the regular physicians has been expensive and unsatisfactory. Within the past few years, through the skill and enterprise of our manufacturing chemists, we have had placed at our disposal a class of remedies, called tablet triturates, which make the administration of many drugs by the profession both safe and practicable. It is to this mode of dosage that I wish to call the attention of those present to-night. There are doubtless some present who already use triturates, but it is not generally understood how they are manufactured, and how they differ in composition from the compressed tablets. In order to fully understand this, it will be necessary to describe their origin, composition, and some of the details of their manufacture, and even at the risk of becoming tedious, I shall proceed to do so.

The idea of the manufacture of tablet triturates was the outcome of a series of experiments first instituted by Dr. Robert M. Fuller, of New York, about the beginning of the year 1878, and the subject was first brought before the profession in a paper read by him before the New York Academy of Medicine about that time, and in a subsequent paper, read by the same author, before the New York Materia Medica Society in 1882. The object sought was to find a process which would assure the physician the perfect division in a mass, and the exact apportionment of a remedy in a dose.

Sugar of milk, in almost all of the cases, was selected as the proper diluent and vehicle for trituration, after numerous experiments with cane sugar and other substances. The scope of their use, and the field of their usefulness, was not then thought of, and their possibilities were only gradually unfolded as the processes were perfected, and the product cheapened to make the tablets practicable to the practitioner with the ordinary amount of clientage.

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[1] Read before the Essex South District Medical Society, Nov. 13, 1888

Their successful manufacture depends

1st. *Upon the Selection of the Remedies.*

It is not only necessary for the action of the tablet, after it is administered, that the drug be pure, but necessary for the uniformity of the tablet in appearance and in physical properties. It is impossible to obtain from adulterated drugs chemicals always uniform in properties, and, for this reason, it is manifestly out of the question to use such drugs in these tablets, as the very idea of adulteration creates an uncertainty as to the product of an article thus manufactured.

2nd. *Their Exact Division.*

Trituration is the only sure way of mixing. Triturating and powdering give totally different results.

Powdering is the result of grinding a drug between two roughened surfaces until the result obtained is a finely divided mobile mass.

The term itself implies only a comparative result, because the particles of the drug are only separated more or less thoroughly, as the process is more or less complete, and fractional sifting is the only way to give even a comparative uniformity to the powder. Trituration is the result of a process by which two substances are rubbed together by mechanical means until a complete and equal distribution of both is made. One of the substances is generally of a hard, crystalline character, which catches the particles of the drug to be triturated, and divides them most thoroughly.

The complete trituration should combine two motions, one of a crusher or pulverizer, and the other of a rubber or mixer. It is hardly possible to make a trituration of many drugs with the ordinary mortar and pestle, as a weight of two hundred pounds is often required to make a complete mixture. This is especially noticeable when treating the aconite root, where the covering is tough and hard.

3rd. *The Equal Division of the Mass.*

This is provided for by mixing the trituration with the right proportion of alcohol and water until a paste is made of the required consistence. This paste is then rubbed into moulds which are all made with the same instrument, which insures their absolute uniformity of size. The tablets are then subjected to the process of drying, which is an elaborate affair, requiring a current of dried air at a fixed velocity and temperature. This is produced by means of an air exhaust and fan. It is necessary to air-dry them very thoroughly, or else they will mould in the bottle. What makes the tablet retain its form is the recrystallizing of some of the milk sugar through its mass. No pressure is used to mould the triturate in its original form. Compressed tablets and tablet triturates differ in their physical properties. A compressed tablet is made by subjecting a powder to strong pressure, which is necessary to keep the parts well together. A tablet triturate is made from a powder which has been made into a paste with alcohol and water and moulded into shape; the liquid in the mass evaporates and leaves the completed tablet full of small pores. These pores, by capillary attraction and by absorption, tend to make the tablet diffusible and soluble, while the compressed tablet is put together so firmly that the only part under the immediate influence of the solvent is the surface of the tablet in contact with it. While the tablet triturates are more soluble, and more quickly diffusible, it may be said of the compressed tablets that they retain their form and resist breakage in the physician's satchel.

As to the practical use of triturates, their convenience, compactness, and neatness recommend them for any use they can be put to, and their scope is only limited to the amount of a remedy which can be moulded into their size.

Among the most valuable of the triturates may be mentioned that of arsenious acid made in tablets from $\frac{1}{1000}$ to $\frac{1}{10}$ of a grain, aloin in $\frac{1}{10}$ to $\frac{1}{4}$ of a grain. Among the most useful laxatives are the compounds of aloin with belladonna and podophyllin, or aloin, belladonna, and strychnia. The various salts of ammonium, particularly the muriate, and the compound muriate with glycyrrhiza and cubebs, give gratifying results in throat and bronchial affections.

As a tonic, the combinations of iron and arsenic, or iron, arsenic, and strychnia, or iron, arsenic, and ignatia give prompt result and equal any of the iron pills in the market.

The salts of bismuth, either alone or in combination with cerium, make good tablets, and are applicable to all of the uses that these drugs can be put to. Those who use the Brown Mixture will find it nicely prepared in tablet form. Calomel is made into the triturate in a variety of ways. They are made plain in $\frac{1}{1000}$ to 2 grains each; and in combination with ipecac, opium, codeine, tartar emetic, and podophyllin. They are among the most useful of the triturates and apply to a variety of cases. The compound carthartic pill of the U. S. P. is made in this way at a great saving to the consumer.

Corrosive sublimate is made into tablets of from $\frac{1}{10000}$ to $\frac{1}{2}$ grain each for internal administration, and into 1 grain each, colored blue, for external use. The tablets of the bichloride and protoiodide are very handy in treating syphilitics; they can be used without the patient having any knowledge that he is taking mercury. The danger of salivation is reduced to a minimum. The one-grain tablet, colored blue, is more soluble than the compressed tablet now on the market, and has the advantage that you are not always obliged to make a large solution to get the proper strength for immediate use. Mercury with chalk is conveniently made in triturate form in tablets of $\frac{1}{100}$ to 1 grain each. Turpeth mineral, justly regarded by Barker as the safest and surest emetic for children, is thus nicely prepared and is easy of administration. The compound digitalis tablet, containing of strychnia sulphate, grain $\frac{1}{100}$, and tincture of digitalis, minims 2, I have found very reliable as a heart tonic. Nearly all of the newer drugs are made into the triturate at about half the cost to the consumer of the same remedy in the pill form. Most of the officinal tinctures are made in this form and are very convenient and reliable. Among the advantages claimed for the triturates are —

First. Their Economy.

An examination of the price-lists of one of the leading pill manufacturers in the country reveals the fact that the gelatine coated pill, everything being equal, costs from 25 to 300% more than the tablet triturate. The preparations of arsenic, aloin, ammonium, iron, bismuth, mercury, conium, digitalis, ipecac, nux vomica, rhubarb, strychnia, and many others are sold, with a few exceptions, for seventy-five cents per 1000. The expense to the physician is thus seen not to be large, and a dollar or two added to the bill will cover the expense of the drugs for quite a long sickness. Economy alone should commend them to the profession.

Second. Their Accuracy of Dose.

One of the greatest disadvantages physicians have had to contend with in dispensing drugs was the difficulty and danger of dividing the doses accurately. Long experience in dispensing will enable many physicians to correctly divide a drachm of quinine into six equal parts with a jack-knife. To the average practitioner, and especially to the new beginner, this is, at the best, unreliable if not positively unsafe. The triturate not only removes all possibility of doing harm, but it saves much time by the readiness with which it can be dispensed. The process of manufacture is such that absolute uniformity of dosage is insured.

Third. Their Solubility.

Probably no question has vexed the physician more than the solubility of pills. Various coatings have been devised with a view to overcome this obstacle, most notable being sugar and gelatine. In many instances this answered the purpose very well, but in other cases the pill much resembles, in appearance and solubility, a small bullet. For complete and quick solubility the tablet triturates stand without a peer. Held in the mouth they melt away like cream; dropped into a glass of water they quickly disappear, and I have yet to see the case where the physiological action of the drug was not soon manifest when introduced into the stomach.

Fourth. Portability and Palatability.

A small pocket case will carry tablets enough for all emergencies, but for those who wish to dispense more generally, the ordinary satchel case, with room for instruments, is preferable. I am informed that it is common for physicians to carry satchels of medicine throughout the Middle and part of the New England States. Mr. F. B. Benger, in his presidential address before the British Pharmaceutical Association, says "the bulk of the general practitioners in this country continue to dispense their own drugs." As to palatability, the triturate is unexcelled. They are easily swallowed as a pill, but if for any reason they cannot be taken in this way, they have the advantage of a pill in that they can be easily powdered and taken in jelly, or dissolved in water and drunk as a liquid.

One of the most common causes of failure to get the physiological action of a drug is substitution of the article written for by a cheaper and less reliable remedy. The dispensing of medicines by the physician partially obviates this difficulty.

In many diseases where it is necessary to shield the patient from publicity, the triturate can be used to advantage. This is so in all venereal diseases, where a prescription to the druggist is a virtual acknowledgment of the malady with which the patient is afflicted. One of the great advantages of these preparations is the ease and safety with which the compounds of opium and mercury can be administered.

In many chronic cases it is necessary to give these drugs for a long time. To give a patient a prescription and allow him to get it refilled at will, is one of the absurdities of modern prescription writing. If we administered our opiates and mercurials in person there would be fewer victims of the opium habit, and less prejudice among the laity against the use of mercury. In this connection it is gratifying to learn that the legislature of New York has passed an act providing, "that whenever a prescription contains opium or morphine in which each dose of opium exceeds one-fourth of a grain, or morphia one-twentieth of a grain, the prescription shall not be repeated except by the verbal or written order of the physician."

Such a law would be an honor to the pages of the statute books of Massachusetts. The refilling of prescriptions, without the consent of the physician, is a pernicious and vexatious system and is a robbery from the doctor and an injury to the patient. It would be interesting to know how many devotees of the opium habit have been made in this way, but in every instance, it is safe to say, the blame of having formed the habit is laid at the door of the medical adviser. To a great many mothers and their children, the so-called "regular" physician is a horrible vision of castor oil, squills, and jalap. The arrival of the doctor is looked upon with anxiety and dread, and if he has been so unwise as to order a dose of epsom salts, when a trituate of the mild chloride would answer the purpose as well, his departure is looked for with relief. Coming at a time when we have to compete with sectarian practitioners who habitually dispense their drugs (if sugar and alcohol can thus be dignified), the triturate is a valuable addition to our armamentarium. Much of the prejudice which exists in the popular mind toward the "old school" we owe to ourselves. We do not study elegance of pharmacy and palatability of dosage as closely as we should.

In many cases of imaginary, if not in actual disease, the taste of the medicine, and the impression left upon the mind of the patient, is quite as important as the physiological action of the drug. A method of dosage which sensibly diminishes the cost of the illness to the patient, while it agreeably tickles his palate, is the surest way to dispel the fallacy of homœopathy, for it is by these advantages that that school continues to exist.

The use of tablet triturates has become so quickly popular, and has been so generally monopolized as yet by physicians, that many druggists are prejudiced against them. Their use was never intended to interfere with the legitimate business of a pharmacist, and their sphere of applicability has its limits like every other improvement. Physicians will prescribe them as the best means of administering some drugs, and will carry them to use in emergencies, and in cases where the cost to the physician is small and the saving to the patient relatively large. They will dispense them from their offices when they want a preparation with the action of which they are acquainted, or where it is necessary there should be no delay. In such instances as these the triturate fills a long-felt want. After more than four years' continuous use I can recommend them to the society as a safe, economical, and profitable way of administering medicines.

FOUR CASES OF "WESTPHAL'S PARADOXICAL CONTRACTION,"

WITH REMARKS ON ITS MECHANISM.

I. DISSEMINATED SCLEROSIS. — II. LOCAL INJURY. III. FOLLOWING SUNSTROKE. — IV. HYSTERIA FOLLOWING MALARIA.

BY MORTON PRINCE, M.D.,
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As is well known, when the tendons of certain muscles are suddenly stretched, a resisting contraction is excited in the muscle itself. As good examples as any of this are the knee-jerk and the ankle clonus. In contrast with this, Westphal has pointed out that, under exceptional conditions, a contraction lasting for some little time may be excited in the tibialis anticus, for example, not by stretching, but by *relaxing*, its tendon, as when the foot is suddenly flexed dorsally. Hence, in contradistinction to the first form of contraction, he has called this latter form the "paradoxical contraction." Considerable difference of opinion still exists regarding the mechanism of this contraction, as it still does in regard to that of the knee-jerk. Westphal's explanation is that the relaxation itself of the muscle is a source of irritation sufficient to excite a contraction.

Erlenmeyer[1] has disputed Westphal's explanation, on the ground that if the calf muscles be so manipulated that they cannot be stretched by dorsal-flexion of the foot, the contraction in the tibialis anticus does not occur, notwithstanding that it is completely relaxed. His method of accomplishing this is as follows: While the subject is lying in bed and the knee is bent, the calf is grasped firmly in the hand and pushed strongly towards the heel. In this way the muscles from the tendon to the belly of the calf are shortened, and are not stretched when the foot is dorsally flexed. If this be done, the paradoxical contraction does not occur; and, conversely, if the contraction be first excited, the foot immediately drops in manipulating the calf muscles in the above way.

From this Erlenmeyer concludes that the contraction is not brought about by relaxation of the muscle itself, but is a reflex contraction, caused by stretching its antagonists, the calf muscles.

To all this Westphal[2] replies that he in the first place doubts whether a muscle can be shortened by the process described; and, in the second place, the results are to be ascribed not to shortening of, but to pressure upon, the gastrocnemius; for, if simply pressure be made upon the calf against the bones, without pressing downwards towards the heel, the same results are obtained; namely, the paradoxical contraction does not occur, or is abolished.

Mendelssohn[3] explains the phenomenon by a rupture of the equilibrium of the tonus in certain muscular groups and their antagonists.

Charcot and Richer, who have studied the matter in hysterical subjects in whom they have found an analogous contraction, coincide with the views of Erlenmeyer and Mendelssohn, and believe that the contraction in question is a reflex contraction excited by the stretching of the antagonistic muscles. Their main reason for these views is found in the following facts: It is well known, they say, that in the patients they are speaking of (*i.e.*, hysterical) contraction can be obtained by various methods; massage of the muscles is one of them. Thus, if the tibialis anticus be kneaded, contraction soon sets in, and the foot is fixed in the state of dorsal-flexion; massage of the gastrocnemius brings about the opposite result. Under other experimental conditions, however, different and opposite results may be realized; and this is the point to which attention is particularly drawn. If whilst the calf muscles are kneaded the foot is supported so as to be prevented from yielding to their contraction, we soon see it rise and assume a position of dorsal-flexion, the more marked the more prolonged the excitation of the gastrocnemius and soleus.

They conclude that when a muscle is stimulated, its antagonist is simultaneously excited, the latter having thus a regulating function; and that when the effect of the direct contraction is in some way impeded, the action of the antagonist may become predominant.

Then there are other ways of producing "paradoxical contraction" besides this mode just referred to. It may be produced in the foot, for example, by faradization of the tibialis anticus, and even by volitional impulses.

I have met with four cases in which this phenomenon was present, and, as such cases are comparatively rare, it is worth while reporting them here. Two cases, Nos. II. and IV., are unique.

Case I. is one of well-marked disseminated sclerosis, characterized principally by paresis, tremor of both hands, head and jaw, on voluntary motion, and increase of the tendon reflexes. The tremor of the jaw is so violent that it is with the greatest difficulty that the thermometer can be kept in the mouth for the purpose of taking the temperature.

On flexing dorsally the feet and toes with the hand the extensors are thrown into strong tetanic contraction. The tendons are seen to stand out prominently under the skin, and the toes and feet to be held in strong dorsal flexion for some minutes. The return to the original position is gradual. By volitional effort on the part of the patient the contraction can be overcome.

Case II. is one of considerable interest. The phenomenon is unilateral, and, as will be seen, depends on local causes. When the toes of the left foot are pressed upwards they are rigidly held by the extensor muscles, for a number of minutes (five to ten ?), in the position in which they are placed; these muscles are thrown into strong tetanic contraction, and can be seen to stand out sharply defined beneath the skin; to the touch they are firm and hard. When the foot, as a whole, is pressed upwards the contraction of the tibialis anticus which ensues is much less in degree. The foot almost immediately begins to drop, and returns slowly to its original position in the course of five to ten seconds. Sometimes the foot during its return is attacked with tremor, as if the muscle only reluctantly yielded.

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[1] Centralblatt f. Nervenheilkunde, 1880, No. 17, p. 345.

[2] Ibid., No. 20, p. 417.

[3] Charcot and Richer, Brain, October, 1885.

If, instead of passively pressing the toes up, the patient voluntarily raises his toes, they are seized in the same way with cramp of similar character and severity; likewise with the foot. So severe is this spasm that almost any effort to use his toes results in their being drawn upwards in strong tetanic spasm.

When the spasm has set in, the patient cannot for some seconds or minutes bend his toes, but if they and the foot be firmly grasped, and gently but slowly be worked back and forth, the spasm in a few seconds relaxes. Sudden and strong attempts to bend the toes downwards only tend to increase the spasm of the extensors; or at least are met with strong resistance. But if, while the muscles are relaxed, the toes be strongly bent (flexed) downwards, no contraction in the *stretched* extensors ensues, but when they are again raised, either passively or voluntarily, as soon as they arrive at a certain point they become "set," as the patient terms it, *i.e.*, firmly held by spasm.

The rationale of this spasm was not at first clear, but a little study cleared up the mystery.

The patient attributed the trouble to a gun-shot wound of the toes, the ball being supposed to have hit the great toe and cut the flexor tendons of the others; but a careful examination failed to detect any scar or other signs of injury. The larger joint of the great toe was, however, tender, and it was noticed that the patient sought in walking to relieve this joint of pressure by throwing his weight on the outer side of the foot, while at the same time he tended, as an associated movement, *to raise his toes from the ground.*

This constant action of the extensors of the toes, and in a lesser degree of the foot, was evidently the cause of the observed spasm. From being constantly thrown into contraction these muscles had become irritable, and any excitant, reflex or volitional, resulted in spasm.

A condition had been created similar in many respects to that of the muscles of the arm in writers' cramp.

The "paradoxical contraction" that here ensued on passively relaxing the muscles is beyond question a reflex spasm, originating either in a primary contraction of the calf muscles caused by their being stretched, or in an irritative impulse from the joints. That this latter may have been an active factor is suggested by the fact that in dorsally flexing the toes they became "set" at a fixed point, which seemed to correspond to the position in which they were held while walking.

That the flexor muscles of the toes (as is probably always the case) are also affected by spasm is evident from the position in which the toes are held. They do not, however, contract on being relaxed, as do the extensors. I think there is also a hypochondriacal element in this case, which tended to keep alive the tenderness of the joint for which there seemed to be no anatomical justification. The cramp on volitional action corresponds with what has been observed in other cases.

It should be added that this patient is blind in his right eye, the same being alleged as result of sunstroke some twenty-five years ago. The ophthalmoscope showed deep glaucomatous cupping and atrophy of disk. Left eye: fundus normal.

Case III. is not a pure form, neither the symptoms being persistent nor the case characteristic of any known type of disease. There is a strong hysterical, or at least "functional," element in the case, with a tendency to exaggeration of symptoms from interested motives as a pension claimant. The patient attributes his condition to a sunstroke which he incurred during the late war. Principal symptoms are, dizziness, headache, and feeling of pressure on top of head. Staggers at times in the street, head seems to whirl round, and he is obliged to catch hold of something to save himself from falling. Feels weak generally; unable to work. These symptoms have been gradually coming on since his sunstroke. One year ago obliged to give up work as a carpenter.

Tongue protrudes slightly to right; staggers to right with eyes shut and feet together; voice slightly tremulous; pupils slightly unequal; hearing impaired, — more so, Dr. Leland reports to me, than can be accounted for by the coexisting catarrh of middle ear. Knee-jerks moderately exaggerated at times. No other signs, but he is at times nervous, excitable, and emotional. The "paradoxical contraction" is accompanied at times by spasm of the other muscles of the leg; sometimes cannot be incited at all.

Case IV. This case I had originally supposed to be one of disseminated sclerosis, characterized by exaggerated knee-jerks, marked paresis, and typical tremor. The patient ascribed his condition to malaria contracted during the war.

The "paradoxical" phenomenon was present in the extensors of the toes and feet. Momentary Faradism to these muscles, as well as to the quad. femoris, was followed by tetanic contraction, which persisted after interruption of the current.

But what was most interesting about the case was this: massage of the tibialis anticus was followed by contracture of all the muscles of the lower leg, but that of the calf preponderated, *so that the toes and foot were strongly drawn downwards* (flexed). Continued massage was followed by dorsal flexion, though my notes are not explicit on this point. Friction of the skin over the tib. ant. produced the same result. Both massage and friction, though applied to the leg, caused also contraction in the quad. femoris. This patient I have here to-night, and you will see the picture has in some respects changed. It is some six weeks since I first saw him. The tremor, paresis, and exaggerated knee-jerks are gone. He says that his health has greatly improved, and he is able to work. But the phenomenon in question you will see still exists, though perhaps not in so marked a form as before.

In kneading the tib. anticus, or applying friction to the skin over it, you will see contracture sets in; but the toes and foot are not drawn downwards as before, but upwards; that is, contracture occurs in the muscles massaged. Massage of the calf muscles is not followed by contracture.

The similarity between this phenomenon and that produced on hypnotic subjects by Charcot and others is striking. As is well known, the Salpêtrière School report contractures following friction and massage as one of the phenomenon of hypnotism. Other experimenters, those of the Nancy School, have failed to confirm these results, and claim that these contractures are caused by suggestion. In this case of mine I think suggestion out of the question, as when first examined I was as much surprised at the result as the patient, and I had only a vague idea as to what would happen; nor had a word previously been said on the subject by me to any one. The idea of massage only occurred to me at the moment I applied it. The disappearance of the other objective symptoms shows the case to be of a functional nature, with something of an hysterical element in it, possibly caused by malaria.

To return to the mechanism of this contraction, a study of the effect of passive and volitional motion of joints in normal subjects will throw considerable light upon it, if this be still required.

In the first place, it is absolutely impossible, by any action of the will, to contract the flexors or extensors of a joint without at the same time contracting in a lesser degree the antagonists. If we could contract the flexors of the wrist, for example, without doing likewise by the extensors, the hand would flop over upon the forearm, as in the dead subject when the tendons are pulled. The simultaneous action of the extensors evidently has a regulating influence. If, again, in the normal subject we *passively* move a joint like the ankle, that is served by a tendon (tendo Achillis) that responds to stretching, it is easy to demonstrate that not only the muscles that are stretched contract, but there is always more or less contraction in the relaxed antagonists; that is, when the foot is dorsally flexed, not only do the calf muscles contract, but the tibialis anticus contracts, also, in a lesser degree. This observation I believe to be correct, and, though not easy always to make out, I have been able to demonstrate the fact on a number of normal subjects. When the foot is pressed upwards, if a finger of the other hand be placed over the tendon of the tibialis anticus, a distinct, though momentary and sometimes slight, often pronounced, jerk upwards of that tendon can be felt. This jerk follows the upward flexion of the foot by a distinct interval, as if it did not occur until the calf muscles had been put upon the stretch. This interval between the pressing up of the foot and the contraction of the tibialis anticus tendon I have also found very pronounced when the paradoxical contraction was present, showing another point of resemblance between the two. In examining this contraction of the tibialis anticus in normal subjects, great care must be taken to eliminate the effect of volitional effort on the part of the patient, — not always an easy thing to do. From these facts I am disposed to regard the "paradoxical contraction" as *not entirely a new phenomenon, but only an exaggeration of a normally existing one*, and to agree with Erlenmeyer, that the so-called paradoxical contraction is not caused by a *relaxation* of the tibialis anticus, but is a reflex caused by the stretching of the calf, and possibly, I would add, by irritation of the sensory nerves of the joint. The difference between the normal and abnormal is one of degree, the mechanism being probably the same.

The nature of the pathological change upon which the increased irritability of the muscle in the abnormal phenomenon depends is as yet unknown.

The spasm of all the muscles moving a joint in any attempted movement is well observed in an inflamed joint. The spasm here is undoubtedly reflex, but the inciting impulses without question arise from the sensory nerves of the joint, as well as from the particular muscles that happen to be stretched.

Some further facts bearing on the mechanism of what I may call the antagonistic contraction are obtained from the phenomenon of hypnotism. It seems to be admitted that with subjects in the lethargic condition, and in some hysterical subjects, kneading a muscle is not only followed by contraction of the muscle kneaded, but its antagonists are, in a less degree, excited, an action that can only be reflex.[4] This was observed in Case V., narrated above.

The muscles in which this phenomenon is most commonly observed are, as has been said, the tibialis anticus and extensors of the toes. It has also been found in the flexors of the knee, and rarely in the arm muscles. In a case of hysteria or hypochondriasis in the male, I was able to obtain this contraction in the shoulder muscles as well as in the toes. It is fair to state, however, that I could not, in the one examination allowed me, completely satisfy myself of the absence of all volitional impulse in this case. As Westphal remarks, there are some people who seem to be unable to allow a joint to be perfectly passively handled, any attempt to move it being followed by volitional contraction of the relaxed muscles. It requires great care to eliminate all fallacy from this factor.

The diagnostic value of the symptom is still undetermined. Westphal observed it in cases of tabes, and in others in which disseminated sclerosis could, with probability, be diagnosed, although typical symptoms, such as muscular rigidity and tremor, etc., were absent.

In the cases of tabes, motor weakness was always present, so that it can be surmised that more than a pure posterior sclerosis was present. In other cases in which the symptom was present the clinical picture was so peculiar that they could not be classed with any known type of disease.

Westphal also observed the symptom in paralysis agitans.

Ross has found it in a case of hæmatomyelia, and Charcot and Féré in certain forms of hysteria, as above mentioned. In no case has there been observed muscular rigidity or excess of myotalic irritability.

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[4] Binet and Féré. Le Magnetisme Animale, p. 83. Charcot and Richer, *op. cit.*

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

March 11, 1889. Dr. William L. Richardson, President, in the chair.

Dr. Hamilton Osgood read a paper on

A PECULIAR FORM OF ŒSOPHAGISMUS.[1]

Dr. F. I. Knight: This is to me an interesting paper. It is a valuable suggestion that these somewhat indefinite symptoms may be due to a spasm of the œsophagus. I have not been prompted hitherto to thus class such symptoms, but I do not see why we may not accept the explanation of Dr. Osgood for certain cases. The great difficulty in diagnosis of the cause of œsophagismus has been that men are so inclined to look at the symptoms from a too narrow point of view. As in bronchial asthma, because certain cases are due to disease in the nose, some men are inclined to ascribe all cases to nasal disease. It is probable that most cases of œsophagismus are due to reflex action from disease somewhere along the digestive tract, usually in or near the œsophagus, but not always. We all have probably seen the reports of cases in which spasmodic stricture of the œsophagus was due to reflex action from cancer of the stomach.

The use of electricity locally, *i.e.*, by putting the pole into the œsophagus, is one attended with considerable danger. It has caused fatal syncope.

Dr. Langmaid: I am not familiar with the set of symptoms which the writer describes.

A feeling of fulness extending from the epigastrium to the throat, and especially localized near the situation of the cricoid cartilage is often complained of, but I have never met with a case where pain was felt in the ear. The causes have been —

1. Local faucial disease.
2. Alimentary or uterine derangement.
3. Hysteria, or nervous disorder of some sort.
4. A weakened heart, or diseased blood-vessels.

Dr. Osgood's supposition as to the cause of the sensations complained of by his patients may be right, but I cannot believe that œsophageal spasm, unconnected with the swallowing act, is common.

Dysphagia, more or less serious, may arise from spasm or reversed peristaltic movement of the œsophagus, but I have never found the bougie arrested by what I could consider a spasmodic resistance.

In any case in which the bougie is not easily passed, I suspect the existence of organic stricture, malignant or inflammatory, or a sacculated œsophagus.

Dr. M. H. Richardson said that the paper of Dr. Osgood suggested points of great interest to the anatomist and surgeon. The reflex symptoms so often coexisting in parts of the body remote from each other, are frequently explained by the known anatomical inosculations of the nerves supplying the parts affected. Blake and Rotch, in their valuable paper published in the *American Journal of Medical Science*, have called attention to various reflex aural symptoms observed in children, and have explained them by the well-known anatomical connection between the different cranial nerves. Ranney, in his valuable and interesting book on the "Applied Anatomy of the Nervous System," emphasizes the same fact. It is well known that the relation between the glossopharyngeal, pneumogastric, and spinal accessory nerves is very intimate where they issue from the jugular foramen. Some of the symptoms referred to by Dr. Osgood in his paper are very probably due to this intimate relation.

The existence of pulmonary congestion after division of the vagus, with symptoms of cough and dyspnœa is a case in point. The well-known cases where aural symptoms have been relieved by the drawing of an offending tooth also confirm the existence of this close nerve-relation.

The speaker thought that some cases of malignant disease of the œsophagus were at first very suggestive of spasm of the tube. He had seen recently one case in which difficulty in swallowing with spasms of pain at irregular intervals were the prominent symptoms. Between these attacks there was no difficulty in deglutition, and the patient seemed to be perfectly well. After one unusually severe spasm, which lasted off and on for a week, the probang was passed down the œsophagus nearly to the stomach, where the contraction was so great that the smallest sized probang could not be introduced into the stomach. This case proved to be one of malignant disease and resulted fatally a few weeks after the discovery of the stricture.

In this, as in two cases of obstruction due to foreign body, auscultation of the œsophagus was tried without any information whatever being obtained as to the seat or size or nature of the stricture.

Dr. F. C. Shattuck confirmed the remarks of Dr. M. H. Richardson with regard to the difficulty of arriving at any satisfactory conclusion as to the seat of the œsophageal obstruction in the case alluded to by that gentleman, and said that in other cases of œsophageal stenosis his results from auscultation had been nearly equally negative.

Dr. Osgood: These cases have accumulated during a number of years. I have called it œsophagismus on account of the sensation experienced by the patients.

Dr. Maurice H. Richardson reported

A SUCCESSFUL CASE OF CHOLECYSTOTOMY, FOR EMPYEMA OF THE GALL-BLADDER AND REMOVAL OF CALCULI.

So far as he was able to find, this was the first successful case of the kind reported from New England, among one hundred and fifteen cases collected from the medical literature since the first operation in 1867, by Bobbs, an American surgeon. The first predetermined cholecystotomy was performed by Marion Sims on the 18th of April, 1878, but unfortunately with a fatal result.

The patient was sent to the hospital by Dr. Titcomb of Concord, Mass., with a correct diagnosis. This fact was not known till after the operation.

Mary W., æt. forty, married, seven children. (Vol. 240, p. 21, Mass. Gen. Hospital Records.)

August 28, 1888. Patient had had fairly good health; seven children. Oldest child fifteen, youngest two and a half. Miscarried at three months, December, 1887. Catamenia regular and without pain till a year ago last spring. Since then has had pain before and during first part of menstruation. Has had pain in right side for eleven years. Three years ago had pain more severe, and perceived a bunch the size of an egg just under the ribs on the right side. Catamenia the last few months scanty. Last period July 13, none since.

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[1] See page 401 of this Journal.

Four weeks ago had attack of pain in left side with epigastric tenderness and pain. Difficulty in taking a long breath; chilliness. No pain over seat of tumor. Thinks she was very yellow during the attack. Bowels constipated usually. Micturition frequent and painful.

Physical examination: —

Large, strong, and healthy-looking woman. In the right hypochondrium, extending down into the lumbar region, there was a smooth, movable tumor about the size of a cocoanut. Spherical in shape; hard and elastic. Tumor was easily displaced and moved freely with respiration. Its position suggested kidney tumor, though rather too high. The tumor was flat on percussion and no fluctuation could be made out. Examination of urine negative. Vaginal examination also negative. General condition good. No constitutional disturbance. No jaundice.

September 3rd. Incision made in right linea semilunaris. Tumor found to be connected with liver, and probably a dilated and inflamed gall-bladder. Aspiration resulted in the withdrawal of a quart of purulent fluid, light yellow in color. The cyst was withdrawn from the abdominal cavity, and the greater portion cut off by means of the actual cautery. This brought the base of the tumor well within reach of the finger.

Five gall-stones a quarter of an inch in diameter were found in the bladder, a sixth could be felt impacted in the duct. This was squeezed back into the gall-bladder with the fingers placed outside the duct. A seventh could be felt, and this was slipped along in the other direction and gave no further trouble. It was probably forced into the common duct and into the duodenum. The remaining portion of the bladder wall I stitched to the edges of the abdominal wound, making a very satisfactory joint. The patient made a rapid recovery. The temperature went to 100° the evening of that day. Discharged well November 1.

Strict antiseptic precautions, a solution of corrosive sublimate being used.

It is difficult to understand why there was little or no discharge from the gall-bladder. The most probable explanation is that the cystic duct was closed completely till the operation. The dilatation of the gall-bladder was caused by the secretions of the isolated bladder-wall. At the operation the cystic duct was cleared of the obstructing stones and through the patent canal the subsequent secretions escaped.

Dr. F. C. Shattuck said it was not his fault that Dr. M. H. Richardson had been the first to open the gall-bladder in this vicinity. In July, 1888, there was a woman in his service at the Massachusetts Hospital who had been disabled for months by pain and other symptoms pointing to gall-stones. There was a small tumor in the region of the gall-bladder. No stones had ever been seen. A positive diagnosis of impacted gall-stones in the cystic duct was reached, and, after consultation with Dr. Cabot, an operation was strongly advised. This advice was not taken and the woman returned to her home in Andover. Recently a letter was received from her husband saying that the diagnosis had been confirmed by the passage of a gall-stone.

The speaker had been much interested in Sims case, and had been on the watch for a suitable case for operation ever since, but that above stated was the first which had come under his notice.

The operation is one which will unquestionably grow in favor in view of the freedom from danger when skilfully performed, and the brilliant results which have thus far followed it.

Dr. E. G. Cutler said he had made autopsies in several cases where death had resulted from obstruction by gall-stones.

In one case symptoms of obstruction, with jaundice, had existed with occasional exacerbations for thirty years. Some time before death (years) an operation might have been performed. At the examination there was found an old pericystic inflammation which would have made an operation within some months impossible.

In another case there had been persistent vomiting with pain and occasional jaundice and alternating biliary and clay-colored stools. Operation had been entertained but had finally been given up. At the post-mortem examination, a small round stone the size of a cherry was found just at the orifice of the common duct. The opening into the duodenum was very small and circular, and had a dense cicatricial edge. The duct extended one and a half inch into the duodenum. A probe passed down from the dilated cystic duct did not encounter the stone, nor could anything be felt with the finger on careful search. On opening up the duct to its very end with scissors the stone was accidentally discovered. Unquestionably the stone would have been missed in any ordinary operation.

In a third case there was occlusion of the cystic duct and a large tumor of the gall-bladder containing clear fluid and a number of stones. Ulceration had occurred in the dependent portion, followed by perforation, peritonitis and death.

In a fourth case, a patient of Dr. J. B. Ayer reported before this society a year ago or more, there were stones in the gall-bladder, with ulceration, causing partial thrombosis and pylephlebitis, perforation, peritonitis, and death.

He had seen but one case of impacted gall-stone with a tumor of the gall-bladder. The tumor was in the usual position, and was the size of the fist. The patient, advised to enter the hospital, disappeared.

FLUID FROM PLEURAL CAVITY.

Dr. F. C. Shattuck showed a specimen of fluid removed that morning from the left pleural cavity of a hospital patient. The fluid was dark reddish brown and contained, in addition to fresh blood cells and blood pigment, very abundant crystals of cholesterin. In October, 1884, the patient, then twenty years of age, came to the office of the reporter with a history of pulmonary tuberculosis pointing to a duration of five months, with much constitutional disturbance, and the physical signs of a cavity at the left apex, abundant râles throughout the left lung, and fine crepitus at the right apex Under treatment there was some improvement in the rational signs, though the physical signs extended over a larger area, especially in the right upper lobe.

In January, 1885, it was noted that there was some effusion at the left base. The patient then ceased attendance, but came to the office in May, 1887, in response to a request, as it was heard accidentally that he was at work and quite well.

Physical examination at that time indicated the presence of a considerable effusion in the left chest with moderate displacement of the heart. There was dry crepitus over the upper portions of both chests. He reported that he could walk many miles, but could not run without dyspnœa. Cough and expectoration were very scanty and he had gained twenty pounds in weight in the past two years.

About a week ago he entered the service of the reporter at the Massachusetts General Hospital free from pain, cough, or expectoration, but with the cardiac impulse in the fifth right interspace an inch outside of the nipple. The breath and voice sounds were absent on the left; there was some dry crepitus over the upper portion of the right chest.

His dyspnœa is slight, he worked at printing until the day before entrance, and his reason for entering the hospital is the advice of a physician whom he consulted, and who told him that his heart was out of place.

Knowing his previous history, and bearing in mind the fact that the compression of a tuberculous lung by fluid or air in the pleural cavity is often a conservative process which tends to arrest the lung destruction, the plan of treatment has been to make small and repeated tappings.

The characters of the effusion show that hemorrhage has been recent; and the cholesterin, a product of the fatty metamorphosis of the endothelial and lymphoid cells, shows that the effusion is of long standing.

Pleural effusions containing cholesterin are not common. The reporter had seen but one before, and this was not hemorrhagic.

It has thus far been impossible since he entered the hospital to obtain sputum for a bacillary examination.

Dr. Knight: I want to corroborate what Dr. Shattuck has said about the undesirability of removing a large quantity of pleuritic fluid in an old case before it has been determined whether the lung will expand or not.

Patients have been made decidedly worse by this treatment.

Recent Literature.

Electricity in the Diseases of Women. By G. Belton Massey, M.D. F. A. Davis, Publisher.

This book of about two hundred pages is according to the author "the first attempt at a complete treatise on the electrical treatment of the diseases of women." When we consider the growing interest in this method of treatment for a large variety of pelvic disorders, we are prepared to give such a concise, clear, and fair statement of the theoretical and practical value of electricity as this is, a warm welcome.

The author has succeeded admirably in his aim. He has simplified the subject so that it need present no difficulty to the average general practitioner, and has given a fair idea of the limits within which this agent may be of use.

The book will be a great help to the large number of general practitioners and specialists who are beginning to use electricity in their practice.

Dictionary of Volapük. By M. W. Wood, Captain and Assistant Surgeon, United States Army. New York: Charles E. Sprague. The Office Publishing Company. London: Trübner & Co. 1889.

If there is ever to be a universal language, its usefulness will be measured by its more or less perfect adaptation to the needs of the commercial and scientific world; and certainly no science should be more ready to accept a language which can be called, in the truest sense, universal, than that of medicine. Whether such a tongue should have within it the potentiality of higher literary expression is quite apart from our present discussion.

In our day every physician who aspires to eminence in the profession should be able to read medical literature in more than one language. Especially is this important to those who teach; so that there can hardly be any question as to the general desirability of a language which shall be adapted to the needs of scientific medical expression, and which shall have, at the same time, the other many requisites of a universal tongue.

Whether Volapük is to be the coming means of international medical expression probably no one would at present dare predict. As to its use for the purposes of general correspondence, if we can trust the reports of the enthusiasts, there is already such a wide-spread acceptation of its value as to leave no doubt of ultimate success.

In forming a judgment upon the medical side of the problem the book before us does not give much aid. The admitted object of the author is to furnish "an exposition of the now considerable vocabulary of Volapük, which will aid English-speaking people in acquiring a practical familiarity with this international language;" and if we take the limit of his expressed plan as the limit of what should have been aimed at in such a work, then we can readily say that the author has gained a marked success.

If, however, the physician examines the book with an eye to the part which interests him in a professional way, he can find, to be sure, the equivalents for certain general medical and anatomical terms, but he will feel much disappointment in their lack of completeness. For example, it is of interest to know that in the new language the termination *ar* signifies a science, while the ending *el* furnishes the personal element, so that medicine becomes *medinar*, and *medinel* signifies the physician. But our faith in the boasted regularity of the endings is somewhat shaken when we find that the surgeon is *gülel*, while surgery is shortened to *gül*, without the characteristic word-ending.

Again, the termination *ip* signifies disease, and inflammation becomes *hitip*, or heat-disease, while the specific disease phthisis is written *luegip*, *i.e.*, lung disease. What form would give us pneumonia, the author neglects to say. The ending *sük* is said to determine a passion for something, and with it is legitimately formed *dlinisük*, drink-passion, or dipsomania; but we are surprised to find that the corresponding word kleptomania is called *tifäl*, its suffix, *äl*, being defined as one which indicates a "peculiar mental characteristic."

These instances are given simply to show that the new tongue, in its present state, or at least as it is given us in the present volume, cannot appeal strongly to the medical profession for support. We say that the more readily since, if there were an even fairly exhaustive vocabulary of the medical and allied sciences, it would be presumed that the author, who is a medical man, would think it desirable to incorporate such forms in his work.

We are forced to the conclusion, therefore, that however desirable a universal medical language may be, and however well the principles on which Volapük is formed may yield themselves to the requirements of medical terminology, yet English-speaking doctors have not yet been presented with a vocabulary even remotely approximating their needs. These statements are not to be taken as strictures on the language as such. From the medical standpoint there can be no just criticism of the new speech until such a vocabulary has been prepared and submitted to the test of usage.

The typography of the book is excellent, but its arrangement is absurdly confusing. If it were not thought desirable to separate the English-Volapük and the Volapük-English lexicons, it would seem that they at least might have been placed on opposite pages, which could then have been made to correspond in alphabetical arrangement. But when varying portions of each vocabulary are placed on every page, and with no exact correspondence of the initial letters, the confusion is as great as it could well be. Any errors of judgment in this direction are partially atoned for, however, by a remarkably clean print, definitions that are in general well chosen, and a marked absence of errors in the text.

Physicians' Leisure Library. Abdominal Surgery. By Hal C. Wyman, M.S., M.D., Professor of Surgery and Operative Surgery, Michigan College of Medicine and Surgery, etc.

The purpose of this work is to aid students and practitioners in the elementary study of abdominal surgery by a plain presentation of facts, examples, and results as they have come under the author's notice in his own investigations and practice. The author has been impressed with the fact, that the development of "technique" in abdominal surgery is of the utmost importance in saving the life of the patient. He therefore suggests a large number of experiments on dogs which shall be a rehearsal for the student of any operation that he may have to perform in the future. The author states that no one would feel justified in attempting to apply the various intricate intestinal sutures, without previously having rehearsed their application. An admirable little book, and well fitted for its purpose.

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SIR EDWIN CHADWICK.

After more than sixty years of almost, if not quite, unexampled persistent labor for the public welfare, chiefly in the domain of sanitary science and public health, Edwin Chadwick, still actively at work in the ninetieth year of his age, has been rewarded with the non-hereditary title of K.C.B., the C.B. having been conferred upon him a number of years ago.

Sir Edwin Chadwick's first important work was an essay in the *Westminster Review* for April, 1828, where he demonstrated in an article of most extraordinary labor and research that the circumstances which surround human beings must have an influence upon their health; that health must improve with an improvement of these circumstances; that many of these circumstances which were unfavorable to the healthy lives of men were under man's control, and capable of being removed; that the practice of vaccination, the diminution of the ancestral vice of hard drinking, the increase of habits of cleanliness, the improvements in medical science, and the better construction of streets and houses, must, according to all medical and popular experience have contributed *à priori* to lengthen life; and he proved by a citation of facts from numerous authentic sources not only that the government actuary was entirely wrong in maintaining the opposite ground but the government was losing annually enormous sums of money by acting upon his opinion. This, his first, illustrates the thoroughness of all his work throughout life, his principle being to collect an immense mass of facts and then by deducing the only possible conclusions from them to give to his arguments an irresistible force.

As a member of the factory-labor commission, in 1832, he showed that defective drainage, ventilation and water-supply, acted, with excessive toil, to depress the health and shorten the life of the factory population. In the same year, he was assistant commissioner, and afterwards chief commissioner and secretary, of the commission on the operation of the poor-laws in England and Wales, his own report being a model. This report and that on the health of towns of 1842, are the pioneers of sanitary reform in Europe and this country, and resulted in the enactment of the Public Health Act of 1848, and in the establishment of a general board of health, of which Chadwick was the most active member. In the last half-century there has been scarcely a subject in sanitation, social science, poor-law and civil administration, education, etc., to which he has not contributed most liberally with his time and his pen. His more important papers have been collected by his life-long friend Dr. B. W. Richardson, and published in two volumes entitled "The Health of Nations."

The late Earl Shaftesbury's last public resolution in Parliament was that the like recognition should be given to distinguished public sanitary science — the science of saving life — that is given to distinguished public military and naval service. In late furtherance of this resolution, a meagre recognition of the most distinguished service in saving life comes in the form of a knighthood. If the recipient had destroyed among the Zulus or Afghans a small moiety of the lives that he has saved the state, to say nothing of increased health, strength, and efficiency to the nation, or if he had been engaged in some successful political jingoism, his reward might have been much greater. But to a man whom the *Municipal Review* calls the Socrates of our age, that is of small moment. In his numberless reforms, he has been obliged to face and overpower vested interests, penny-wise parsimony, and the spirit of bigoted complacency that rules our boards and authorities generally. It is quite consistent that his work should not have been earlier and fully recognized.

PATHOGENIC PROCESSES AND PATHOGENIC THERAPEUTICS.

It has been often said that the practice of medicine is based on empiricism. Medicinal agents have been given, not because it was known how they benefit, but because it was known that they do benefit. It was an accident, a process of empiricism, that first led to the discovery of the purging property of jalap and senna, the anti-malarial property of quinine, the antisyphilitic property of mercury. The word *property* is the fitting word here to employ; it has been, and is largely now, the final answer to the question how medicines act when administered for certain ends. The ascription to opium of a *virus dormitiva* by Molière's medical student was then the most scientific explanation that could be given as to how opium causes sleep; nor can we, even at the present day, add much to that explanation; we can simply be a little more explicit as to the action of opium on the nervous centres, on the vaso-motors, and on the movements of protoplasm, and we can, in a measure, ascribe to the different alkaloids of opium the part which severally belongs to them in exciting or inhibiting functions. So with regard to quinine. We may not be able to dispense with the old explanation of its *modus operandi*, but we can add that it (probably) antagonizes certain pathogenic microbes. That this is an advance on the ignorance of the past, no one will dispute.

The dominant tendency of the present epoch is to regard disease and its treatment from a pathogenic point of view. That the truer notions which we are slowly acquiring as to the origins and modes of disease are destined to be fruitful in therapeutic results, will be conceded by every one who has kept up with the progress of the times. The constant endeavor of the future will be to substitute positive pathogenic notions for the hypothetical systems of the past, nor will specious formulæ much longer fool intelligent men.

It might seem as though the task which medical science is now undertaking of finding out the special pathogeny of each disease with reference to instituting a system of pathogenic therapeutics is one demanding ages of study and research, but we should remember that if morbific causes are innumerable the number of pathogenic processes is limited. Charles Bouchard, whose utterances always deserve respectful attention, sums up these morbid processes under four heads:[1] —

1. There are morbid processes which result from antecedent disorders of nutrition. Nutritive imperfection (errors in cellular life in the processes of assimilation and disassimilation) becomes disease when it passes beyond certain limits. Just as the degree of metamorphosis varies, so the quantity of matter transformed in a given time may vary, even in health, but there is a point where either excess or deficiency of transformation constitutes disease. Maladies of nutrition are especially chronic maladies; such are gout, obesity, diabetes, hepatic lithiasis, renal lithiasis.

2. Mechanical, physical, and chemical causes may effect directly the cells of an organ, or of the entire organism, and produce, without any antecedent modification of nutrition, without the necessary intermediation of the nervous system, a disturbance

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[1] Semaine Medicale, 1889, page 106.

of life, of nutrition and function. This constitutes a group of diseases of which traumatisms and poisonings are the principal types.

3. Morbific causes may also disturb the nutrition and function of the cells in an organ or in an assemblage of organs indirectly, through the mediation of the nervous system. In other words, certain pathological results may be brought about by nervous reaction, — trophic or vaso-motor nerves, nerves of sensation or motion, or of the special senses, being more or less permanently affected. Such effects may be produced by shock, emotion, injuries of nerves; and paralysis, chorea, epilepsy, hysteria, neuralgia, etc., may be among the symptomatic manifestations. We generally find in these cases an association of two or more of the fundamental morbid processes here outlined.

4. The fourth morbid process is indicated by the name infection. A micro-organism, by its presence, or indirectly by the ptomaines which it secretes, may cause serious disturbances in the organism. It is only of recent years that the attention of pathologists has been seriously and fruitfully directed to this factor of disease.

It is essential as the basis of rational therapeutics that these morbid processes should be well understood. Too much emphasis at the present day is placed on the one factor of infection. Too little account is taken of morbid predisposition, of diathesis, which imply antecedent troubles of nutrition. Thus, there are physicians who are content to treat gout medicinally, *i.e.*, by lithia and other alkalies, and diabetes by bromides, codeia, and other pharmaceutical remedies, forgetful of the fact that they have a vicious constitutional habit to treat, and that while sound hygienic therapeutics can do something to remedy this vicious modality, medicines have but a transient effect, and can only aid the cure which must be brought about mainly by other agencies.

Moreover, in the warfare with the infectious diseases, the microbe is only one factor, and the condition of the organism invaded, *i.e.*, the culture soil, is equally important. Thus, it is axiomatic that a state of health fortifies against infection, while certain deteriorations of the health (derangements of nutrition) are favorable to the development of the infectious agent. Hence rational therapeutics will not trust too much to germicides and antiseptics in the treatment of infection, but will also aim to render the organism impregnable.

Our knowledge of the agency of microbes in disease has of late been enlarged by the data which we now possess respecting some of the modes by which infectious micro-organisms produce disease. In the case of many diseases, it is not so much the microbe that does harm, as the poisons (ptomaines, toxines) which it secretes. Here, then, the therapeutic point of view changes, for we are not wholly concerned with supporting the organism or antiseptically destroying the microbe; a more prominent indication even may be to combat and neutralize the chemical poison which the microbe produces. If the poison is secreted upon an accessible surface, we may be able to evacuate it or precipitate it, and prevent its absorption. If the absorption is already effected, or if the poison has been first fabricated in the recesses of the tissues, we may still be able to reach it and effect its destruction by increasing the combustions of the economy, compel its elimination by the emunctories, or at least combat its physiological effects by the administration of antagonistic remedies.

These considerations are sufficient to indicate the complexity of pathogenic therapeutics when properly understood.

MEDICAL NOTES.

— The *Dominion Dental Journal* has a curious story, of possible medico-legal importance, of a negro who was brought within the clutches of the law mainly in consequence of leaving the traces of his teeth upon an apple while committing a burglary. The marks upon the apple showed that the man's two front teeth were irregular and ill-shapen. The detective who was called upon to investigate the burglary noted the apple and kept it in water to prevent it from shrivelling up. He then proceeded to act upon this, the only clue which had come to his hands. Walking into a store he bought some apples, and, proceeding to eat one himself, he said to a well-dressed negro who had attracted his attention, "Try one." The negro accepted the gift, but when he raised the apple to his mouth for a second bite, the handcuffs were placed upon hi wrists. Stolen property was afterwards found upon him, which belonged to the person into whose house he had broken. The prisoner subsequently explained that, after effecting an entrance into the house on the night of the burglary, the first thing he saw was a barrel of apples; he picked one up, and after two bites laid it down again, where it was a short time later found by the detectives.

— "Night medical lectures" which it appears are given in Dublin, have met the condemnation of various English contemporaries. The *Lancet* says: "We cannot think that such a system is one of true medical education, such as the Medical Council contemplates or could recognize. Four years for the medical curriculum is all too little, and it certainly does not mean that students are to divide their time between commerce and medicine. If such a system were pursued in the United States, it would meet with severe criticism from all medical educationists here. We do not see that it should be treated with more indulgence because it happens to be a Dublin one. There are instances in other schools of men snatching time to go through the form of studying medicine while engaged in business. But it is not found to answer. And where it is done on a scale that amounts to a system, as in Dublin, it needs attention from the medical authorities, both local and central." The *Lancet* is evidently not aware that a similar system *is* pursued, to some extent, at least, in the United States: but its remarks are true, nevertheless.

— The Florida State Board of Health has published rules and regulations adapted for the guidance of county, town, and other officers, as well as for the instruction of individuals. They authorize the destruction of infected property, enforce the house-to-house inspection in cities and towns once a month, compel the adoption of a sewerage system in all the municipalities of 10,000 or more inhabitants, and provide for special monthly reports during May, June, July, August, September, and October. The regulations for quarantine and disinfection along the seaboard are all very strict, but the money at present available is insufficient to maintain the system thoroughly. The board has adopted the following: —

The Board of Health recognizes the necessity for a strict watchfulness over the entire coast during the summer season now so soon at hand, so as to prevent the violation of the rules and regulations establishing quarantine; and realizing its inability for the want of proper means to have such vigilant and efficient coast patrol as seems necessary: therefore be it

Resolved, That the president of this board, through the governor of this State, confer with the authorities at Washington, either with the secretary of the treasury or the secretary of the navy, or with both, for the purpose of securing such coöperation and assistance as it may be in their power to render.

— The fact is reported in the public press that H. M. Flagler has presented Dr. George Shelton, of New York, with securities of the par value of $50,000, market value about $87,000, in consideration of his "faithfulness and skill" in attending the case of Mr. Flagler's daughter, Mrs. Benedict, who died on her husband's yacht off Charleston, after a long illness. This is described as the largest fee but one ever paid to a physician.

What the one is, is not mentioned, but a case is recently reported in the European journals in which a doctor has entered suit against a Hungarian nobleman for $250,000, being one-half the man's fortune. The gentleman's wife was sick and the husband promised to give the doctor one half of his fortune if the wife got well. She did, and the doctor was handsomely paid but claimed the above amount in accordance with the terms of the promise.

— A case of yellow fever is reported from Sanford, Florida. We are prepared to see the report denied, but we have no doubt that Northern people who left Florida so much earlier than usual this year will feel that they left none too soon. With yellow fever at Havana and rapid communication between Havana and Tampa, Florida is likely to be under suspicion.

— We hear that R. H. Robertson is to furnish the plans for the new building of the New York Academy of Medicine. The new structure will be put up on the north side of Forty-third street, 245 feet west of Fifth avenue, and will be six stories high and 75x100. The material will be stone and brick. Among the features will be the library and the assembly room.

— Four deaths from hydrophobia are reported to have occurred in Fall River in the last eight months.

BOSTON.

— The Boston board of examining surgeons for the Pension Bureau has been organized, with Surgeon-General Holt as chairman, and Drs. Samuel L. Dutton and John W. Chase as the remaining members.

Miscellany.

THE LIABILITY OF A TELEGRAPH COMPANY FOR NOT TRANSMITTING A PHYSICIAN'S CALL.

Henry C. Riley, Esq., in the *Medical Bulletin* cites a legal case of interest to physicians and their patients, which has been recently decided in the Texas Court of Appeals, where the Western Union Telegraph Company failed to deliver a message to a physician, asking him to attend a lady in her confinement. The messenger went twice to the office of the physician, but, not finding him, made no further effort to deliver the telegram. In the meantime the lady gave birth to a still-born child, and her husband brought suit against the Telegraph Company for damages.

The court decided that a suit would properly lie for injuries suffered by plaintiff's wife, but that he could not recover for his own anxiety and sympathy. It said: "We do not think the death of the child before birth and the grief or sorrow occasioned thereby can be an element of damages in this character of suit. If it is made to appear from the testimony that Mrs. Cooper suffered more physical pain, mental anxiety, and alarm on account of her own condition than she would have done if Dr. Keating had been in attendance upon her, and the failure to secure his service is shown to be due to the want of proper care on the part of defendant's servants, whose duty it was to deliver the message, a fair and reasonable compensation should be allowed for such increased pain and mental suffering; but the death of the child, the bereavement of the parents, and their grief for its loss cannot be considered as an element of damages. Such damages are too remote. They are the result of a secondary cause, and ought not to be allowed to enter into the verdict. This is not an action under the statute for the death of a child, and if it were, injury to the feelings of the parents could not be a basis of recovery by them.

"Injury to the mother alone, her physical pain and mental suffering because of her own condition, would be a proper consideration; and it would be correct to allow proof that the child was still-born, if such fact tended to show that her labor was thereby prolonged and her suffering so increased."

A good many physicians would be glad to know what is the liability of telephone companies, who through the stupidity or neglect of their employees fail to transmit important messages summoning professional aid.

GOVERNOR OGLESBY ON THE STATE BOARD OF HEALTH OF ILLINOIS.

As has frequently happened, an attempt is again made this year in the lower house of the Illinois General Assembly to slaughter the State Board of Health by withholding the appropriation and even by repealing the act enacting the board. The attacks are made, as is pointed out by the *ChicagoNews*, first, by the quacks, abortionists, and other disreputables who are prevented from plying their nefarious vocations by the board. These are abetted by a certain ignoble class of newspapers, who miss the advertising patronage which would otherwise accrue. Second, by the cheap medical colleges run as mere "diploma mills."

The executive of the State, Governor Oglesby, stands manfully by the board, however. In his last message, delivered January 10, 1889, he accredits the board with an "intelligent and faithful discharge of its duties" by which — while neighboring communities, even less exposed by immigration and geographical position, have suffered from frequent epidemics — Illinois has for many years been free from serious or widespread contagious or infectious disease, "until the State is now one of the healthiest and most favorable to long and vigorous life of any in the Union."

Referring to the unparalleled labors of the board in the small-pox epidemic of 1881–2, the result of which labors and the methods by which it was accomplished have passed into history on both sides the Atlantic as among the greatest triumphs of sanitary administration, Governor Oglesby says that "it is a matter of record" that the work of the board "resulted in a saving of nearly $3,500,000 to the people of the State," and that "through the preventive and protective measures then established and since enforced there has been no repetition of that disease in an epidemic form."

He calls attention also to the fact that during the first six months of the amended act the board refused licenses to itinerant venders of nostrums and quack practitioners, the fees for which licenses would have swelled the treasury of the board by over $20,000.

Finally, he cites, as proof "that the board has been prudent and economical in the expenditure of appropriations subject to its order," the fact that it covered back into the treasury untouched a contingent appropriation of $40,000.

PUERPERAL INSANITY.

In the last eighteen months Hirst met with six cases of puerperal insanity, says the *London Medical Recorder*, an unusual experience for an obstetrician, since, according to Fordyce Barker, this condition only occurs once in four hundred cases of labor. Of these six, four were illegitimately pregnant; two had mania, while four presented a melancholic, apathetic appearance and seemed indifferent to all about them. Three of the women recovered their reason; two were apparently hopelessly insane; and one died from a septicæmia which was associated with, and perhaps caused, the mental state. One case was sudden in its onset, violent in its manifestations, but short in its duration; the woman was told two weeks after confinement that her perineum was ruptured and would probably have to be sewed together. She almost immediately became maniacal and remained so for about three weeks. A correct idea of the most common variety of this affection, of the prognosis, and the best means of treatment cannot be obtained from an obstetrician's practice, which must necessarily be small, but must be sought for in records of such cases presented by competent observers, who, especially if in charge of asylums, have to deal with a large number of them. Studies of more than eight hundred of these cases by Clark, MacLeod, and Wiglesworth have recently been published. From them it appears that the maniacal form of the disease is the most common; that a large majority of the cases recover, usually within six months; that when death occurs it is commonly traceable to sepsis, which is so often associated with puerperal insanity, although a few cases die from maniacal exhaustion; that the best treatment is the Weir Mitchell rest-cure. Heredity plays a most important part in the etiology of the disease; very often the subject is mentally and physically depressed. It seems not very uncommon for the chorea of pregnancy to develop into insanity; this happened in one of the above cases.

CHINESE MEDICINE.

The medical art in China is mysterious and empirical, says a writer in *Chambers's Journal*. The medical profession is regulated by rules almost the opposite of those which prevail in England. In China the doctor receives a fixed salary as long as his patient is in good health. If the patient falls ill the doctor's pay is stopped until a cure is effected.

In England a sick person usually tries to assist the doctor by explaining the symptoms of his case. In China this would be considered an insult to the doctor. The doctor may feel the patient's pulse, examine the skin, and look at his tongue; but he may ask no questions. He is then expected to diagnose the disease from which the sick man is failing and to prescribe a remedy. The medicine prescribed is usually very cheap and very nasty; but some drugs are high-priced, and there are certain precious stones which are believed to be of wonderful efficacy in curing diseases. One of these expensive prescriptions consists of very costly ingredients. White and red coral, rubies or jacinth, pearls, emeralds, musk, with one or two earths in special qualities, are crushed into powder, rolled into pills with gum and rose water, and coated with gold leaf. This unique medicine is reported to be an infallible cure for small-pox, measles, scarlet fever, and all diseases which arise from blood poisoning and break out in cutaneous eruptions. The strengthening properties of the preparation are said to be quite remarkable. The Jesuits, who flourished in China in the early part of the present imperial dynasty, affirm that they have seen men snatched from the last convulsions of death by its judicious use.

PRENATAL BAPTISM.

Probably there are few physicians of much experience in the practice of obstetrics who have not occasionally been asked to baptize an unborn child. As it is not always possible to make out the child's sex at the time of the baptism, it has happened that the name of John or Thomas or some other equally decided masculine appellative has been given to a girl, and in some instances the girl so named has survived. This has led to the device of pronouncing a name that may afterward be written either Francis or Frances, as the exigencies of the case may require. We trust that in the Abbé Moureau's pamphlet on "The Administration of Baptism, for the Use of Physicians and Accoucheurs," mentioned by our Paris correspondent, there may be found set forth some way savoring less of quibbling than this clumsy refuge. The Abbé's sanction of baptism as a preliminary to craniotomy is remarkable, for it might be interpreted as sanctioning craniotomy itself, whereas the Church of Rome has heretofore set itself steadfastly against that operation, and its teaching has doubtless had a material influence in bringing about such life-saving devices as the improved Cæsarean section, laparo-elytrotomy, and Porro's operation. — *N. Y. Medical Journal.*

THE OPERATING-ROOM AT THE HOTEL DIEU, IN LYONS.

The *Lancet*, March 23, contains a description of the new operating-room at the Hôtel Dieu, in Lyons, which has recently been opened for use, and which would appear from a lecture delivered by Prof. A. Poncet, who has charge of the teaching in operative surgery, to be one of the most completely aseptic operating-rooms to be found. M. Poncet has had it constructed according to designs of his own, elaborated after a visit to many of the hospitals in England, France, Germany, Austria, and Switzerland.

The two objects he set before himself were the prevention of infection by means of air or through contact. It is about thirty feet in length by twenty feet in breadth, the height being about twenty-four feet. As its situation beneath the wards rendered a skylight impossible, the light is admitted by one immense window, the eight panes of which are made to open. Artificial light, when required, is obtained from a Wenham gas lamp, which can be lowered to within about seven feet of the ground. The walls are covered to the height of five feet with glass, forming a dado; above that with perfectly smooth stucco of a rose-gray tint. All the angles are rounded. To the walls are fixed nickelled brackets supporting shelves of plate glass, which, however, do not come within half an inch of the wall; on these shelves stand vessels containing antiseptic solutions, and ingeniously constructed metal receptacles for dressings. The ceiling is in the form of a dome, and the floor, which is of cement, slopes slightly to an aperture in the centre leading to a carefully constructed drain. The surface is channelled, and is washed down daily, also once a week with carbolized water.

The few chairs and benches are made of bronzed iron; the tables are made with glass tops and metal frames, and are provided with casters. The operating table is entirely free from the complicated mechanism frequently seen, and the top, which is of glass, is, like the floor, made to slope toward the centre, where there is an aperture communicating with a drainage-tube. The mattress is covered with mackintosh, and is perforated so as to allow of drainage. When the patient requires to be propped up, pillows and cushions covered with mackintosh are used, to the entire exclusion of mechanism. Ingenious arrangements are made for the reception of the anæsthetist's and the surgeon's appliances, and a second table is provided for operations requiring the operator to stand between the patient's thighs.

The instruments, whose handles are specially made with a view to prevent any difficulty in cleaning, are all washed in glycerine at the temperature of 120° C., and then kept in carbolic solution.

A RUSSIAN VIEW OF TIGHT-LACING.

The British Medical Journal reprints from *Vratch* some experiments of Dr. Boris I Kianovsky which he recently carried out in Professor V. A. Manassein's *clinique* with the view of ascertaining the influence of tight-lacing on the vital capacity, the movements of the thorax, the energy of inspiration and expiration, arterial tension, pulse, or respiration. The experiments were made on thirty female patients between 18 and 44 years of age, of whom twenty-eight were more or less inveterate tight-lacers (eight of them since their eleventh and twelfth year). The following is a summary of his results: — 1. The corset lessens respiratory movement of the thorax, and diminishes the vital capacity as well as the force of the inspirations and expirations, the inspiratory movements being particularly affected. 2. The thorax being compressed and the amount of the inspired air being diminished, the corset necessarily gives rise to chronic "oxygen starvation," which is one of the essential causes of dyspnœa and cardiac palpitation on brisk walking (fatigue been soon felt on physical or mental exertion), loss of appetite, faintness, and other kindred symptoms, such as are usually associated with tight-lacing. 3. The arterial tension falls on putting on a tight corset, and in habitual tight-lacers it is generally below the normal standard ("in consequence of arterial anæmia"). 4. The effect of stays on the frequency of the pulse and respiration is well shown by the following experiments. The women were made to run a distance of 980 feet with moderate swiftness without corsets and light-laced, all other conditions been identical. After a run without corset the pulse was found to be 136, 140, and 156, and the respiration 32 per minute. In the same women tight-laced the pulse was found to be 144, 160, 176, and the respiration 48, 60, 64 per minute. Among thirty-eight wearers of stays, movable kidney was present in eight, habitual constipation or gastro-intestinal catarrh in fourteen, disease of the apex of the lung in six, anæmia in five, hysteria in five. Dr. Kïanovsky gives a fairly exhaustive review of the work done on the same subject by Lesshaft, Hyrtl, Bouchut, Meyer, Hacker, Rotter, V. A. Manasseïn, Marchand, W. J. Collins, Arini, Graily Hewitt, Heyers, Helene Betts, Neftel, Scheiber, Mays, and others, and winds up his paper with the following words: "I cannot help stating, in conclusion, that I look back both at the work of my predecessors and my own humble contribution with nothing but a sense of bitter and painful regret, for I am conscious that all those labors directed to prove the deplorable effects of tight-lacing will yet remain unnoticed or neglected by women for a very long time."

REPORTED MORTALITY FOR THE WEEK ENDING APRIL 13, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diph. and Croup.	Scarlet Fever.	Measles
New York	1,571,558	861	387	23.04	19.56	9.12	6.36	2.28
Philadelphia	1,040,245	420	141	11.04	10.80	3.84	1.20	—
Chicago	830,000	280	128	18.36	9.72	7.56	2.68	2.52
Brooklyn	814,505	384	178	19.24	22.36	9.10	3.38	3.64
Baltimore	500,343	157	61	8.96	—	3.20	1.92	—
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	248	73	5.60	18.00	1.20	—	.80
New Orleans	250,000	103	22	8.73	24.25	.97	.97	—
Cincinnati	225,000	120	—	17.43	9.96	9.96	2.49	.83
Washington	225,000	104	39	11.50	21.12	.96	—	—
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	16	2	6.25	25.00	—	—	—
Charleston	60,145	38	10	5.26	5.26	—	—	—
Portland	40,000	23	5	—	17.40	—	—	—
Worcester	78,292	25	10	—	24.00	—	—	—
Lowell	71,518	30	9	10.00	20.00	—	—	—
Cambridge	65,552	33	19	9.09	9.09	6.06	—	—
Fall River	62,647	33	13	18.18	21.21	—	—	6.06
Lynn	53,334	22	—	9.10	4.55	4.55	—	—
Springfield	40,731	14	3	35.70	21.42	21.42	—	—
Lawrence	40,619	13	1	15.38	23.07	—	—	—
New Bedford	37,253	21	6	14.31	9.52	—	—	4.76
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	7	3	28.56	14.28	—	—	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	10	3	—	10.00	—	—	—
Haverhill	26,058	6	1	16.66	—	—	—	—
Taunton	25,170	9	3	33.33	—	33.33	—	—
Gloucester	24,263	5	2	20.00	20.00	—	—	—
Newton	21,553	3	2	33.33	—	33.33	—	—
Malden	19,774	7	2	—	14.28	—	—	—
Fitchburg	17,534	6	1	—	—	—	—	—
Waltham	17,332	4	—	—	—	—	—	—
Newburyport	13,875	5	—	—	20.00	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	2	—	—	—	—	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 3009; under five years of age 1214; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 480, acute lung diseases 471, consumption 411, diphtheria and croup 182, scarlet fever 88, measles 48, whooping-cough 39, diarrhœal diseases 36, typhoid fever 35, cerebro-spinal meningitis 14, erysipelas 14, malarial fever 14, puerperal fever 10. From whooping-cough, New York 21, Washington 4, Philadelphia, Brooklyn, and Boston 3 each, Chicago, Baltimore, Cambridge, Lynn, and Gloucester 1 each. From diarrhœal diseases, New York 13, Philadelphia 6, Chicago 4, Brooklyn and New Orleans 3 each, Lawrence and Salem 2 each, Baltimore, Boston, and Lowell 1 each. From typhoid fever, Philadelphia 11, New York and Cincinnati 5 each, Chicago 3, Boston, Washington, Charleston, and Springfield 1 each. From cerebro-spinal meningitis, Washington 5, Chicago 4, New York 2, Philadelphia, Baltimore, and Boston 1 each. From erysipelas, New York 5, Philadelphia 3, Brooklyn and Boston 2 each, Chicago and Baltimore 1 each. From malarial fevers Brooklyn and New Orleans 4 each, New York 3, Baltimore 2, Philadelphia, 1. From puerperal fever, New York 7, Chicago Lowell 1.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending April 6th the death-rate was 20.3. Deaths reported 3712; infants under one year of age 903. Acute diseases of the respiratory organs (London) 364, measles 175, whooping-cough 125, scarlet fever 48, diarrhœa 48, diphtheria 47, fever 21.

The death-rates ranged from 30.6 in Blackburn to 12.9 in Brighton; Birmingham 21.5; Birkenhead 17.8; Hull 18.1; Leeds 23.9; Leicester 17.3; Liverpool 19.9; London 18.8; Manchester 27.8; Norwich 19.3; Sheffield 25.0; Sunderland 18.3.

In Edinburgh 17.8; Glasgow 28.9; Dublin 25.7.

The meteorological record for the week ending April 13, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Apr. 13, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
Apr. 7	30.44	38.0	42.0	32 0	86	92		89.0	N. E.	N. E.		11	16		O.	C.			.00
" 8	30.15	42.0	46.0	32.0	76	85		80.0	N. E.	N.		23	12		F.	O.			.00
" 9	29.84	47.0	52.0	39.0	36	35		36.0	N.	S. E.		12	3		O.	C.			.00
" 10	29.88	48.0	56.0	42 0	45	30		38.0	N. W.	N. W.		24	6		C.	C.			.00
" 11	29.93	51.0	68.0	37.0	41	45		43.0	W.	S. W.		6	16		C.	C.			.00
" 12	29.60	58.0	65.0	50.0	80	81		80.0	W.	N. W.		8	8		F.	R.		5 00	.04
" 13	29.77	42.0	54.0	40.0	60	46		58.0	N. W.	N. W.		10	15		O.	C.		16.10	.15
Means for the Week	29.95		55.0	39.0				60.0										21.10	.19

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM APRIL 13, 1889, TO APRIL 19, 1889.

WILLIAMS, Major JOHN W., Surgeon, U. S. Army, died at Jackson Barracks, La., April 15, at 5.06 P.M.

HAPPERSETT, Major JOHN C. G., Surgeon, U. S. Army, is relieved from duty at Willets Point, New York, and ordered to report to the commanding officer, Atlanta Barracks, Ga., for duty as Post Surgeon at that post. By Par. 12, S. O. 88, A. G. O., April 16, 1889.

WOODRUFF, First Lieutenant CHARLES E., Assistant Surgeon, U. S. Army, is relieved from duty at Fort Mackinac, Mich., and ordered to Fort Gaston, Cal., for duty. Par. 14, S. O. 86, A. G. O., April 13, 1889.

Leave of absence granted in S. O. 44, February 21, 1889, A. G. O., to Lieutenant-Colonel JAMES C. MCKEE is extended seven days. Par. 4, S. O. 86, A. G. O., April 13, 1889.

POLHEMUS, Captain ADRIAN S., Assistant Surgeon, U. S. Army, is relieved from duty at Fort Gaston, Cal., ordered to Fort Monroe, Va., for duty. Par. 14, S. O. 86, A. G. O., April 13, 1889.

EWEN, Major CLARENCE, Surgeon, U. S. Army, promoted Surgeon U. S. Army, with rank of Major, to take effect April 15, 1889.

APPEL, Captain AARON H., Assistant Surgeon, U. S. Army, is granted leave of absence for twenty-one days. Par. 1, S. O. 38, Headquarters Division of the Missouri, April 16, 1889.

Headquarters Department of Dakota, St. Paul, Minn., April 8, 1889. Special Orders No. 35. Under authority from the Secretary of War conveyed by letter of the 16th ultimo from Division Headquarters, the post of Fort Sisseton, Dak., will be discontinued June 1st, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 20, 1889.

BYRNES, JAMES C., Passed Assistant Surgeon, detached from special duty at Norfolk, Va., and to the "Chicago."

HEFFENGER, A. C., Passed Assistant Surgeon, granted leave of absence for six months with permission to leave the United States.

LEACH, PHILIP, Passed Assistant Surgeon, leave of absence extended six months with permission to remain abroad.

LOWNDES, C. H. T., Assistant Surgeon, ordered to Naval Academy, Annapolis, Md.

MCCORMICK, A. M. D., Assistant Surgeon, detached from the "Vermont" and ordered to the "Chicago."

SOCIETY NOTICE.

ANNUAL MEETING OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION. — The American Climatological Association, Dr. V. Y. Bowditch, President, will hold its annual meeting in Boston, June 24th and 25th, 1889. A series of valuable papers have already been secured, giving promise of an interesting meeting

J. B. WALKER, *Secretary*.

CORRECTIONS.

The signature to the lines headed "The New Title," in the last issue of the JOURNAL should have been C. F. C instead of C. V. G

Mr. Editor, — In the last number of the JOURNAL, on page 391, I am reported as saying, "I have twice wounded the bladder during an ovariotomy and each time sewed it up with silk without any special pains, except to *enclose* the mucous coat." What I said was that "I took special pains *not to include* the mucous coat." A surgeon always takes pains not to include the mucous coat of the bladder in a suture, for a stitch through the mucous coat is likely to be followed by non-union and a fistula or a fatal result.

Yours very truly,
JOHN HOMANS

OBITUARY.

H. J. HARRIMAN, M.D.

Dr. H. J. Harriman, of Revere, died at East Peacham, Vt., April 14th, after a long illness. He was born in Peacham in 1858 and prepared for college at St. Johnsbury.

In 1875 he entered Dartmouth and graduated in the class of '79, taking high rank as a scholar. The following year he studied medicine in the office of Dr. G. B. Bullard of St. Johnsbury, and then entered Dartmouth Medical College and graduated with the valedictory. After a brief post graduate course in New York he accepted a position as assistant out-physician in the Concord Insane Asylum. After several months' service at this institution he resigned and settled in Revere, Mass., where he acquired a good practice. He was a member of the Massachusetts Medical Society and at one time secretary of the Boston Gynæcological Society and contributed several papers to medical literature.

He had held the position of surgeon to the Soldier's Home in Chelsea since 1885, and was a member of the School Board of Revere until obliged to resign on account of ill health

He was much esteemed by his instructors, and universally beloved by his associates. His education and ability marked him as a man of unusual promise in the profession. He leaves a widow

SAMUEL W. GROSS, M.D.

Dr. Samuel W. Gross, one of the most eminent practitioners of Philadelphia, died April 16, aged fifty-two years. He was a son of the late Professor Samuel D. Gross, and succeeded his father in the chair of surgery in Jefferson College. Dr. Gross was the author of valuable contributions to the medical periodicals of the time, and published in 1880 a book entitled "A Practical Treatise on Tumors of the Mammary Gland." He studied medicine at the University of Louisville, Ky., and completed his education at the Jefferson Medical College. He was a member of the College of Physicians, of the Pathological Society, and of various medical societies. He has written numerous papers on clinical surgery. He was formerly a surgeon to the Howard Hospital and to the Philadelphia Hospital, and later was a surgeon and a lecturer on surgery in the Jefferson Medical College. He was surgeon and major of the United States Volunteers during the entire Civil War, and at its termination was breveted lieutenant-colonel.

DEATHS

Died in Sheffield, Mass., April 16, 1889, John Leland Miller, M.D., M.M.S.S., aged seventy-seven years.

Died in Peachham, Vt., April 14, 1889, Herbert James Harriman, M.D., M.M.S.S., of Revere, Mass., aged thirty-one years

BOOKS AND PAMPHLETS RECEIVED.

Physiological notes on Primary Education and the Study of Language. By Mary Putnam Jacobi, M.D., New York: G. P. Putnam's Sons. 1889.

What is the Normal Posture for a Parturient Woman? Read before the Washington Obstetrical and Gynecological Society, January 4, 1889. By A. F. A. King, M.D., Prof. of Obstet., etc., in the Med. Dept. of the Columbian University, Washington, D. C., and in the University of Vermont; Member of the Amer. Gynecol. Soc.; of the British Gynec. Soc., of the Wash. Obstet. and Gynec. Soc.; and of the Medical, Philosophical, Anthropological, and Biological Societies of Washington, D. C., etc. Reprinted from the American Journal of Obstetrics and Diseases of Women and Children, Vol. xxii., 4, 1889. New York: 1889.

Original Articles.

SOME USES OF THE VAGINAL TAMPON IN OBSTETRIC ART.[1]

BY J. S. GREENE, M.D., DORCHESTER, MASS.

Some uses of the vaginal tampon have once and again been brought to the notice of medical societies by men eminent in gynæcology; and the members of the profession, in Boston at least, are well taught as to the value of the tampon in that department of medical practice.

I have never yet heard it suggested that the tampon might be useful as an appliance in obstetric art; and I am not aware that such use of it has been either advocated or tried.

As regards the leaders and teachers in these two great branches of practice,—the gynæcological and the obstetric, closely allied as they are, — there would be nothing strange in such a fact, if fact it be.

The man eminent in the former has nothing to do with practice in the latter; and the professor of the one would not be likely to seek new expedients in the domain of the other.

It may be quite otherwise with those who are of the rank and file of the profession. The general practitioner, who, while he thankfully receives, and in his restricted range, applies, the latest teaching of the gynæcologist, is at the same time working upon corresponding problems in the branch of obstetrics; and if there be analogies of practical value he is likely to perceive them.

He has noted the soothing and moderating influence of the vaginal tampon upon dysmenorrhœa and menorrhagia, and he wonders why the same agent should not be of service to prevent the flow which indicates the approach of, and to soothe the irritation which induces, the wonted early abortion; — or why, again, it should not be influential to control the persistence, or prevent the recurrence, of that unusual accident, secondary hæmorrhage after delivery.

He has marked the relief imparted by the vaginal tampon to reflex nervous disorders in cases of pelvic irritation, and he asks himself why the valued hot vaginal douche should not have its ally or alternative in the tampon in cases of excessive vomiting or of reflex nervous exhaustion in early pregnancy. He has seen engorged and enervated uteri gain in functional activity at the same time that they shrank in volume under the influence of the tampon, and he infers that the post-partum uterus, if hindered in involution, may be aided by the same agent or method to complete the nutritive changes so needful to future health.

Inferences such as these are so natural that I am unwilling to claim originality for their application in practice; and I offer the following remarks and illustrative cases with the hope of eliciting the account of like experiences from others.

The tampon as I have applied it for purposes here cited has generally consisted of the flattened disks of absorbent cotton moistened with glycerine such as are used in gynæcology. The patient lies on her left side and these pieces, held in the grasp of long, slender forceps, are successively introduced by the right hand, and are guided to their place and adjustment by one or two fingers of the left hand in the vagina. When placed, these pieces form a layer upon the posterior vaginal wall from the cul-de-sac to the verge of the outlet, where they are sustained and secured by a larger piece on either side of the urethra behind the os pubis. No strong pressure is applied in packing, the guiding finger is preferred to the speculum, no undue distention of the vagina is produced, and the packing is no firmer than is thought to be needful to prevent it from being easily forced out.

The degree of firmness required for this purpose is sufficient to impart considerable support to the uterus and at the same time is comfortable to the wearer. The tampon as thus used has no correspondence except in name with that packing of the vagina in use to control hæmorrhage during abortion. With or without good reason the latter proceeding has the reputation of promoting the evacuation of the uterus by stimulating uterine contraction; but it does this, if at all, by imprisoning the flow, distending the vagina, and pressing downward the perinæum.

On the other hand the effect of the tampon as I now advocate it is to increase the secretions, while not hindering their exit, to allay irritation, relieve engorgement, and impart just that degree of support without distention which promotes, rather than opposes, comfort.

When hæmorrhage appears in the course of pregnancy I find the tampon, thus applied, a valuable resource for arresting instead of advancing a threatened abortion.

Rest in bed, aided perhaps by an opiate, or perhaps by hot douching, will often suffice to avert the mischief: but what if the patient does not see the necessity of these precautions, and insists on going about?

A young woman half-through the period of her first pregnancy came to my office, having had flow enough to continue occasional change of napkins for a fortnight. The cervix uteri was flaccid and widely patulous up to the internal os, and the cervix and vagina were catarrhal. She also had reflex symptoms, especially vomiting. I painted the cervix inside and out and the roof of the vagina with a strong solution of iodine, and put in a vaginal tampon firm enough to contribute some support to the uterus. A few days later these proceedings were repeated at my office. Entire relief of all the symptoms, both local and reflex, followed this treatment: and the patient kept safe and sound to the end of gestation.

During the night of August 30, 1887, I was called to care for a young woman with a sharp attack of secondary hæmorrhage after confinement. She had been comfortably delivered of her third child eleven days previously. She was tall, rather spare, inclined to anæmia, and had been overworked. I could recognize no exciting cause. Delivery and subsequent care had been conducted antiseptically, and I was confident that the placenta and membranes had been wholly expelled. This attack ceased, and if any lochial discharge continued it was without odor.

She was given ergot and quinine and douched with hot water. A week later another hæmorrhage occurred. I then resorted to the vaginal tampon, renewing it twice in the ten days next following. The patient had no further trouble.

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[1] Read by invitation before the Obstetrical Society of Boston, February 9, 1889.

I cannot assert that in either of these cases the same favorable course would not have been exhibited if no tampon had been used. I only mention them as experiences which strengthened in my own mind the good opinion I had formed *a priori* of the tampon as an available resource in obstetric practice, and as illustrations of certain conditions wherein its use seemed suggested by analogies derived from gynæcological procedure.

The next case has a longer history: —

Mrs. Z. was rather delicate of health from childhood. At the age of fourteen had severe uterine hæmorrhage following a fall; and after that had always profuse menstruation with much pain. In January, 1882, she had pelvic cellulitis (as stated by the physician who attended her), accompanied by non-purulent cystitis. After recovery did not fully regain her former measure of strength. In autumn of same year married, being then twenty-four years of age. In May, 1883, and three times afterwards, before I knew her, had severe illness with profuse flowing; and she is positive that these occasions were all accidental abortions at the second or third months of pregnancy, following some decided exertion.

In November, 1885, she came under my care as a weak, nervous invalid, incapable of exertion, and suffering dysmenorrhœa and menorrhagia.

Dark hair and eyes, pale skin, medium height, and not ill-nourished.

The ostium vaginæ was rather unyielding, vagina small, uterus anteflexed and large as from subinvolution.

Anæsthesia was not resorted to, and without that it was not possible to determine what degree, if any, of thickening of the broad ligaments existed; but the region on either side of the uterus was tender to pressure. The presence of salpingitis from infection was considered possible, but was not determined.

During seven months of treatment the patient steadily improved in health and strength; and in November, 1886, being in the third month of pregnancy, she suffered, greatly to her disappointment, her fifth abortion. Being under other professional care in the city on this occasion, her guidance was deficient in respect to her special needs: and the first third of 1887 was devoted to renewed treatment like that of the corresponding period of the year preceding.

The patient was extremely anxious for offspring. The packing of the vagina with the glycerine tampon had been in use as a prominent feature of her treatment during the week preceding each menstrual period, with marked relief and benefit. I proposed that in case signs of pregnancy should again appear, the tampon should be again resorted to.

Accordingly on the 12th of October, as early as the condition of pregnancy was recognized, a series of vaginal packings with the glycerine tampon was begun and continued until the 26th of November, a period of between six and seven weeks. This brought her into the fourth month, and well past the heretofore critical period. She was cautioned to be especially quiet thenceforward as each monthly cycle should culminate; and to take absolute rest, and notify me if the slightest sign of danger should appear. She safely reached the term of her pregnancy, and the 15th of May, 1888, gave birth to a full-grown, healthy female infant, not without instrumental aid.

Forceps were used to assist weak and wholly inefficient pains as soon as the os was sufficiently dilated. The bladder was emptied, thorough antisepsis was practised from beginning to end, and no tear of cervix or perinæum occurred.

The total duration of labor was seventeen hours. Deficiency of functional energy was indicated from first to last in this case. It was as if nature sulked at being helped to do when she had decided not to do.

There was not the slightest sign of lacteal secretion; and the bladder was inert and got over-distended. Then directly there came a purulent cystitis which persisted for weeks and months in spite of medicines, rest, and washes through catheter. I have wished to connect this cystitis with the old trouble in a broad ligament; and have asked myself if it were not reasonable to infer a metastatic transfer if not a direct escape of pus to the bladder from a point in the pelvic tissues where inflammation may have long lurked and been imprisoned.

However this might be, I determined to leave nothing undone which might lie in my power to bring this lady to the end of her pelvic miseries. She was weak and anæmic, and, as I have said, had exhibited inactivity of parturient and post-parturient function to a marked degree.

I feared subinvolution from the combined influence of this condition and the cystic inflammation.

Having, as I supposed, aided her by the vaginal tampon, first to attain a condition compatible with and favorable to gestation, next to maintain and carry to completion a pregnancy which would otherwise have proved abortive, I thought I might also hope by the aid of the tampon to enable her to gain finally even though tardily the full measure of benefit to health to which a successfully completed gestation should reasonably entitle her. June 28th, six weeks after confinement, I substituted for treatment by hot vaginal douches which had been in use, the vaginal tampon, and at once encouraged moderate exercise both driving and walking. After two applications the catamenia appeared July 7th naturally and without suffering. The tampon was resumed the 14th and continued until the 4th of August when the catamenia again appeared in regular course. For two months more a single tamponing was practised five days before menstruation was due, and removed at the appearance of the flow. During all this time the patient, under the use of iron and regular out-door exercise in moderation, with treatment of the bladder, was gradually gaining strength, and slowly lessening the quantity of pus in the urine.

There was still some pus in October last when I ceased attendance, and when I approved the discontinuance of the washing out of the bladder.

This patient's home is in another town, some miles distant from mine, and this is extracted from a letter under date of February 3rd, written by her in reply to one of inquiry: —

"I am feeling in most ways better than I have been since I was a girl. At the menstrual period there is little or no pain, and I have never before noticed that occasion so little. There is none of that old sense of weight in the uterine region, and I walk with wonderful ease. I have some slight feeling of discomfort in the region of the ovaries when I get tired, not a pain exactly, but more a tired, nervous feeling. That, and a slight unpleasantness in the region of the bladder, are all, and those I count very little. I can say without exception that I feel 'none of the old forms of menstrual or pelvic disorder.' There has been no special sediment in the urine for some time. It is virtually gone."

There are some women who, with high endowment of intellectual and moral qualities, and admirable mental balance, are of delicate, nervous organization, and deficient in physical vigor. At the same they may be free from any vice of constitution or tendency to disease.

Such women in child-bearing often have a far heavier burden of misery than their less sensitive sisters, and may need the best resources of professional skill and judgment to maintain them at a tolerable poise through the physical and physiological changes that approaching maternity imposes. Always greatly dependent on good alimentation and open-air exercise, especially do they need it at such crises; yet such is the reflex effect on the brain and nerve power, on the digestion and nutrition, of the augmenting uterus in the pelvis that prostration is sometimes threatened.

For many years I have highly valued the hot vaginal douche in cases of this kind. I have never found any good from medicines, and I do not believe in stretching the cervix uteri.

From recent experiences I have come to the belief that the vaginal tampon as an alternative or substitute for the douche, is an invaluable resource. Its combined depleting and supporting influence at once removes reflex irritability, enabling the stomach to do its full duty, and permits walking and other forms of exercise with the minimum of fatigue, thus securing the two great essentials of good nutrition.

I recall the case of a lady of the type above indicated, whom I have attended through the troubles incident to four pregnancies, the last one about five years ago. Notwithstanding every effect to maintain her in a state of tolerable efficiency her nerve power was held in almost complete abeyance. The whole period of her last pregnancy had practically to be passed in bed, secluded from noise, light, society. Household administration given over to a housekeeper, deprived of the companionship of books, of husband and children, life for nine long months was so dreary and desolate as to amount to keenest torture. Yet the smallest indulgence in any of these forbidden pleasures was visited with penalties of distressing headache, insomnia, and vomiting. I think it possible, even probable, that had I then known this use of the vaginal tampon, and applied it through the early weeks when the uterus was beginning to weigh her down, she might have been kept on her feet, and amenable to the strength-giving influences of sunlight, air, and exercise.

The last case which I shall present as illustrative of the obstetric uses of the tampon is a typical instance of the class of patients above denoted.

Mrs. Y. is of light blonde complexion, twenty-two years of age. Six years ago she relinquished systematic study for want of strength, and was for some months under my guidance for neurasthenia. She improved but continued easily susceptible of fatigue; married in October 1886.

Went to Europe and returned in October, 1887, with symptoms of pregnancy.

Nausea and vomiting became troublesome, headaches followed, and the shadow of impending prostration darkened the background of the prospect. Vaginal douches were used and one or two medicines tried before October ended; but no advantage was gained. The vaginal tampon was resorted to November 1st, in the eighth week of pregnancy, and its good effect was immediately manifest.

She resumed her daily walks, retained her food, improved in appetite, and slept better. The tampon was renewed at intervals of five to seven days for nearly five weeks. When discontinued it was with the purpose of resuming its use if any retrograde tendency should be noted; but the advantage gained proved a lasting one. She had entered upon the fourth month of her pregnancy, and taught by much experience of weakness to be prudent and to carefully follow a prescribed policy, she passed safely, and on the whole comfortably, through the subsequent months of gestation.

Although not directly pertinent to the subject, I may briefly record the sequel.

Labor pains began about midday the 16th of June, 1888, and continued moderately for the next thirty hours. I was in telephone communication at a distance of eleven miles.

I saw her in the evening of the 17th. The os uteri was but little dilated. Gave morphia and chloral in full dose and secured for patient a night's rest, mostly sleep, with refreshment of her powers, and considerable progress in the first stage. At noon the 18th the first stage was fairly completed; the patient's physical and moral condition good. Two hours later, being dissatisfied with the rate of progress, pains being rather infrequent and inefficient, I applied forceps, assisting the uterine contractions, indulging the patient with ether inhalation at the climax of each pain.

Delivery was safely accomplished without laceration at the end of forty minutes from the time the forceps were first introduced. The offspring was male, weighing ten pounds. Lactation was duly established, and convalescence was wholly satisfactory.

A SERIES OF TWO HUNDRED CONSECUTIVE CASES OF MIDWIFERY, IN PRIVATE PRACTICE,

January 20, 1884, to October 25, 1887.[1]

BY ALFRED WORCESTER, M.D., WALTHAM.

In studying my records of these two hundred cases it is noticeable that less than one-half can be classed as normal as regards both the labor and the convalescence. Instead of discussing these ninety-six normal cases separately, I have used them only in making up the following lists of the average ages, and of the numbers of the pregnancies; of the duration of the different stages of labor; and of the positions of the fœtus.

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[1] Read by invitation before the Obstetrical Society of Boston, February 9, 1889.

Seventy-three, or 36½ per cent., were i-paræ, whose average age was 25½ years; 47, or 23½ per cent., were ii-paræ, average age 26; 31, or 15½ per cent., were iii-paræ, average age 31; 12, or 6 per cent., were iv-paræ, average age 28; 13, or 6½ per cent., were v-paræ, average age 32¼; 7, or 3½ per cent., were vi-paræ, average age 35; 3, or 1½ per cent., were vii-paræ, average age 34; 1 or ½ per cent., were viii-paræ, average age 38; 3 or 1½ per cent., were ix-paræ, average age 39; 2, or 1 per cent., were x-paræ, average age 39½; 1 or ½ per cent., were xi-paræ, average age 35; 2 or 1 per cent., were xii-paræ, average age 39½; 2 or 1 per cent., were xiii-paræ, average age 38½; 1 or ½ per cent., xiv-paræ, age 47; 2 were not noted.

The average duration of the first stage in 54 i-paræ was 14 hrs. 21 min., the longest being 60 hrs., the shortest 1½ hrs.; the average in the second stage was 2 hrs. 15 min., the longest being 8 hrs., the shortest 15 min.

In 31 ii-paræ the average duration of first stage was 7¾ hrs., longest 18 hrs., shortest 2 hrs.; second stage (33 cases) average 1 hr. 21 min., longest 4 hrs. 40 min., shortest 10 min.

In 14 iii-paræ average duration of first stage 6 hrs. 54 min., longest 13 hrs. 45 min., shortest 2 hrs. 15 min.; second stage (17 cases) average 1 hr. 1 min., longest 2 hrs. 15 min., shortest 25 min.

In 6 iv-paræ average duration of first stage 4 hrs. 15 min., longest 8 hrs., shortest 2 hrs.; second stage (7 cases) average 1 hr. 57 min., longest 8 hrs. 20 min., shortest 30 min.

In 8 v-paræ average duration of first stage 6 hrs. 52 min., longest 18 hrs. 30 min., shortest 1 hr. 30 min.; second stage, average 1 hr., longest 2 hrs. 30 min., shortest 30 min. In women who had borne more than five children the average duration of the first stage in 10 cases was 7 hrs. 45 min., longest 11 hrs. 30 min., shortest 2 hrs. 30 min.; second stage (13 cases) average 43 min., longest 2 hrs., shortest 15 min.

Of 123 cases the average duration of the third stage was 14½ min., the longest 1 hr.

As regards the position of the fœtus, out of 152 cases where noted, O.A. occurred 2 times, or 1⅛ per cent.; O.L.A. 112 times, or 71 per cent.; O.R.A. 14 times, or 9 per cent.; O.R.P. 19 times, or 12½ per cent.; O.L.P. 3 times, or 2 per cent.; S.L.A. 1 time, or three-fifths per cent., hand presenting 1 time, or three-fifths per cent.

Thus in 128 cases the occiput was anterior, or 84 per cent. In 22 cases, or 14½ per cent., it was posterior.

In the series are included eighteen cases where the child was born before my arrival: in seven of these cases I delivered the placenta. The details show that post-partum hæmorrhage occurred in 22 per cent., and laceration of the perinæum in 39 per cent., of these unattended cases. It is gratifying to find that the percentages of these accidents in cases where I was in attendance is not so high by a half, and that even in the cases of operative interference the percentages are only slightly higher.

Twenty-nine of the two hundred pregnancies terminated before full term. Fifteen of these were abortions proper, occurring in the third and fourth months. At least three were induced by abortionists, and came under my care after the work was partially accomplished. I have no reason to think that the others were not accidental. Not one of these fifteen cases was left to nature; in one I merely withdrew from the vagina the fœtal mass entire, and in another simply the placenta. In two of the cases the operation was merely scooping out of the cervix the entire fœtal mass, and in another, only the placenta. In the remaining ten cases the uterus was thoroughly relieved of all fœtal remains by scraping with the finger, and once with the blunt curette. In three of the ten the fœtus had previously been delivered: in seven, manual dilatation was done. The patients all made good recoveries. In every case, when satisfied that an abortion was inevitable, I made sure that the uterus was thoroughly emptied before I left the patient.

Of the six miscarriages, in two both the fœtus and the placenta were delivered naturally. Both patients lost considerable blood. In three the fœtus had been delivered before my arrival, but the placenta had to be scraped out. In the remaining case both fœtus and placenta were extracted piecemeal after manual dilatation. In no one of these four cases of assisted miscarriages was there any hæmorrhage during or after the operation. All made good recoveries.

There were eight cases of premature labor. No one of the children survived: no mother failed of entire recovery. In two of the cases labor was induced on account of the mother's desperate sickness. These cases will be spoken of later.

Forceps were employed in thirty-one cases. In two cases the fœtus had been dead at least for some days. In the remaining twenty-nine cases the babies lived, although four were resuscitated with difficulty. The mothers made good recovery. Fourteen suffered more or less laceration of the perinæum, and four had post-partum hæmorrhage.

In three of the cases I was called in consultation purposely to operate. It may be noticed that twenty of the thirty-one women delivered with forceps were primiparæ, whose average age was above twenty-seven, which is three years more than the average age of the primiparæ naturally delivered. Of the four secundiparæ two had been delivered previously by forceps, and one had miscarried in her first pregnancy. In only eight cases had nature demonstrated her ability to deliver.

In eighteen cases the instruments were applied to the head above the brim of the pelvis, but in only five of these cases did the delivery require great force; in the thirteen cases of low forceps, only one proved to be a hard delivery.

Undoubtedly in several of these latter cases delivery would have taken place naturally if left alone. It is here that the criticism of meddlesome midwifery may with more or less justice be made. Leaving out of the argument for my defence the reasons for interfering, it may be pointed out that of the twelve cases of easy delivery with low forceps there resulted a laceration of the perinæum in three cases and a

31 Cases of Forceps Delivery

No.	-ipara	Age	Duration 1st Stage	2nd Stage	Labor	Position	Reasons for operating	Character of operation		Anaesthetic	Weight child	Condition of child	Perineum	Post Part. Haemorrhage	
1	I	27	8	2.30	10.30	O.R.P.	No expulsive pains	Easy	High	Ether	8		Uninjured		Rotated manually
2	I	35	17	2	19	O.L.A.	No expulsive pains	Hard	High	Ether	6	Cord tightly around neck	torn through sphincter	Free haemorrhage	Patient delivered by Dr. McCormack my forceps failing.
3	III	40	7	1.30 1.45	8.30 8.45	O.R.P. O.L.A.	Could not flex because of 2d head	Easy Easy	High High		5 5		Uninjured		Twins Two placentas.
4	I	27	13.30	2.30	16	O.L.A.	No progress 1.30	Easy	Low	Ether	8		Lacerated nearly to sphincter.		
5	I	28	48	4.30	52.30	O.L.A	No progress	Easy	High		10		Lacerated half way		
6	II	25	4	4.40	8.40	O.R.P	Poor pains	Easy	High	Ether	8	No rotation Face born under arch	Uninjured		First child also forceps
7	III	32			36	O.R.A.	Poor pains Delirious	Easy	Low		8		Uninjured.		
8	I	27				O.L.A	Head arrested	Easy	Low	Ether	7		uninjured	Considerable	I was called late
9	I	27	7.30	3.15	10.45	O.L.A	Head arrested	Easy	Low	Ether	8		Lacerated half way		Forceps taken off early
10	II	23		2		O.R.A.	Uraemia Comatose	Easy	High	Ether	4	Cord three round neck Premature Died 3rd day	Slight lacer.		1st pregnancy miscarriage
11	I	30	36	2	38	O.L.A		Easy	High	Ether	9	Difficult Resuscitation	uninjured	Slight	
12	I	22	21	4	25	O.R.A.	Head arrested	Easy	Low		7½		Mucous membrane slight lacer.		Forceps taken off early
13	II	27	8	2.30	10.30	O.R.P.	Head arrested	Easy	High		7		uninjured		Rotated manually 1st child also forceps
14	III	34					Dead foetus. Considerable haemorrhage. Uterus contracted.	Easy	High	Ether		Macerated	uninjured		I was called in to operate
15	IX	40			24	O.R.P.	Head arrested	Easy	High		9		uninjured		Rotated manually
16	I	29	17	2.40	19.40	O.L.A	Head arrested.	Easy	Low		8		Only the internal ostium vaginae lacerated.		Delivered with forceps on side.
17	I	27	60	2.30	62.30	O.L.A	Patient exhausted No progress.	Hard	High	Ether	8	Badly bruised by forceps	Lacerated half way		
18	I	27	18	2	20	O.L.A	Patient exhausted	Hard	High	Ether	6		Lacerated to sphincter	Considerable haemorrhage	Collapse while repairing perineum
19.	I	28	31	2.30	33.30	O.R.A.	Patient exhausted No progress.	Hard	Low	Ethyl Bromid Ether	8	Difficult Resuscitation	Lacerated to sphincter		
20	VII	34	12	5	17	O.R.P.	Head arrested	Easy	High		8	Died 3rd day from haemorrhage from mouth & rectum	uninjured		Rotated manually.
21	IX	35	24	1.45	25.45	O.L.A.	Head arrested	Easy	Low	Ethyl Br. and Chloroform	8		uninjured		Forceps taken off early
22	I	24			24	O.L.A.	Head arrested	Easy	low	Ether	7		Lacerated half way		I was called in to operate.
23	I	40	19	2.30	21.30	O.R.P.	Head arrested	Easy	High			Foetus dead some days.	Slight laceration		Rotated manually
24	I	27	24	6	30	O.L.A.	Patient exhausted	Hard	High	Ether	9½		Lacerated nearly to sphincter.		Septicaemia
25	X	37	37	2	39		No progress	Easy	High	Ether			Uninjured		Former labor precipitate
26	I	29	20	4.30	24.30	O.L.A.	No progress	Easy			7	Cord around neck. No heart beat. Resuscitated	Only a slight internal laceration	Considerable haemorrhage	
27	I	18	8.30	3	11.30		No progress	Easy			8		Only slight internal laceration		
28	I	20	5	3.45	8.45	O.L.A.	No progress	Easy			8		uninjured		
29	I	29				O.A.		Hard	High	Ether		Resuscitated c̄ great difficulty	Lacerated to sphincter		I was called in to operate.
30	I	26	26	3	29	O.L.A.	No progress	Easy	Low		10¼		Uninjured		Forceps taken off early.
31.	II	20			11.30	O.R.P.	No progress	Easy	Low	Ether	8	No rotation face born under arch	slight laceration		Reversed forceps.

I. 20
II. 4 { 2 First also forceps; 1 First, miscarriage }
III. 3
VII. 1
IX. 2
X. 1

O.L.A. 17
O.R.P. 8 { Rotated manually 6; Face born front 2 }
O.R.A. 3
3 Not noted.

High 18 { easy 13; hard 5 }
Low 13 { easy 12; hard 1 }

I was called in to operate in 3 cases.

post-partum hæmorrhage once. These percentages are lower than for the same accidents in the cases of unattended labor, and are not strong arguments for less promptly relieving laboring women of their load. Still, I think it proper to state my feeling of a growing reluctance to interfere with nature.

Table of Eight Podalic Versions.

No.	-ipara.	Position and Presentation.	Reasons for operating.	Character of operation.	Anæsthetic.	Weight and condition of child.	Damages.
1	III.	For two hours previously, hand protruding in bag membranes.	No fœtal pulse in wrist. Feeble (50) in cord.	Delivered first the right leg. Difficulty in getting left leg. Broke jaw. Broke cord. Child lost considerable blood.	Ether.	Heart beat 10 min. Could not be resuscitated.	Post-partum hæmorrhage.
2	I.	O.L.A. Good flexion.	Worthless pains. F. H. slow and feeble. Forceps failed twice.	Delivered first the right foot. No pulsation in cord when reached. Trouble in getting arms.	Ether.	Stillborn, ten pounds.	Post-partum hæmorrhage.
3	V.	O.R.P. Poor flexion.	Two hours in second stage. No progress.	Without even a nurse's assistance I did podalic version. First right then left leg. Left arm under pubis. Right at perinæum.	None.	Twelve pounds	
4	I.	O.L.P.	Forceps in vain. Considerable hæmorrhage. F. H. 50 in cord.	Began with wrong hand, but reached over and pulled out one foot; then changed hands and got the second.	Ether.	Heart beat two hours; eleven pounds; occasional gasps.	Post-partum hæmorrhage. Died on fifth day.
5	II.	Head.	Eclampsia; premature.	Manual dilatation.		Two and a half pounds. Died second day.	Considerable post-partum hæmorrhage.
6	III.	O.L.A.	First child lost in delivery. Second child forceps delivery. After one hour no progress; second stage, forceps tried in vain.	Drew down both feet. Rotated arms to perinæum and delivered without great difficulty.	Ether.	Twelve pounds Left arm paralyzed. Better after one year.	Ragged tear of perinæum. Considerable post-partum hæmorrhage.
7	I.	O L.A.	Mother exhausted. Vagina hot and dry. No engagement of head.	Drew down both feet. Head stuck for a half hour. Forceps tried vainly.	Ether.	Eight pounds. Stillborn.	Tore perinæum through sphincter.
8	III.	Twins, first breach; second lay crosswise, side presenting.		Turned and delivered easily, drawing down both feet at first.	Ether.	Seven pounds.	

Results { 5 post-partum hæmorrhage out of 8 = 63 per cent.
2 laceration of perinæum out of 8 cases = 25 per cent.

One mother died out of 8 = 12½ per cent.
Four stillborn children = 50 per cent.

Eight podalic versions are included in the series. Here I met my Waterloo. Particulars are given.

Of the eight stillborn, full-term children occurring in the two hundred cases, three were dead and partially macerated, one was the victim of craniotomy. The remaining four deaths must be charged to the 50 per cent. mortality in my version cases.

In mitigation it may fairly be pointed out that in one case the hand had protruded for over two hours, that there was no pulse at the wrist, and only slow, feeble pulsation in the cord; in two cases forceps had been tried in vain, and the fœtal hearts were feeble.

But worse than this infant mortality, which perhaps was unavoidable, the one mother, of the two hundred who died, succumbed to the effects of this operation. *Vide* case 1.

Case 1. *Version; probable rupture of the uterus; peritonitis; death.*

Mrs. M. P., twenty-four years; I. Labor began early in the morning October 14, 1884, by the escaping of liquor amnii and occasional pains. Through that day the cervix was gradually obliterated. She slept most of the night. At 4 A.M. October 15, pains became regular. The wire-edged os dilated well under full doses of chloral. The first stage ended at 5 P.M. Position O.L.P. During the next three hours the head descended to within a finger's width of the perinæum. During the *pains* she was comfortable: during the *intervals* she suffered excruciating pain in the coccyx, which was bearable only while pressure was vigorously applied. She had previously suffered in the same way, though to less extent, at her menstruations. The head became arrested, the pains grew worthless. Dr. J. W. Willis was summoned. By his advice the patient was fully etherized, and I applied the forceps. The forceps slipped. I put them on reversed, but could make no headway. I then tried Hodge forceps, but they also slipped. Considerable hæmorrhage ensued, which I am unable to account for.

The case now appeared desperate. Dr. Willis advised craniotomy, but assented to my preference to do version. I found the F.H. 50 in the cord. With my right hand (a mistake that cost dearly) I succeeded in going over into the right side of the uterus and drawing thence one leg, the right I think. Then with my left hand I extracted the other leg.

There was no especial trouble in delivering. The placenta came in fifteen minutes. There was no laceration of the perinæum: the post-partum hæmorrhage was controlled by flr. extr. ergot, minims xx, subcutaneously, and by intrauterine douche of hot water. The child, a boy, weighed eleven pounds. He had six fingers on each hand. After several minutes' work he gasped, and began soon after shallow but regular breathing. For two hours I worked over him, trying to revive, but in vain. His respirations and pulsations became more and more feeble after the first hour. The mother's pulse was very weak, 110. As she recovered from the anæsthesia she complained of great thirst. She was given rum and water. Three hours after her delivery I left her comfortable.

The next morning, October 16, her abdomen was swollen, and very tender in the right epigastrium. There was occasional gulping. Temp. 101°; pulse 120. She was catheterized at 4 P.M. Codeia was given p.r.n. to relieve her abdominal pain.

During the following night she passed urine naturally. She was still very thirsty. She drank egg nog, milk, and gruel plentifully, and lager beer. In the morning, October 17, she vomited. Constant hawking of phlegm from throat. Extreme distention of the abdomen, relieved somewhat by turpentine stupes and turpentine enema. Temp. 102°, pulse 130.

October 18th abdominal distention increased. Catheterized: changed clothing. Vaginal douche brought away no offensive washings. Champagne given freely. Codeia p.r.n. Temp. 102.5, pulse 104.

At 5 A.M., October 19th, I found her narcotized. Pulse 150, thready. In the P.M. a turpentine enema brought away some flatus. Vaginal douche came away *clear*. Catheterized and drew off two quarts of urine. Immediately after there came from the vagina as much as a pint of dark, slightly bloody, thin fluid. There was no pain at this time. Milk and lime water given, but soon rejected. Champagne retained. Morphine given for pain that night. Temp. 103°, pulse 160.

At 6 A.M., October 20th, patient comatose. Shallow breathing. Pulse 150 and a trifle firmer than the day before. Died at 9 A.M. No autopsy allowed.

I thought at the time that the sudden escape of bloody serum (after emptying the bladder) was from the abdomen. I still believe such was the fact.

In agreeable contrast is the record of case 2.

Case 2. Version.

Mrs. D. F., thirty-seven years old; V; had always had difficult labors, and had lost two of her children at birth. Labor began September 27, 1884, 12 A.M. At 2 P.M. I found the os one-half dilated, the head presenting O.R.P., and not well flexed, the F. H. 140 in the right abdomen. At 5 P.M. I ruptured the membranes. At 6 P.M. the os was fully dilated, and the pains were strong for two hours, but the head would not engage. At 8 P.M., after vain efforts to rotate the occiput to the front, I determined to do podalic version. As I had no assistant, not even a nurse, I did not venture to give an anæsthetic. My patient fully understood the peril and the pain she was to undergo, and she most patiently and heartily co-operated. I first pulled down the right leg, then the left leg. I delivered the left arm under the pubic arch, the right arm at the perinæum. So far there was no trouble. But the after-coming head came hard. Only the realization of my folly in attempting the operation unaided gave me the strength finally to deliver the child, — a girl, weight twelve pounds, heart beating strongly. The child gasped after five minutes' work, and is now a remarkably strong and healthy child. The mother suffered no laceration of the perinæum, nor hæmorrhage. Her convalescence was rapid and uninterrupted.

Of the two craniotomies one was accomplished manually upon a dead full-term fœtus, where the head was arrested, the uterus too firmly contracted to allow version, and where the proper instruments were five miles away.

I succeeded in tearing into the head; had not the dura mater been tough enough to pull by, I should not have bettered our plight.

For the second craniotomy see case 3.

Case 3. Craniotomy.

Mrs. F. P. E., thirty-seven years; I; a very strong, muscular, but small woman, began her labor at 12 M., April 9, 1887. At 5 P.M. the os uteri admitted finger tip, but the vagina was very tight and the buttocks exceedingly firm and unyielding. After twelve hours of labor, the os was fully dilated. Position O.L.P. No engagement, and pains died away after eight hours of second stage labor. With the help of Dr. E. R. Custer the patient was etherized, and I tried in vain to draw down the head with forceps reversed and also right side up. While pulling hard I felt a sudden give and heard a crack at the same time. On examining I found the scalp torn off the left frontal bone, which was broken.

Craniotomy then seemed to be plainly indicated.

Operation easily performed; the child's back was not rotated to the mother's front in extraction. The child, a male, weighed ten pounds. The perinæum was lacerated by the forceps slipping.

Patient made a speedy and perfect recovery.

I have lately had the pleasure of assisting Dr. George G. Tarbell in delivering the patient, without instruments, of a nine-pound boy.

Twice labor was induced. The cases are herewith reported, Nos. 4 and 5.

Case 4. Induction of Labor, eight months pregnancy; albuminuria; mitral insufficiency; acute œdema of the lungs; recovery.

Mrs. H. O. D., thirty-five years old, has one living child fourteen years old. Miscarried in 1879. Spent the following summer in the Boston City Hospital and in the Taunton Insane Asylum. In 1881 was first told that she had heart trouble. Has been fairly well the past four or five years. Menstruated last time September 27, 1884. Coitus September 21st, and October 5th. Menstrual intervals previously twenty-four to twenty-six days. Experienced the preliminary symptoms of menstruation and noted them in her diary October 23rd, November 18th, December 14th, January 12th, February 9th, March 8th, April 3rd, May 1st. During this pregnancy has been feeling very well till within two months; has since had an increasing heavy feeling in chest, and shortness of breath. At my first visit, May 24th, I found her bolstered up in bed, the legs and thighs œdematous, the face and hands slightly so. Pulse 120, a loud mitral systolic murmur. Urine scanty; $\frac{1}{4}$ per cent. of albumen. There had been an attack of dyspnœa the preceding night. *Absolute rest and free draughts of cream of tartar water* ordered. The second night after there was a second attack of dyspnœa, but at noon, May 26th, I found her as comfortable as at my first visit. That afternoon, after moving from her bed to the window she was seized with severe dyspnœa. On my arrival an hour later I found her breathing 60 to the minute, pulse not countable at the wrist, skin livid, coughing up almost constantly bloody, frothy serum, as much as Oj of which was in the basin before her, and as much more was coughed up in the next hour.

Rum was the only stimulant at hand, and that was immediately given subcutaneously and by the mouth. There was gradual rallying during the next few hours, the patient being held forward in a sitting posture. At 8 P.M., with Dr. E. R. Custer's advice and assistance, a pint of blood was taken from her arm. This gave immediate relief to the dyspnœa. It was not, however, even then possible for her to lie down. We decided that her only chance of life depended upon emptying the uterus. At 9 P.M. I dilated the os uteri with index finger, inserted a catheter and vainly attempted to rupture the membranes. Dilatation, however, was easy and I pushed on till three fingers entered, and so ruptured the membranes. Labor pains began at once. With occasional assistance of fingers the os was fully dilated in six hours, and half an hour later she gave birth to a stillborn child weighing five pounds. The vernix caseosa was dried on its skin, and it had evidently been dead for some days. Placenta came easily. During all this time the patient was held up in sitting posture. The coughing and dyspnœa steadily diminished, but hypodermic injections of morphine were necessary for six nights following in order that she might sleep lying down.

Six weeks afterwards, patient out and about, œdema gone, only trace left.

February 1, 1889. Mrs. D. very well; says she has no trouble with her heart.

Case 5. Eclampsia; induction of labor; manual dilatation; version; premature child; recovery of mother.

Mrs. B. H., thirty years; II; seven months pregnant. She miscarried at the seventh month in her previous pregnancy, she then suffered with œdematous legs. After a week of headache, indigestion, and drowsy feelings she was seized in a convulsion. She was in a second convulsion at the time of my arrival. She was at once etherized. One fluid ounce of urine drawn by catheter solidified on boiling. Os uteri admitted finger. In one hour I fully dilated the os, and did podalic version without trouble or delay.

Boy, two and one-half pounds, lived twenty-eight hours. There was considerable post-partum hæmorrhage.

One-third gr. morph. sulph. given hypodermically after the labor. Patient recovered slowly, but fully.

Eclampsia occurred in two other cases: in one the convulsions came on after the labor, in the second, the child and the placenta together were expelled during the first convulsion. Both the mothers and the children were soon strong and well.

In still another case there was profound uræmia, but no convulsions. The patient was nearly comatose during her labor, which was hastened by the use of forceps. The child died of marasmus on the fifth day. The mother had phlebitis of one leg, and made a very tedious recovery. She has since passed safely through pregnancy and labor.

In twenty cases, 10 per cent., there was post-partum hæmorrhage, amounting, as estimated, to one pint or over.

Post-partum hæmorrhage occurred in 14 per cent. of the cases of i-paræ; in 11 per cent. of the ii-paræ; in 9⅔ per cent. of the iii-paræ; in 8⅓ per cent. of the iv-paræ.

The hæmorrhage occurred in 3 out of 31 cases where forceps and ether were used, or 10 per cent.; in 5 out of 8 cases of version and ether, or 63 per cent.; in 4 out of 18 cases where the child was born before my arrival, or 22 per cent.; in 3 out of 15 cases where anæsthetics were used in normal cases, or 20 per cent.; in 5 out of 98 perfectly normal cases without anæsthesia, or 5 per cent.

In only one case was there any approach to a serious result, and in that the collapse may not have been wholly due to the hæmorrhage. See case 6.

Case 6. Forceps delivery; post-partum hæmorrhage; collapse; recovery.

Mrs. R. A. J., twenty-seven years; I. Labor began 4 A.M. September 4, 1885, first stage ended 12 P.M. The patient, a very slight, delicate woman, was completely exhausted after two hours of expulsive pains. The child's head was then in O.L.A. position, well flexed and one-half way through the pelvis. Ether was given, at first easily, but finally it had to be forced. Forceps were then applied, the head slipping back out of the pelvis. Considerable force was used in delivering, the head did not rotate well and was delivered obliquely. The perinæum was torn to the sphincter ani. Placenta expulsed in ten minutes. Considerable hæmorrhage, perhaps a pint. Ice was introduced into the uterus; and then vinegar swabbing, and finally a hot intrauterine douche.

When at last the uterus grew hard, and the hæmorrhage was stopped, ether was given and I began stitching the perinæum, when suddenly she started forwards, gasped, and sank back, apparently dead. There was no attempt at respiration for some time, I am unable to say for how long. There was no pulse at the wrist. Her legs were held up, artificial respiration was begun, brandy was given subcutaneously, vigorous fanning was employed. Under this treatment she slowly began breathing. An hypodermic injection of morp. sulph. gr. one-sixth did more good than all other measures combined. Not for six hours did the pulse fall below 150. She then partially recovered consciousness and declared she had seen the Virgin. At the end of the first day the pulse was 130; on the second day 120; and by the fourth day it fell to 100. Her temperature never rose above 99.5°. Her convalescence was steady, and by the fifteenth day she sat up. The child, a boy, six pounds, did well.

July 24, 1887, Mrs. R. A. J. was again delivered, but before my arrival. The child, a girl, seven pounds, came by the breech. I delivered the placenta forty-five minutes after. There was again considerable hæmorrhage, controlled by swabbing out the uterus with vinegar and then giving a hot intrauterine douche of $HgCl_2$ $\frac{1}{2000}$.

Of the measures employed to arrest post-partum hæmorrhages, nothing in my opinion is so useful as vinegar introduced into the uterus.

In my list of thirty-nine cases of lacerated perinæum are included those cases where even the internal ostium vaginæ was torn. In every case of the two hundred the perinæum was thoroughly examined, and it has been my practice to repair even the smallest rent of the mucous membrane. The percentage of perfect results obtained suffers from my neglect to record such: I do not think one failure failed of record.

Sixty-nine per cent. of the lacerations occurred in i-paræ, the delivery being natural in 48 per cent. of these, instrumental in 52 per cent. The remaining 31 per cent. of the lacerations occurring in multiparæ, 50 per cent. of which were before my arrival, 25 per cent. in operative cases, 25 per cent. in natural cases.

Three were lacerated through the sphincter, 5 to the sphincter, 9 one-half way to the sphincter, 11 slight external laceration, 9 slight internal laceration.

Sixteen united, 3 did not, 6 partly united, and 8 are not reported.

As I now believe, in many of the early cases the repairs were not rightly made. Instead of superficial sutures throughout the extent of the wound, inside the vagina as well as of the skin, I used to put in deep sutures from the outside. I now believe that such sutures distort the proper relation of the wounded surfaces.

There now remains for consideration only the diseases of the patients during the lying-in period, and of the infants.

Besides the prematurely born four infants died: two of marasmus, and two of hæmorrhages. One of them vomited blood and also voided blood from the rectum. The other passed blood *per urethram* from the second to the sixth day; he was apparently a fine, healthy boy at birth (eight and a half pounds) but failed directly after the hæmorrhages, although he lived three weeks. Two patients suffered from abscess of the breast. After free incision, and long-continued drainage, both made good recovery.

Two patients suffered from septicæmia: their cases are reported in full. See Nos. 7 and 8.

Case 7. *Puerperal septicæmia; periuterine inflammation; ten weeks of fever; recovery.*

July 8, 1886. Mrs. R. L. C., twenty-one years; I. A short, easy labor, but the perinæum lacerated half-way to sphincter. Repaired with four catgut sutures. Child healthy, weighed seven pounds.

July 7th. Patient slept well the following night. In the morning she passed urine all right. Lochia normal. Temp. 99°.

July 8th. Well in the forenoon. At 3 P.M. chilly, head aching. Lochia less, but no odor. Breasts distended. Temp. 103°. ʒij pulv. glyc. co. given. Breasts bandaged. Ice water compress, head.

July 9th. Three large dejections early morning. Still the headache. Breasts very full and painful. Temp. 104°. [℞ Egg-nog with eight pints frumenti fʒij; 4 hrs. Quin. sulph. gr. iv.; 6 hrs. Vaginal douches, $\frac{1}{2000}$ $HgCl_2$, bis ind.]

July 10th. Temp. 100.5°. Wakeful. Ears ringing.

July 11th. Temp. 102.5°. Shivering; pain in abdomen. Lochia slightly offensive.

July 12th. Pain in uterine region. No odor to the slightly stained napkins. Temp. 103°.

July 13th. Sleeping well, a good dejection. Temp. 103.5°.

July 14th. Temp. 102.8°.

July 15th. Offensive discharge from vagina. Vaginal douche came away cloudy.

July 16th. Temp. 102.3°. Douche seemed to bring pus.

July 17. Temp. 104°. An intrauterine douche $\frac{1}{4000}$ $HgCl_2$ brought away a little debris, and some pus.

July 18th. Temp. 104°. After the intrauterine douche, iodoform was applied inside the cervix and on the perinæum, which was not well healed.

For the next fifty days the temperature kept up; the general range was between 100° and 103°. Once it reached 105.5°. For two weeks intrauterine douches of $\frac{1}{4000}$ $HgCl_2$ were given once or twice a day, until there was no longer any débris in the wash water, with the exception of a day or two now and then; she took nourishment very well, often taking three pints of milk, a half-pint of beef tea, and a half-pint of whiskey. There was a persistent diarrhœa for two weeks in July, and again, after a week's respite, for three weeks in August. The weather was very hot and close; the patient suffered greatly from cold sweats. At the end of the first month the abdomen was distended and very painful for some days, especially in the left hypogastrium. At the end of the second month the pain and tenderness had changed to the right, and had here become so localized that Dr. W. H. Baker, who kindly saw the case with me (at my urgent request and in spite of his judgment that no pus would bé found), aspirated through the vagina. Sure enough no pus was obtained; but from that day convalescence was firmly established, the temperature never afterward rising above 101°, and only on a few days above 99°. Hot vaginal douches were given during the last month. The swelling and tenderness disappeared. The bowels became regular. Strength returned rapidly. During October she took entire charge of her baby. She is now a remarkably strong and healthy woman.

Case 8. *Forceps delivery; puerperal septicæmia; recovery.*

January 5, 1887. Mrs. K. M., twenty-seven years; I. First stage of labor lasted eighteen hours. After six hours of ineffectual second-stage pains, there being then no engagement of the head, I applied forceps and delivered a boy weighing nine and a half pounds. The perinæum was torn to the sphincter ani, and was immediately repaired. The patient did excellently until the third day, January 8th, when her temperature shot up to 104°. Her lochia became slightly offensive, there was pain over the lower abdomen. An intrauterine douche of $\frac{1}{4000}$ $HgCl_2$ was given.

The next day, January 9th, the temperature was steady at 102.5°; the abdomen was distended and painful. Poultices were applied, and pil. ergotini, gr. iij, given every three hours.

January 10th. Abdomen still more distended and tender. Turpentine stupes gave some relief. Hiccoughing. Intrauterine douche given by Dr. Edward E. Bancroft, who kindly assisted me in the subsequent care of the case.

For the next four days, intrauterine douches were given twice daily, washing out considerable debris, whiskey was pushed at the rate of f℥ss an hour. Marked improvement occurred on the eleventh day after her confinement; the eighth day of the fever; her breast milk returned; she had several copious and very foul smelling dejections. Her temperature soon became normal, and her appetite enormous.

I discovered during my connection with this case that the patient's husband had lately been taking care of a cow suffering from puerperal fever; he had dug out of her a sloughing placenta. On the second night he slept with his wife; the day following she was smitten with puerperal septicæmia.

CASE OF CEREBRAL TUMOR INVOLVING THE FACIAL CENTRE: AUTOPSY.[1]

BY G. L. WALTON, M.D.,

Clinical Instructor in Diseases of the Nervous System, Harvard University.

The patient was first seen by me at the Massachusetts General Hospital August 29, 1888, where he remained a short time under treatment in the Out-Patient Department. While there he was also seen by Drs. Putnam and M. H. Richardson. Previous to this time he was under the care of Dr. Horace Marion, under whose charge he came again later and up to the time of his death. He was also for a short time under the charge of Dr. E. N. Whittier.

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[1] Read before the Society for Medical Improvement, February 25, 1889.

Dr. Marion was fortunate enough to secure the autopsy which established the correctness of the diagnosis. To proceed in chronological order, I will first quote from Dr. Marion's notes: —

"J. H. G., forty years of age. Was first seen for the present illness April 24, 1888, late at night. He was in a dazed condition, and from the description given me I had no doubt that he had had a convulsion. As his habits had been for some time irregular, especially as to drinking, I explained the necessity of abstaining from all stimulants, and told him to let me know if he had further trouble. August 22nd he came to my office from his work, where he had just been seized with a convulsion. There was left facial paralysis and impaired motion, also a slight paralysis of the left arm. It seemed that after I saw him in April he went to Chicago, and there had one or two slight attacks of convulsions. This was the second one since his return, making in all up to this time, five, and this leaving some paralysis. During the following three days he had several slight convulsive attacks. No positive specific history could be obtained, but I put him on large doses of iodide of potash. In my absence from town for a week at this time, he went to the Massachusetts General Hospital."

It was at this time that he came under my observation, when I made the following notes: —

Patient's history (somewhat inaccurate). — He was always perfectly well until about six weeks ago, when he went to bed feeling perfectly well and on waking up found the doctor there. He felt dazed and as if he had lost consciousness, but went to his work that day as usual. His wife said that he was purple in the face and she thought he was in a fit, this condition having passed away before the arrival of a doctor. He felt perfectly well after this until nine days ago. Then he was at work, when he was seen to stagger against a wall, and was caught before he fell. He was unconscious for twenty minutes; he was purple in the face and bit his tongue. His arms are still lame and discolored from his struggles. When he came to, he was confused for a little while and went to bed. The next morning he went to work as usual, noticing nothing out of the way. The following day he had another attack while at work, feeling a premonition of the attack in a quivering of the lips; was unconscious only a short time. Five days ago he had another severe attack, which was followed by paralysis of the left side of the face.

There has been no special headache or vomiting. No specific history could be obtained.

Physical examination: — A strong, healthy-looking man, of good intelligence. No paralysis of motion or sensation in arms or legs, no disturbance of nutrition, an exaggerated knee-jerk on both sides but no ankle clonus. No optic neuritis. Heart normal. There is well-marked paralysis of the lower facial muscles on the left, also well-marked deviation of the tongue, the point to the left, the body of the tongue to the right. The left pupil is slightly larger than the right, both react well to light and to accommodation. There is no double vision in either direction, no paralysis of ocular muscles but a slight oscillation of the globe of the eye when turned slowly in any direction. Faradic reaction is very slightly diminished in the left side, both in the trunk of the facial nerve and in all branches, upper and lower. Careful examination shows that the left lid opening is wider than the right, and that the left frontal muscles do not move quite so strongly as the right. The levator labii superioris on the left contracts to localized irritation as well as the right.

A convulsive attack in the hospital, which I was fortunate enough to see, commenced with a fixed look, with perhaps a slight dilatation of the pupils; the head then turned violently over the left shoulder, followed by convulsive movements of the orbicularis palpebrarum, zygomatici, orbicularis oris, and platysma myoides, all on the left. There was no complete loss of consciousness, the patient repeatedly nodding his head when asked if he understood what was said to him, he being, however, himself unable to speak. The attack lasted two and one-half minutes, and was followed by slight thickness of speech and difficulty in collecting his ideas, not specially marked. The pupils reacted perfectly to light directly after the attack, and were practically equal. There were no convulsive movements of the arm, the patient striking his face repeatedly, as if to avert the convulsion, first with one hand, then with the other, using either equally well.

The diagnosis was made of a cortical or subcortical tumor in the region of the facial centre; character uncertain. Operation was advised, but declined because cure could not be assured, and the operation not warranted to be free from danger. He was put upon moderate doses of bromide of sodium and ninety grains daily of iodide of potassium.

To return to Dr. Marion's notes: "I heard nothing more of him until September 17th, when I was again called to see him. After remaining a fortnight at the hospital, he consulted Dr. E. N. Whittier, and for the week he was under his care he had no convulsions. Previous to this, and ever since I saw him in August, he had had many. All the time he was losing ground. At this time (September 17) there was complete paralysis of the left side, absence of all reflexes, pupils alike. He knew me, and answered questions correctly when he could do so by yes and no, dropping off into deep sleep at once. On the 15th he had been in town with his boy to purchase some clothing; fell from the sidewalk; said to have been crowded off, and not to have had a convulsion. On the 16th he was very drowsy, and on the 17th he slept all the time. At this time the only hope held out to his family was that of a surgical operation, and they were urged to again take him to the hospital. On the 18th he could scarcely be roused at all. On the 19th Dr. Whittier saw him with me. He was profoundly comatose, with involuntary micturition, etc. The family was again told that the only chance offering anything was surgical interference. This was positively declined. He died on the morning of the 20th."

The brain, prepared by Dr. Whitney with chloride of zinc, shows in the right hemisphere a subcortical, infiltrating tumor of softer consistency than the surrounding brain tissue, irregularly rounded in shape. It extends from under the middle of the fissure of Rolando downwards for about two centimetres, forwards through the ascending frontal convolution (ending at the posterior extremity of the middle frontal convolution), and backwards through the ascending parietal, its entire length being about three centimetres. The greatest depth of the tumor inwards is about four centimetres, extending nearly half-way to the mesial surface of the hemisphere, these measurements being taken after hardening of the brain. The edges of the tumor are in some places fairly well defined, at others quite indefinite, the tumor merging gradually into normal brain substance. It nowhere reaches the surface of the brain, approaching it at one point very nearly. The membranes were not adherent, nor in any way abnormal, the surface of the convolutions showing nothing distinctive. Microscopic examination by Dr. Whitney showed the characteristic appearance of glioma.

The post-mortem result shows that operation would have been unsuccessful, if attempted, although this could not have been determined during life, and the symptoms were those imperatively demanding the attempt; that is to say, we had to do with a tumor at or near the cortex, causing irritative, as well as paralytic symptoms, localized in character, and in a region well established as a motor centre, both by physiological experiment and by pathological observation. An interesting point with regard to localization is brought out by this case, in that the convulsion was ushered in by rotation of the head to the opposite side. The centre for this movement is not absolutely established in man, but in the monkey it has been shown to be at the posterior extremity of the superior and middle frontal convolutions. The tumor might easily have caused irritation of this region, or of the fibres proceeding from it, more especially the middle frontal convolution. Stimulation of the corresponding area in the monkey causes the eyes to open widely, the pupils to dilate, and the head and eyes to turn toward the opposite side (Ferrier). This practically took place at the commencement of the convulsion witnessed at the hospital. The eyes, however, were not rotated violently to the left, but looked in the direction the face was pointing during rotation of the head.

The case reported by Dr. Putnam at the same meeting tends to corroborate the view that the centre for rotation of the head is situated similarly in man and in the monkey.

A CASE OF PARTIAL RETENTION OF THE MENSTRUAL EXCRETION BY A MEMBRANOUS OCCLUSION OF THE OS UTERI.[1]

BY A. D. SINCLAIR, M.D.

This lady was under my care for uterine disorder soon after her marriage, when she was twenty-one years of age. She became pregnant a year later, in June, 1887. Suffered severely from nausea and vomiting for nearly three months. When near the end of the seventh month of pregnancy she had dimness of vision come on in the morning, and in the evening of the same day was seized with eclampsic convulsions, which occurred several times. Labor was induced, but by what method I am unable to state. She regained her general health in about six weeks, but some dimness of vision was complained of at the time of her first visit to me on the 13th of October last, when she consulted me about menstrual disorder. From the 25th of December, 1887, the date of her delivery, until about the same date in September, 1888, a period of nine months, her menses failed to appear, although she had sensation of being unwell from time to time, which gradually died away without any visible discharge. At this time she had a gush of blood from the vagina which lasted two, or maybe three hours. At the time of her visit on October 15, 1888, there was a slight, brownish, mucous discharge from the vagina. Her general condition seemed good. Appetite, bowels, sleep, and kidneys well. No complaint made of pelvic organs. On tactile examination, I found an enlarged and boggy cervix uteri, and a heavy uterine body. The examining finger was stained with a light brownish substance. The question of pregnancy naturally occurred to me. Specular examination revealed an unusual state of things — an orifice of the size of a cambric needle from which exuded a stringy substance which I at first mistook for the product of an abscess. Into this small opening I passed a small probe, at the same time pressed the speculum against the cervix uteri, with the result that more of the substance referred to was squeezed out. On further advance of the probe, I found that it entered freely into a cavity of unknown depth. I then made free incision with a bistoury, followed by a gush of four or even more ounces of a grayish, stringy fluid, mucus, and blood. I simply incised the occluded os uteri. The uterus measured over four inches in depth. The uterine cavity was washed out and the parts thoroughly cleansed by a solution of corrosive sublimate.

The after treatment of such a case was obvious, and may be summed up in the prevention of recurrence. It would seem to one not acquainted with the behavior of such cases that little else than that I had done was necessary. My experience is that of others, that the tendency to recurrence of occlusion of the os uteri in such cases is constant and demands care. The treatment consisted in dilatation with the uterine dilator, and by iodized phenol to the endocervix. The uterus is now three inches in depth, and the catamenia have become regular. The patient may need watching. Cases of this kind are not common, and in thirty years only four have come to my care. I shall be glad to learn from the experience of my associates in similar circumstances.

—The *Medical Record* says that in a London hospital a woman, sixty-eight years of age, with scirrhous cancer of both breasts had them both removed simultaneously by two surgeons, one on each side of the table. The whole operation lasted forty-five minutes, and after a short time she was discharged well.

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[1] Read before the Obstetrical Society of Boston, Feb. 9, 1889.

Clinical Department.

A CASE OF HIP DISEASE TREATED BY TREPHINING THE FEMUR.

HOUSE OF THE GOOD SAMARITAN. SERVICE OF R. W. LOVETT, M.D.

REPORTED BY GEORGE L. KINGSLEY, HARVARD MEDICAL SCHOOL.

THE patient, J. H., three and one-half years old, first came under the writer's observation on July 10, 1888, when he was admitted to the House of the Good Samaritan for treatment. The family history was negative; no exanthemata or previous illness; breast-fed; began to walk at eleven months. It was ascertained that in January, 1887, he had fallen on the floor, striking on his knees. For two weeks he walked very lame, and during this time was unable to lie on his left side on account of the pain. He was taken to the Massachusetts General Hospital, where rest in bed was prescribed, and after two weeks' quiet he seemed to recover almost entirely from his lameness, but still tired easily on walking, and after going a short distance the lameness would recur. On June 27, 1887, he was treated at the Children's Hospital as an out-patient. The hospital records show that at this time there was slight fulness over the trochanter major, which was somewhat thickened. He walked with a slight limp, and when picking up objects from the floor kept his left leg straight and fixed. Appetite good; bowels regular; occasional incontinence of urine. He was fitted with a Taylor hip splint and told to return for observation, but failed to again appear until July 9, 1888, when his hip was in such bad condition that he was referred to the House of the Good Samaritan for admission. In January, 1888, the hip became suddenly stiff. He was then treated for two months by an irregular practitioner and continually grew worse till in March he was unable to walk. At the time of admission physical examination showed a well-developed, well-nourished boy; the left hip flexed at forty-five degrees and considerably adducted; the hip very sensitive and hot; skin of leg eczematous; splint very poorly applied; sinus on outer aspect of hip discharging slightly. He was placed in bed on a Bradford frame with extension. He was very fretful and cried out at night considerably.

On July 26, the flexion having been overcome, a Taylor hip splint was applied, with which the patient sat up daily. On August 16, the hip being very sensitive and the discharge from the sinus quite profuse, he was again put in bed on a frame with extension. On September 9, the hip having become much less sensitive, the splint was again applied and he was able to walk with crutches. October 13 he was discharged much improved, the sinus nearly closed. November 1 he returned in very poor condition; the hip very sensitive and somewhat swollen, extensive excoriations on the leg from scratching, and the splint in very poor position. He was placed in bed on a frame with extension and an ice bag applied to the hip. He complained continually of pain in the hip, which remained quite swollen and sensitive. He had night cries continually. The discharge from the sinus in the hip continued, but less copiously. His condition growing continually worse, it was decided to trephine the femur, and on December 10, Dr. R. W. Lovett performed the operation under ether. An incision about three inches in length was made directly over the trochanter major and the intervening tissues separated. With a quarter of an inch trephine a hole was bored, starting at a point a little below the trochanter major and passing into the interior of the neck of the femur. The trochanter major and surrounding bone was found rather soft and cheesy. The core removed by the trephine was about one inch long, the inner end rather soft and dark-colored. A curette was inserted and a considerable amount of a soft, cheesy material, quite dark in color, removed, the cavity in the neck and head of the femur being scraped clean. The cavity was thoroughly irrigated with 1–3000 corrosive sublimate solution, a rubber drainage-tube inserted, extending to the bottom, the incision sewed up, and the whole dressed antiseptically. He passed a very comfortable day and night and seemed to have little pain. The following day his general condition was very good, little pain, morning temperature 101° and evening 103°. During the night he cried out a few times and the next day was somewhat restless; morning temperature 101° and evening 104.5°. The patient looked rather feverish, but was quiet. During the night he cried out a few times. The next day his general condition was better, morning temperature 101° and evening 102.5°. The dressing was removed, the drainage-tube found to be plugged with the discharge, and having been cleaned out, was reinserted, and the wound dressed as before. From this time the convalescence was uninterrupted, the night cries gradually subsided, and after January 24 ceased entirely. The drainage-tube had to be removed and cleaned several times and on January 14 was omitted, the incision having entirely healed except where tube had been inserted.

January 16 the patient began to sit up, and on the 21st was able to walk on crutches. On February 11 he was sent to the Convalescent Home at Arlington, the wound being closed except at one point, from which there was a slight discharge. He has improved steadily since his arrival at Arlington, and is now able to bear his weight on left leg without causing any pain.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

FEBRUARY 9, 1889, the President, DR. JOHN P. REYNOLDS, in the chair.

DR. J. S. GREENE, of Dorchester, read by invitation, a paper entitled

SOME USES OF THE VAGINAL TAMPON IN OBSTETRIC ART.[1]

DR. ABBOT asked whether the tampon was used empirically or for the purpose of supporting the uterus.

The reader replied that it acted partly as a depleting agent, relieving engorgement, and partly mechanically as a support.

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[1] See page 125 of this Journal.

Dr. Davenport said that he was very much interested in the paper, as he had very recently been engaged in enumerating and formulating the various uses of the tampon in gynæcological practice. These obstetrical uses of the same agent had not occurred to him at the time, but they completed the consideration of the subject. Most of the uses spoken of were rational, and might be used with great benefit in the conditions named. Of especial value was the use of the tampon in the early months of pregnancy, to allay vomiting, and relieve pressure. Even where the vomiting was not excessive but only annoying, he thought a light tampon might afford great relief. The depleting effect of the glycerine would not in his opinion be sufficient to do any harm by interfering with the circulation of the uterus.

He had recently had a case illustrating the value of this method following miscarriage. The patient had miscarried on January 10, and had kept quiet for ten days without any unpleasant symptoms. She resumed her business, which was that of a fashionable dressmaker, and in a few days came complaining of backache and slight hæmorrhage. Dr. Davenport found a heavy retroverted uterus, with a badly lacerated cervix, and with a small amount of blood and mucus exuding from it. Twice packing with the glycerine tampon checked the flowing, restored the uterus to its normal position, and relieved the backache. Then a pessary was applied which will be worn until the cervix is repaired, which will be in the course of a few months.

There was one use of the tampon in obstetrics which the reader did not speak of, viz., for controlling post-partum hæmorrhage. Thoroughly packing the uterine cavity has been recommended, but Dr. Davenport thought it would very rarely be necessary to resort to such a measure, and it would be difficult to carry out.

In reply to a question by Dr. Richardson, the reader said that he had used the tampon in the case reported of threatened miscarriage at the fourth month, not as a plug to stop hæmorrhage, but to give support to the uterus, and relieve the existing inflammation of the mucous membrane, and that its use was to a certain extent empirical.

Dr. Richardson had never used it in these cases, and would think that the packing might start up pains, or, by causing a backing up of blood, there might be danger of separation of the placental tissue from the uterus. He had used the tampon during pregnancy only for the purpose of relieving nausea and vomiting. He had recently been interested in some German accounts, where the uterus itself was packed with iodoform gauze.

Dr. Green said he could well believe that a light, medicated tampon might sometimes be of service in various affections of pregnancy, either for obtaining the derivative effect of glycerine, or for healing erosions or diminishing undue sensitiveness of the cervix. But applied to the extent of affording appreciable mechanical support, he believed the tampon was an unsafe expedient. He had himself, when a hospital house-officer, induced an abortion in a patient not supposed to be pregnant, by applying a tampon to raise a retroverted uterus. And he believed one of the most effective means of exciting uterine contractions was distending the vagina with tampon or colpeurynter. He inferred, therefore, that the reader could not have employed the usual gynæcological tampon; and that his good results were attributed to local medication, and not to mechanical support, which implies a certain amount of vaginal distention.

The reader agreed with Dr. Green, that in the case of distention of the vagina by the tampon there would be risk of inducing labor, but said he had no hesitation in using the tampon in the manner described by him in any parturient case.

Dr. Cotting then read a paper entitled

THE LIE OF THE FŒTUS.[2]

Dr. Alfred Worcester, of Waltham, read by invitation a paper entitled

A SERIES OF TWO HUNDRED CONSECUTIVE CASES OF MIDWIFERY IN PRIVATE PRACTICE.[3]

Dr. Doe said that the case of prolonged septicæmia would, he thought, have been an admirable case for the use of the curette on the third or fourth day, and he did not see what special use there could be in douches begun as late as the tenth day. The reader said that at the present time he should agree with this statement, but that the use of the curette for such a purpose did not occur to him then. In reply to Dr. Abbot, the reader stated that in repairing perineal tears he paid most attention to the stitching of the mucous membrane on the posterior vaginal wall so that the lochia should be excluded from the wound, and that he no longer used deep stitches, which he thought distorted the parts.

FIBROID TUMOR OF THE UTERUS.

Dr. Homans showed a fibroid tumor of the uterus, weighing eight pounds, removed by hysterectomy, with recovery. Also the fallopian tubes from a case of salpingitis removed entire. The tubes were each about seven inches long, and one and three-fourths inches broad, distended with pus.

Dr. Sinclair reported

A CASE OF PARTIAL RETENTION OF THE MENSTRUAL EXCRETION BY A MEMBRANOUS OCCLUSION OF THE OS UTERI.[4]

The society then adjourned.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

Ninety-first Annual Session, held at the Hall of the Faculty, Baltimore, Md., April 23, 24, and 25, 1889.

First Day, Tuesday, April 23.

THE PRESIDENT'S ADDRESS.

After greeting the members, Dr. John Morris, the President, said that the faculty was now celebrating its ninety-first birthday, and that he had watched its career for nearly a half-century, and was the only surviving member who had entered its gates by examination. He then addressed the members on the following subject: —

THE PHYSIOLOGY AND PATHOGENESIS OF CRIME. HOW FAR CAN MEDICAL MEN AID IN ITS PREVENTION?

The teaching of the day appeared to be to make the physician a naturalist — a physicist. In studying these sciences the higher study should not be neglected — the study of society, the study of man and his relation to his fellow-men, the advancement of the race through its psychical cultivation. Millions of diseased men remain uncared for, and the causes that have led to their degeneration are overlooked and unstudied. Physical culture is studied in the schools, but the character is not built up. We attempt to reform criminals, to rehabilitate them, and ameliorate their condition. We should use prophylaxis. To prevent a man from becoming a criminal we must begin with him as a child. There is nothing practical in our moral and religious education. Even the sense of right and wrong is not clearly, effectively, and practically taught. It is only the education that seeks to stimulate every noble purpose and capacity that can avail to form or change character, and this kind of education is not obtained in the school and the church. Every one cries out against immorality, but no steps are taken to create morality — to make morality a public sentiment, to make it a subject of national pride. Yet these are the prominent, the prevailing influences in Japan. There, crimes of violence and outrage are scarcely known.

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[2] See page 359 of the Journal.
[3] See page 427 of the Journal.
[4] See page 435 of the Journal.

When the law of heredity is recognized, it is the duty of the medical man to forewarn parents and to suggest the proper education and surroundings to render innocuous this taint of blood. This law of heredity obtains even more in moral than in physical traits, although the latter also, as is known, can be transmitted. "Breeding back" would often render a happy change in our economy. "Begin with a man's grandfather if you wish to reform him." The family doctor has disappeared, but he must be brought back to occupy a higher and a wider field. We are born with unalterable tendencies which are not always evil. The Jew and the Gypsy are examples of unalterable types. Psychology rarely enters into the education of a physician, and yet all questions of moral responsibility are associated with it. Ordinarily the physician treats the body alone, irrespective of the mental organization. He is but half a physician. The body yields to the mind, the mind to the body rarely. The weakness or total absence of certain powers of mind is rarely noted in children, and yet this observation is of the highest importance in shaping their future lives. The physician should be consulted in regard to the education of a family of children, and to do this he must have been trained by a long course of mental observation.

No man is born a criminal. We are not taught to value the truth. Perjury is the most common crime in our country, and yet it is rarely punished. The church and state have done little to regulate marriage, except the Roman Catholic Church and the church of England. Marriage should be regulated by law. Paupers and criminals should be prevented from marrying. The legislature of Kentucky has a bill now before it to regulate marriage. The tramp and malingerer should be stamped out; they need not exist. It is as harmful to bring insane children into the world, as it is to drive them insane by bad usage. The habitual criminal, man or woman, should be deprived of the power to procreate.

In all our original research let us not forget these questions. Let it be directed to the foundations of life; to the evolution and structure of character; to the evolvement and building up a higher intellectual and moral constitution of the race, not to a childish search after pebbles and toys, of jackstones in place of the true gold. In any and every event our work will go on, our profession will live as long as the ages endure. The more we advance in knowledge, the more the world will need us. As the astrologist, the alchemist, the barber of the middle ages gave place to the pompous and pedantic oracle of the seventeenth and eighteenth centuries, with his latinity, his lancet, and his squirt, the last, like the spear of Telamon, which healed at one end the wound inflicted by the other; and as this oracle was followed by the man of the present time with his -ologies and marvellous nomenclature, his thousands of drugs, his hypodermatic syringe, and his microscope, seeking after the unseekable; so in the future this present man will be succeeded by a race of men of advanced thought, of truer convictions, of stronger culture, of higher and broader views, to the end that the state may be enlightened, society improved, humanity benefited, and religion exalted.

PROCEEDINGS OF THE NEW YORK NEUROLOGICAL SOCIETY.

Meeting of April 2, 1889. The President, Dr. George W. Jacoby, in the chair.

The first order of business being the election of officers, the following were chosen for the ensuing year: —

President, George W. Jacoby, M.D.; First Vice-President, W. R. Birdsall, M.D.; Second Vice-President, C. L. Dana, M.D.; Recording Secretary, Frederick Peterson, M.D.; Corresponding Secretary, E. D. Fisher, M.D.; Treasurer, G. M. Hammond, M.D.; Councillors, Drs. E. C. Seguin, M. D. Field, L. C. Gray, B. Sachs, and M. A. Starr.

Dr. C. L. Dana then presented, for Dr. J. W. S. Gouley, a specimen of the spine and spinal cord in a case of

FRACTURE OF THE BODY OF THE TWELFTH DORSAL VERTEBRA WITH COMPRESSION OF THE CORD.

The case was of especial interest in connection with the subject of spinal surgery and of operative interference in cases of fracture and paraplegia. The man, age twenty, fell on April 19, 1887, through a floor, ten feet, striking on the abdomen and then turning on the back. Complete motor and sensory paraplegia with involvement of the sphincters at once set in. When examined next day by Dr. Gouley at Bellevue Hospital, the lower limbs were motionless, and there was total anæsthesia up to Poupart's ligament on the left side and half-way up the thigh on the right. The fæces came away involuntarily and the urine had to be drawn. There was no record of fever or pain, except a little of the latter in the back. The patient's condition remained without much change, except that the legs became atrophied and the reflexes lost, for two years, until his death in February, 1889. The autopsy showed fracture of the body of the twelfth dorsal vertebra and pushing forward of the fragment, reducing the size of the canal to three mm. and cutting the cord almost in two. The cord was disorganized at its lower extremity and secondary degenerations were present which would be studied later.

Dr. Philip C. Knapp then reported

A CASE OF TUMOR OF THE BRAIN: REMOVAL; DEATH.[1]

Dr. Dana said that neurologists should feel congratulated in that their part in Dr. Knapp's case turned out so correctly and satisfactorily. He thought this case tended to confirm the view that the motor areas represent also to a considerable extent cutaneous sensation. Dr. Knapp's statistics showed that operations have been quite successful, yet he had made them too flattering. The mortality is somewhat larger. He thought as regards cerebral surgery that surgeons have not yet reached the degree of perfection in technique that is necessary. The length of time of the operation should be reduced, and hæmorrhage more carefully guarded against. As to cranio-cerebral topography, no more accurate rule was needed than that of Horsley for finding the Rolandic fissure; it is more difficult to discover the fissure of Sylvius, and the rules for reaching its position on the skull are inexact.

Dr. Frank H. Ingram presented a case of

HEMICHOREA FOLLOWING CRANIAL INJURY.

An adult man sustained, seventeen years ago, a depressed fracture of the skull in the left parieto-frontal region. After two years choreiform movements developed in the right arm, gradually extending to the right leg and right side of the neck. Dr. Ingram ascribed the hemichorea to some organic lesion over the motor areas of the right hemisphere, indirectly traceable to the injury to the skull.

Dr. Birdsall said this case resembled one of his where a young man, aged fifteen, received a charge of buckshot in the head, near the angle of the jaw; twenty or thirty buckshot were taken from the skin and a few entered the brain. He developed in one half-hour choreiform movements on one side, but there was also slight paresis of the same side. He had regarded this case as a post-hemiplegic chorea.

Dr. Starr remarked that the movements in this man, as far as the right side was concerned, were almost precisely like those of a case of paramyo-clonus multiplex which he had reported some time ago. There were the same violence and irregularity.

Dr. Sachs thought there could be no injury to motor areas in Dr. Ingram's case, because instead of any paresis there was actually very great strength on the choreic side. He believed it to be a functional neurosis and not organic.

Dr. Starr called the attention of the last speaker to the fact that we may have hemiathetosis without paresis, although an organic lesion may be discovered post mortem. He referred to two cases, one of his own and one at Charity Hospital, in both of which the strength was perfect on the affected side.

Dr. Field stated that the case mentioned by Dr. Starr at Charity Hospital had recently cured herself by prayer, and was a case of hysteria. This was the second time prayer had caused cessation of the athetoid movements in her case.

Dr. W. M. Leszynsky then presented a case of

HÆMORRHAGE INTO THE CERVICAL REGION OF THE SPINAL CORD.

J. B., æt. nineteen, clerk, sixteen months ago wrestled violently with a room-mate, was exhausted, lay down, and slept one half-hour. He awoke with a dull pain between the shoulders and wrist-drop on both sides. In twenty minutes all four extremities became paralyzed. During the first week there was occasional loss of control of sphincters. In three months was improved so that he could walk without assistance, the left hand and arm, however, being decidedly paretic. At present there is partial paralysis of the left cervical sympathetic, producing contracted pupil and increase in surface temperature; paralysis and atrophy of muscles of left hand with degenerative reaction; thenar group right hand also atrophied; both hands cyanotic; no sensory disturbance; tendon jerks in arm increased; also a few changes in lower extremities. He thought the lesion to be intramedullary hæmorrhage into the lower cervical segment of the spinal cord, followed by transverse myelitis.

Dr. Starr thought that the diagnosis made by Dr. Leszynsky was defensible. The loss of pain and temperature sense was a very interesting point in the case. The literature shows that lesion of the gray matter of the cord cuts off the pain and temperature tracts below the lesion.

Recent Literature.

The Morton Lecture on Cancer and Cancerous Disease. Delivered at the Royal College of Surgeons of England, by Sir Spencer Wells, Bart., F.R.C.S. London: J. & A. Churchill. 1889.

The etiology and treatment of cancer is a question now urgently pressing itself upon the attention of scientific men and all progressive practitioners of medicine. Improved methods of investigation have already unlocked many a well-kept secret of nature in disease, but the various forms of carcinomatous disease, well termed by Sir Spencer "as heart-breaking to the surgeon as they are mysterious and terrible to the public," still remain as a reproach to the imperfection of our art.

This is the second of the lectures founded by Mr. John Thomas Morton in the hope that they might lead to the finding of a method for the prevention or the cure of these diseases.

Among the facts brought out in the present lecture is the important one that "cancerous diseases, so far from being less prevalent or less fatal, are increasing."

This is clearly shown by a careful study of the registration reports of England, Scotland, Ireland, and Wales. For instance, the number of deaths from cancer in England increased from 7,245 in 1861 to 17,113 in 1887. There was a steady increase during this period from 360 to 606 deaths from cancer among each million persons living in England and Wales.

The author quotes also Dr. Fordyce Barker's report that the mortality from cancer in the city of New York has risen from 400 to the million in 1875, to 530 to the million in 1885.

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[1] See page 378 of this Journal.

On the other hand, in the city of Frankfort-on-the-Main there has been a considerable decrease during the period 1863–83.

In the line of original research he recommends the study of the changes in the blood and blood-vessels and in the nervous system as modified by hereditary tendencies, or chemical or organic agents or micro-organisms, or the poisonous alkaloids which they leave behind them. This part of the lecture contains many interesting points which will repay reading.

Sir Spencer culls from his vast store of clinical material some interesting cases of adenoma of the sweat glands of the axilla, and has a special word to say about operations upon the uterus for cancer.

His present practice is to perform infra-vaginal amputation when the disease is strictly limited to the parts near the os: when the disease has extended much higher than the os, and there is good reason to believe from the mobility of the organ that the surrounding tissues are still free from invasion, he advises total excision. As to the use of pressure forceps in place of the ligature to secure the bleeding vessels, he thinks it should be left to the choice of the surgeon to adopt whichever plan he finds easiest in any particular case.

As to the results of this operation the following item may be quoted. Martin of Berlin writes to him: "Since the Washington Congress in 1887 I have performed the vaginal total operation in twenty-two instances. All recovered but one, who died of hæmorrhage: of supra-vaginal amputation I performed altogether six, with one death."

The first of the Morton Lectures was given by Sir James Paget and we presume that in the future the same judicious selection of a lecturer will be made.

There is a plan to interest actively in this important subject the leading lights of the profession and thereby rouse general attention to the pressing need of a new study of the whole question. Our State boards of health could do valuable service in instituting an organized and concerted investigation of many valuable data bearing upon the etiology of cancer.

The Insane in Foreign Countries. By William P. Letchworth, President of the New York State Board of Charities. New York, London, G. P. Putnam's Sons, the Knickerbocker Press. 1889.

A large volume of 363 pages, fully illustrated, of such great typographical excellence and accuracy that it is a pleasure to read it, in an agreeable, concise, and clear style, gives the results of a close study begun nearly ten years ago by a careful, critical observer of the laws and practices in the treatment of the insane in Great Britain and on the continent of Europe. Mr. Letchworth's point of view has been that of the humanitarian and social economist. To boards of State charities and to officers of insane asylums his book will be invaluable, while there is much in it to interest the physician. His account of the colony of insane at Gheel is the fairest which we remember having seen, and his conclusion is ours, that the Gheel system is of little practical value to America, except as demonstrating that a great amount of freedom is possible in the care of certain classes of the insane. The Scotch boarding-out system he considers incomparably better, but quotes the Scotch Lunacy Board's policy in that regard as being for the effect of diminishing the demand for further asylum accommodation, and the statement of Dr. Sibbald, one of the commissioners, that not a month passes but some one has to be taken away from a family because of improper treatment.

One misses in so complete a work an account of Mr. Mould's asylum at Cheadle, in some respects unique, and one of the foremost in England, with its comfortable dwelling-houses of the vicinity bought or leased for the use of patients. Indeed, a study of Cheadle, and of Morningside and Prestwich, with their open fires, plants, flowers, bright decorations, etc., so well described by Mr. Letchworth, comprises a liberal education in the amenities and humanities in the treatment of the insane. The author has performed a rare service, and we reach the last page of his book with the satisfied feeling of time well spent.

The Ear and its Diseases: being practical contributions to the study of Otology. By Samuel Sexton, M.D., Aural Surgeon to the New York Eye and Ear Infirmary, etc. Edited by Christopher J. Colles, M.D., etc. Wm. Wood & Co. 8vo. pp. 450.

We undertake a notice of this work with feelings of mingled admiration, surprise, and indignation: admiration for the industry which has accumulated masses of interesting statistics and histories of cases, for the acuteness of observation and ingenuity of the author and the novelty of his interpretation of phenomena; surprise that he does not consider it necessary to offer proof for some of his novel assertions; indignation at a certain assumption of originality in the statement of facts long since well known, and the absolute ignoring of what are regarded as firmly established rules of general surgery.

The book is, however, very interesting, and in many points quite original, and we cannot but thank the author for placing his views, some of which are worthy of serious thought, in such admirable shape, and only wish that he had furnished the evidence in a more scientific form for the exceptions which he takes to much that is now generally accepted.

Œuvres Complètes de J. M. Charcot. Tome V. Maladies du Poumons et du Système Vasculaire Paris: 1888. Aux Bureaux du Progrès Médical. (Complete Works of J. M. Charcot. Vol. V. Diseases of the Lungs and of the Vascular System.) pp. 654.

This volume contains the lectures, notes, and observations of M. Charcot on diseases of the lungs, blood, heart, and vessels. It is hoped that the collection in one volume of these works, hitherto widely scattered, will be favorably received by the profession. Although among these works, some of which were put forth upwards of thirty years ago, there are doubtless those the interest of which is to-day chiefly historical, it seemed worth while to credit them, history itself being pregnant with instruction.

"Instead of arranging these papers chronologically we have grouped them according to the subject with which they deal; and have, consequently, inserted after the individual lectures on diseases of the lungs notes bearing on their subject-matter."

The above is a portion of the preface signed by M. Bourneville, and indicates in a measure the scope of the work, which makes no pretence to being an exhaustive treatise on thoracic disease. The name of Charcot has been so closely identified of late years with diseases of the nervous system, our knowledge of which he has done so much to broaden and deepen, that one is tempted to forget that until recently he held the chair of pathological anatomy in the Paris Faculty. These lectures, forming part of his course in that department, are naturally primarily pathological, incidentally clinical. And it is interesting to note here that in the prologue, as it were, to the first lecture, while setting forth briefly the objects he aims at in his course, he criticises the tendency, so strong among the Germans, to divorce pathological anatomy from clinical medicine. The volume before us lacks the intense and living interest which attaches itself to some of the rest of the work of the eminent author, and is not likely to be very widely read in this country, where we are too much inclined to limit our reading and studies to the very latest and periodical literature. Moreover, as yet at least, this volume has not been translated. The mind of Charcot illumines any subject on which it is turned, and the profit to be derived from the perusal of one or another of his works is always real though it varies in degree.

Wood's Medical and Surgical Monographs. Vol. I. No. 1. New York, January, 1889.

Messrs. Wood & Co. propose to issue to subscribers a monthly volume similar to the one before us, the first of the series, which opens with Mr. Jonathan Hutchinson's six lectures on "The Pedigree of Disease" delivered before the Royal College of Surgeons in 1881 and published by Churchill in 1884 in separate form. These lectures are too well known to require notice in this place. The second monograph is on "Common Diseases of the Skin," by Dr. Robert M. Simon, of Birmingham, who disposes of pruritus, eczema, psoriasis, scabies, acne, and ringworm in less than forty-five pages averaging between three and four hundred words to the page. The third and final monograph is on "The Varieties and Treatment of Bronchitis," presented in fourteen clinical lectures by Dr. Ferrand, of the Laënnec Hospital, Paris. Even at the risk of seeming overcritical we cannot help expressing the wish that M. Ferrand had, like Dr. Simon, sinned by being too brief. In ninety-five pages he, as it seems to us, confuses a comparatively simple subject by over-classification; perhaps having fixed in his mind the French saying that classification is knowledge, and forgetting that the classification must be a natural and true one if use and valuable knowledge is to result. He divides bronchitis into the congestive (dry); catarrhal (with thin expectoration); inflammatory (with purulent and muco-purulent expectoration); spasmodic (asthma of all varieties, pertussis, false croup, etc.); and the infectious forms.

Perhaps the volume is not a fair index of those which are to follow; but the practice of holding the better wine in reserve is not one which is generally followed in these latter days.

The Pathology, Clinical History, and Diagnosis of Affections of the Mediastinum other than those of the Heart and Aorta. With tables giving the clinical history of five hundred and twenty cases. Being an essay to which was awarded the Fothergillian Medal of the Medical Society of London, March, 1888. Philadelphia: P. Blakiston, Son & Co. pp. 150.

It would not be easy to speak in terms of too high praise of this essay, which is likely even to stand as a foundation on which to build the fuller knowledge of mediastinal disease in store for us or our successors more or less remote. Cases of disease affecting well-defined organs occupying the mediastinum or its neighborhood are not included in this analysis. The collection comprises 134 cases of cancer, 98 of sarcoma, 115 of abscess, with many other cases which can be more or less definitely classified.

The conclusions to which the author is led are as follows: —

1st. Cancer is more frequently found in the mediastinal spaces than any other morbid process. 2nd. Abscess is the morbid process next in frequency. 3rd. Sarcoma occupies a third position as to frequency. 4th. Lymphomata and lymphadenomata occupy a fourth place, but are much more rare than the others mentioned. 5th. The anterior mediastinum is affected far more frequently than are the other two spaces. 6th. Most mediastinal growths occur in adults. 7th. More males are affected than females by mediastinal disease, be that disease what it may. 8th. Cancer and sarcoma of this space are necessarily fatal. 9th. Abscess is recovered from in about 40 per cent. of the cases.

It only remains for us to congratulate Dr. Harris on the great and well-merited success with which his essay has been crowned.

— The family of the late George L. Harrison, of Philadelphia, has offered $200,000 to the Board of Trustees of the Protestant Episcopal Hospital, with which to found and endow a building for incurables. The board will accept the offer. Mrs. Harrison joins with her four sons in making the gift.

— The Philadelphia *Daily Times* says of the competitive examinations for appointments as resident physicians at the Philadelphia Hospital that the examinations are conducted with every possible assurance of impartiality, by physicians and surgeons attached to all the leading medical schools of the city, so that there can be no doubt that the marks fairly indicate the respective qualifications of the candidates. Of the sixteen having the highest marks, the University had graduated thirteen and the Women's College three, a very good showing for the women in proportion to their numbers. All of these young physicians had pursued the three-years' graded course.

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THE COMPARATIVE VALUE OF THE DIFFERENT METHODS OF TREATING ACUTE GONORRHŒA.

Under this somewhat misleading head, Dr. André Martin, physician-major, publishes an interesting article in the *Journal de Médecine*, in which he contrasts what he calls the old with what he calls the modern methods of treating acute blennorrhagia.

The old or classic treatment begins at a date more or less remote from the onset of the disease, respects the period called inflammatory, and is directed to the stationary period (*période d'état*) and period of decline; it is both general and local, including, with rest and dieting, the balsams (copaiba, gurjun, sandal) alone or combined with injections; the latter are astringent (sulphate of zinc, acetate of lead), or simply protective, like bismuth and silicate of potash. All these injections have been accused of causing stricture, but the French writer declares it as his conviction that the duration of the flow more than the nature of the treatment contributes to the formation of consecutive strictures.

In a first series of clinical experiments Martin, following the precepts of Fournier, treated all the patients of his army corps for a fortnight to local and general baths, to emollient, mucilaginous drinks, to bicarbonate of soda, etc.; and it was not till during or at the end of the third week, when the discharge and micturition were without pain, that he began the use of copaiba, alone or associated with cubebs, and injections of sulphate of zinc — one grain to the fluid ounce, from one to five injections a day, in an increasing ratio up to five injections, then in a decreasing ratio back to one injection a day. During the stationary period, the zinc injections are well borne, and seem to favor the action of the balsams; the latter were not always prescribed, but in all cases a mild and cooling dietetic regimen and the use of emollient drinks preceded the employment of the injections. The following are the statistical results of this method. The average duration of the treatment is based on the number of days spent at the infirmary or hospital.

Number of cases of blennorrhagic urethritis................62
Days of treatment..1684
Average duration...27.16

These figures agree to the fraction of a unit with the statistics of the Arzew hospital, which, out of 130 cases, give the average duration as 27.26 days. Since 1884 Martin has invariably had recourse to antiseptic agents in the treatment of acute blennorrhagia. He makes use of the three following formulæ, the preference being given to the $\frac{1}{20000}$ solution of bichloride of mercury: —

A.	Sulphate of quinine,	1 part.
	Glycerine,	25 parts.
	Distilled water	75 "
	Acid sulphuric, q.s. to dissolve.	

The above is a one per cent. solution.

B.	Van Swieten's solution of bichloride of mercury,	10 parts.
	Distilled water,	190 "

The above is a very weak solution of the bichloride, 1 to 20,000.

C.	Permanganate of potash	0.05 (1 grain)
	Distilled water	100.00 (℥ iij–℥ ijss)

The treatment is begun the day when the patient first presents himself at the hospital for treatment; *i.e.*, generally from the second to the sixth day after the commencement of the discharge. Three injections a day are made, three syringefuls at a time. The injections are tepid, and tepid fomentations are kept continuously upon the penis. The injections are made with great gentleness. When the flow begins to dry up, the number of injections is decreased, till finally but one injection a day is made. The patient is kept in the hospital one week after cessation of all treatment, and is not discharged till he is believed to be absolutely well. The following table gives the results of treatment by antiseptic injections: —

Agents employed.	Cases treated.	Days of treatment.	Average duration.
Sulphate of quinine (1 per cent. solution.)	10	296	29.6
Permanganate of potash (1 per 2000 solution.)	47	1281	27.25
Bichloride of mercury (1 per 20,000 solution.)	45	953	21.17
Total,	102	2530	24.71

From the above, it will be seen that we have an average duration of 24.71 days, as contrasted with 27.16 where the treatment was according to the older "classic" methods. It will be seen, too, that of all the agents employed, the sublimate injections gave the best results, the average duration of the disease when treated by this antiseptic being 21 17.

Antiseptic injections can hardly be said to constitute a "new treatment" of acute blennorrhagia, except in the fact of their application from the very commencement of the disease, and to the exclusion of all other treatment. It is surprising to see how little pain they occasion, even during the so-called inflammatory period, and they seem to produce rapid amelioration in the intensity and nature of the discharge. According to Martin, this treatment is much less liable to be attended with complications, such as orchitis, cystitis, prostatitis, than the ordinary treatment, and he presents statistics to prove his affirmation.

During the antiseptic treatment no special care about diet seems necessary. Sometimes full doses of bromide of potassium (sixty to ninety grains) prove a useful adjuvant, especially in cases of "exaggerated erethism;" an occasional injection of one-sixth of a grain of morphine in the lumbar region may be indicated. In cases complicated with chordee, lavements or suppositories containing fifteen grains of chloral sometimes give excellent results.

In cases complicated with cystitis, orchitis, or prostatitis, the microbicide injections are to be suspended to give place to emollients and sedatives.

It is worthy of remark that the results of the germicide treatment as given by Martin are much inferior to those claimed by some other authorities, notably Bourgeois, Chameron, and Constantin Paul.

The conclusion that patients are perfectly well at the time of discharge from hospital in these cases deserves notice. Nothing is stated in the article to show that any unusual care is taken which would warrant such a conclusion. There is nothing to show that in these patients a thin, transparent, gleety discharge does not appear as in other patients a short time after their return to duty. It is not easy to determine that a given patient is actually cured of gonorrhœa. The optimistic views of Dr. Martin need to be balanced by more philosophical and scientific views, such as those advanced by Drs. Bryson and Burnett in the *Journal of Cutaneous and Genito-Urinary Diseases.* These authors confirm previous observation that the gonococcus of Neisser persists in some cases after all discharge has ceased, and thus acute symptoms may be lighted up by any undue excitement.

FLORIDA AND YELLOW FEVER.

The fatal case of yellow fever reported nine days ago as occurring in Sanford, Florida, and referred to in our last issue, has been accepted as an actual case of yellow fever by the president of the Florida Board of Health and by the Marine Hospital Service. This frank acknowledgment of the disease is itself, in a certain measure, reassuring. If continued it will, we believe, result in less danger, less exaggeration, and less tendency to foolish panic than if the opposite course were persisted in.

Florida can no longer be regarded as a very poor State, but at the same time her growing prosperity is bound up in her sanitary condition, in her being able to show a clean bill of health, at least as far as epidemic diseases are concerned. She is undoubtedly able to do much for herself toward this end, and her public authorities are now quite awake to the importance of doing what they can. Last winter many interests suffered from the yellow fever of the previous summer and spring, and of those who did go from the North last winter, notwithstanding the yellow fever, many left earlier than they otherwise would have done, fearing quarantine in case of a new outbreak.

But, although the State and the citizens can do much and should be expected to, the problem as regards yellow fever is a difficult one, with Havana as a constant source of infection only nine hours distant from Key West, and twenty-seven hours from Port Tampa by direct steam communication.

Sanford is a junction-station of the Jacksonville, Tampa, and Key West Railroad, the South Florida Railway, and the Lake Eustis Railway. It is about a hundred miles from Tampa, and perhaps one hundred and fifty from Punta Gorda, from which points communication is made by steamship with Key West and Havana, and with New Orleans.

In regard to Key West, Dr. Gnitéras, as previously quoted by us (February 14, p. 174), states that malarial diseases do not originate there, and that yellow fever has prevailed there almost continuously since 1881, at least.

It will probably be difficult to prevent the occasional reintroduction of yellow fever into Florida towns, but it will be equally difficult to arouse those who have grown accustomed to it to a sense of its danger to life and its menace to property. This, however, is what the State of Florida and its towns, encouraged by the General Government where proper, must undertake to do. We hope to hear, for instance, that Jacksonville will not rest content with employing experts to make recommendations.

It is possible that the summer may pass without a renewal of last year's experiences, and we sincerely hope it will; but, if it should be otherwise, nothing but good can come from candor in regard to the exact situation.

ACETYL-PHENYL-HYDRAZIN AS AN ANTIPYRETIC.

NOT long ago another new antipyretic with another barbarous name was offered for clinical tests. The first reports were somewhat favorable, but later experiences were the reverse of favorable, toxic action and a tendency to collapse, similar to that following the administration of kairin, being observed. These drawbacks are since said to have been due to impurities or accessory products in the drug as administered. A pure preparation is now promised of this new antipyretic, known as acetyl-phenyl-hydrazin; its chemical formula — $C_6H_5NH{\cdot}N.H.CH_3CO$ — shows a marked relation to that of antifebrin — $C_6H_5NH.CH_3C.O$ — differing from it only by the increment of one imido-group (NH).

We learn further in regard to this new contestant for antipyretic honors that its derivative composition — from phenyl-hydrazine with an acetic-acid rest — relates it likewise to antithermin — $C_6H_5NH.N([C.CH_3]\,[CH_2.CH_2.\,COOH])$, — which is produced by the dehydration of a combination of phenyl-hydrazine with levulinic (Beta-aceto-propionic) acid, a higher homologue of acet-acetic acid. Equally, the derivation of antipyrine (phenyl-dimethyl-pyrazolone) — $C_6H_5N([N.CH_3]\,[C.CH_3].CH.CO)$, — from a phenyl-hydrazine compound with acet-acetic ester, places that substance in relation with the subject of this article; and the analogy between antifebrin, mentioned above, and its kin-compound phenacetin — $C_6H_4(OC_2H_5)NH.CH_3CO$ (differing by the substitution of an oxy-ethyl group $[OC_2H_5]$ for a hydrogen atom) — brings the latter-named antipyretic also into the line of these chemically and therapeutically inter-related compounds.

From the foregoing the conclusion is suggested that the claim of acetyl-phenyl-hydrazin, as a legitimate member of this extended antipyretic family, to an exact clinical test of its powers — when employed pure! — rests on good presumptive evidence.

It is not amiss to encourage *judicious* clinical tests of these new antipyretics, as fast as they are presented with reasonable claims to attention as being improvements on their predecessors.

MEDICAL NOTES.

— Attention has been called in the British House of Commons to the prevalence of intoxication by the use of ether in some parts of Ireland.

— Dr. A. Baginsky, at a meeting of the Society for Internal Medicine, of Berlin, says the *Medical News*, stated that he had seen no good results follow the application of moist antiseptic bandages to the navel of the newborn, as recently recommended and practised by a number of gynæcologists. He considers the application of carbolic acid as most dangerous, for only a small abrasion of the navel is necessary to cause toxic symptoms which generally terminate fatally. He himself uses as a bandage, cotton to which small quantities of iodoform have been applied.

BOSTON.

— The fifth annual meeting of the Massachusetts Emergency and Hygiene Association was held at the house of the president, Francis Minot, M.D., April 25. The reports of the work accomplished during the past year by the various committees were presented, showing the rapid growth of the association in several new directions. First, the formation of a committee on sanitary work; second, the giving of simple talks on home nursing to ignorant women by a class of ladies trained by Dr. Minot for that purpose; and third, the enlargement of the sand gardens into the playgrounds, which proved such a source of pleasure to the children of the poor last summer. Eighteen different places were supplied with sand and shovels, including the seven open school yards, where four days in the week, during the vacation, any child under twelve years of age was allowed to play in the sand heaps, was provided with balls, tops, building blocks, bean-bags, and with transparent slates to draw upon. The committee in charge of this work appealed earnestly to the members of the association and to the public for money to pay the expense of the coming season.

Mrs. K. G. Wells read the report for the Executive Committee, as chairman, and enumerated the work accomplished in the State at large. The usual emergency, hygiene and home nursing lectures — one hundred and sixty in all — have been given during the winter. Dr. Greenleaf, as chairman of committee on police and firemen, reported several instances of valuable assistance rendered to injured persons by the officers, notably one where a man was literally bleeding to death from a cut which nearly severed the wrist from the arm. A tourniquet, skilfully applied, stopped the hæmorrhage, and the man was carried to the hospital.

Dr. O. H. Marion's report for the militia showed the abiding interest of the men in emergency instruction.

NEW YORK.

— By the will of the late Mr. William J. Syms, a wealthy citizen, the Roosevelt Hospital receives a most munificent addition to its funds. This amounts to $350,000, and of this sum, $250,000 is to be used in the erection of a surgical operating theatre to the east of the hospital buildings, which is to be under the direction of Dr. Charles McBurney, one of the visiting surgeons, and to be known as the "William J. Syms Operating Theatre of the Roosevelt Hospital." The remaining $100,000 is to be invested, and the income applied to the expenses of the theatre. A new operating theatre for this hospital was for a long time a cherished desire of the late Dr. Henry B. Sands, who was one of the surgeons to it from its opening.

— A seven-months-old infant came to its death in a curious way in Brooklyn recently. The mother while holding the child in her arms suddenly fell to the floor and expired from disease of the heart. It was under her body, and before the other child, who was only three years old, could summon aid the baby was suffocated.

— The handsome new chapel building erected at Bellevue Hospital, at a cost of $30,000 by Mrs. R. H. L. Townsend, who a short time since presented to the hospital the Townsend Pavilion for abdominal surgery in the female, was formally dedicated on April 22nd by Bishop Potter, Archdeacon Mackay-Smith, and the Rev. Henry Y. Satterlee, D.D. The building is of rough white stone, and is three stories high. On the first floor are a small mortuary vault, a store-room for delicacies and reading matter for the sick, and a room for the accommodation of ladies and others engaged in visiting the wards. The entire second floor is taken up with a reading-room free to all patients who are able to use it, and well supplied with current literature and games. The third floor is devoted to the beautiful chapel of "Christ the Consoler," and, in addition to religious services, it is to be used for concerts, lectures, and other entertainments. The whole building, by special agreement with the Commissioners of Charities and Correction, is to be perpetually under the control of the New York Protestant Episcopal City Missionary Society.

— The fourth annual report of the New York Cancer Hospital, just published, shows that the number of patients up to January 1, 1889, was 278, of whom 148 were free patients. The number of operations during the year was 180, and the results were generally quite satisfactory. The donations since the preceding annual report include $145,000 by Mr. John Jacob Astor for the erection of a new pavilion in memory of his wife.

— The eighth annual meeting of the International Medical Missionary Society was held April 23rd. Besides the work of educating medical missionaries for foreign lands the society maintains a number of dispensaries in New York and Brooklyn.

— A man twenty-six years of age recently jumped from the Brooklyn bridge into the East River, a distance of one hundred and forty-five feet, with the intention, it is said, of committing suicide. On coming to the surface he struck out to swim, and was soon rescued by a passing steam-tug. The injuries he received are not believed to be of a serious nature.

Miscellany.

A CASE OF ANTIPYRIN POISONING.

Dr. W. P. Northrup reports a singular case of antipyrin poisoning, showing extreme susceptibility to this drug (*Medical News*, April 27th). The first specimen was subsequently tested clinically and seemed to be good, and the second specimen was selected with especial care. The symptoms observed are briefly recapitulated at the conclusion of a detailed description as follows: Fifteen grains of antipyrin caused, in an hysterical woman, sneezing, evacuation of the bowels, syncope (thirty minutes), vomiting, prostration. Five grains caused sneezing, urticaria and diffuse hyperæmia of skin, dyspnœa.

SPLENIC MURMURS.

The *Lancet* (April 6) gives the conclusions of an interesting paper read before the Clinical Society of Paris by Prof. Bouchard, in which the author drew attention to the existence of a bruit over the region of the spleen in cases of enlargement of this organ, a bruit not attributed to pressure upon vessels or to conduction from the heart, but apparently generated in the splenic artery or in the spleen itself. During the past three years he had constantly practised auscultation of the spleen, and on five occasions had detected such a bruit. Three times the splenic enlargement was due to cirrhosis of the liver; in one case the spleen was hypertrophied, as in leukæmia, but the blood was not altered; and in the other the swollen spleen was associated with a large liver in an obese subject. In several cases — notably in malarial spleen and in one marked case of leukæmia — no bruit was to be detected. He entered into details of his first case, one of cirrhosis of the liver, in which the spleen was very large, measuring seventeen by eleven centimetres, and was hard and smooth. Over its whole area there was audible a soft, prolonged bruit synchronous with the pulse, but the bruit could not be traced beyond the splenic region. It was still audible when the patient was made to lie on the left side, and thus to prevent the organ exercising any pressure upon the abdominal vessels. The bruit was audible whenever the case was examined during the three years it was under observation. The case was otherwise interesting as an example of "cured cirrhosis," upon which the chief discussion took place. There had been considerable ascites, which required paracentesis on three occasions; but Prof. Bouchard attributed the arrest of the disease to the prolonged administration of calomel in small doses. The patient also had an attack of uræmia, which was successfully treated by naphthol, on the theory of intestinal antisepsis being needed to limit the operation of auto-intoxication in the production of the uræmia.

Correspondence.

LETTER FROM PARIS

FROM OUR SPECIAL CORRESPONDENT.

ANTIPYRINE IN DIABETES; OVARIOTOMY; SACCHARIN; FEEDING BY THE NOSTRILS IN DISEASE OF THE MOUTH.

Paris, April 19, 1889.

Professor Panas, a distinguished surgeon and ophthalmologist, introduced a medical subject at the meeting of the Academy of Medicine of last week. Guided by the experience of some physicians in respect to the efficacy of antipyrine in the treatment of diabetes, he resolved to try the remedy in diabetic patients affected with cataract. In a first case he was, by this treatment, enabled to reduce the quantity of sugar from forty-nine grammes to fifteen grammes per day, without, however, being able to reduce it lower. In this condition, M. Panas operated on one eye for cataract with complete success, thanks to the antiseptic dressings he employed. Two years after the patient returned to the hospital to have the other eye operated on, as the cataract had become complete. The result of the operation of the first eye (the left) was quite satisfactory. The analysis of the urine showed that it contained fifty-five grammes of sugar per litre. M. Panas submitted the patient to three grammes of antipyrine per day, and the sugar had completely disappeared from the urine. M. Panas operated on this patient with equal success. The treatment was continued for twelve days after the operation. The visual acuity of both sides was excellent. On another occasion a lady aged seventy-five years was operated on by M. Panas for cataract under the same circumstances and also with complete success. According to M. Panas' experience he confirmed that of other medical men who found in antipyrine a very favorable remedy for diabetes, on the condition, however, that it be administered in doses of three grammes per day, as he found that a smaller quantity had no effect. Prof. Germain Sée took part in the discussion and gave the *resumé* of a certain number of cases of diabetes, in specifying those which can be cured, and those in which this mode of treatment is not justifiable. Dr. Albert Robin, well-known for his researches on antipyrine and on kindred substances, read a memoir on the treatment of diabetes by antipyrine, the conclusions of which may be summed up as follows. 1. Antipyrine should be employed at the commencement of the treatment of a diabetic patient, as it will then moderate, in a short time, any considerable glycosuria or polyuria. 2. It permits the suspension of the diet to which diabetic patients are subjected, and of which they soon get fatigued. 3. It is indicated when the diet, a long time continued and well tolerated, has given its maximum useful effect, in the sense that the glycosuria and the polyuria have arrived at a fixed point below which they do not descend. 4. An intelligent combination of the diet and of antipyrine, associated in a sort of alternate medication, appeared to the author to be one of the best forms of treatment of diabetes. 5. The medicament should not be insisted on when it does not rapidly produce a considerable diminution of the glycosuria. 6. One of the best means for judging the effects of antipyrine is not only to measure daily the quantity of the sugar in the urine, but also to measure each day the quantity of the urine and its density. Antipyrine is favorable when the quantity of the urine gradually diminishes, also when its density descends or at least remains stationary. But if, the quantity of urine diminishing, the density tends to rise, the antipyrine must be immediately and altogether suspended. 7. Albuminuria does not constitute an absolute contraindication. Its presence simply implies a question of dose and of duration in the employment of this medicament. 8. Finally the diminution of the appetite, the emaciation, the sensation of debility experienced by the patients, the pallor of the face, sense of oppression, puffiness of the eyelids or the sensation of tension of the face are symptoms which, when they appear, show that the use of antipyrine is more injurious than useful, even when the glycosuria is favorably influenced. Dr. Worms stated that he had employed for some time the sulphate of quinine in the treatment of diabetes, and obtained results altogether comparable to those obtained by antipyrine.

Dr. Terrillon, surgeon to the Salpêtrière Asylum, has published a report containing the *resumé* of his fourth series of ovariotomies. Thirty-five operations were practised by him from the 10th of November, 1887, to the 30th of June, 1888. Of this number there were only three deaths: two due to shock coming on forty-eight hours after the operation. The third patient, affected with bronchitis, had the sutures removed on the eighth day. On the ninth day the wound was slightly disunited, a knuckle of intestine and a portion of omentum escaped, but thanks to the antiseptic dressing, the protection of the organs was ensured, and the opening was closed by means of two sutures. The patient nevertheless, grew weaker, did not take sufficient nourishment, gradually sank, and expired eighteen days after the operation. In these thirty-five cases, there was no death imputable to peritonitis or to septicæmia, and yet the greater part of the operations were complicated, and it may be said that sixteen were particularly difficult. Dr. Terrillon regrets that women affected with ovarian cysts wait to the extreme limit of resistance to be operated upon. Many of them have themselves tapped several times before submitting to the radical treatment. He hopes that in a near future, medical men will reject from their practice tapping, the definitive results of which are always delusive, and that they will understand that the success of ovariotomy is certainly compromised by frequent punctures. As regards the operative measures and the instruments employed. Dr. Terrillon practises washing out of the peritoneum, in general, with filtered water, boiled and pretty hot. He employs drainage only in the cases where serious disorders exist in the pelvis. He effects the asepsy of the instruments by ebullition during ten minutes before the operation. He has given up the boiled silk thread to return to the catgut from which the fat has been removed and is prepared according to the procedure of Dr. A. Reverdin, of Geneva. He submits it to a temperature of 130° C. in a dry stove. He heats it slowly and for a long time and then preserves it in an antiseptic liquid. In examining the divers series of ovariotomies practised by Dr. Terrillon, it may be seen that in the first series he lost five patients, six in the second, four in the third, and three only in the fourth.

The total statistic, therefore, gives, of one hundred and forty patients operated on, seventeen deaths, or an average of twelve per cent. The deduction from this study is that the cases of death from peritonitis diminished from the second series, to disappear completely in the last two. According as his practice increased the number of incomplete operations seemed to diminish, and even totally disappeared in the fourth series. The cysts included in the broad ligaments, often so difficult to remove, have been extirpated in totality without accident. Finally, in the operated patients, no febrile reaction was produced. These results are certainly very encouraging and are to be attributed not only to the skill of the surgeon but to the strict adoption of the antiseptic method.

Dr. Constantin Paul thinks that if saccharin should be interdicted as an aliment, it might on the contrary be utilized as a medicament, and principally as an antiseptic. In this last point of view, it is susceptible of preventing the ammoniacal fermentation of the urine, as well as the development of the micro-organisms of pus or of puerperal fever. It may be utilized, for example, as a dentifrice or antiseptic for the mouth. A teaspoonful of an alkaline solution at six per cent. of saccharin in half a glass of water constitutes a good dentrifice. It may be utilized also for the washing of the stomach, and it may be advantageously substituted for boric acid for washing out the bladder.

Prof. Tarnier lately presented to the Academy of Medicine of Bordeaux, a memoir in which he relates the case of an infant that was affected with aphthæ which, not being able to be nourished by the mouth, nor by means of a "gaveuse," was nourished by means of the introduction of milk through the nostrils. This child was restored to absolute health, thanks to this procedure. Some years ago, states M. Tarnier, this procedure had once been employed to nourish an infant affected with pneumonia and the success was equally complete. These facts are published as a suggestion for other practitioners.

REPORTED MORTALITY FOR THE WEEK ENDING APRIL 20, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhœal Diseases.	Diph. and Croup.	Scarlet Fever.
New York	1,571,558	868	357	21.12	18.84	1.92	6.84	6.84
Philadelphia	1,040,245	423	142	8.16	12.48	.72	3.60	.48
Chicago	830,000	253	100	22.40	16.80	2.00	11.20	1.20
Brooklyn	814,505	365	144	18.63	18.36	1.62	8.91	2.70
Baltimore	500,343	145	41	10.88	10.20	3.40	—	.68
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	231	74	12.90	21.07	2.58	7.31	.43
New Orleans	250,000	97	18	13.39	8.24	2.06	4.12	1.03
Cincinnati	225,000	148	—	14.28	18.94	.68	6.12	.68
Washington	225,000	91	24	15.26	9.81	1.09	4.36	1.09
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	13	2	15.38	15.38	7.69	—	—
Charleston	60,145	28	8	7.14	17.85	3.57	—	—
Portland	40,000	10	3	20.00	20.00	—	10.00	10.00
Worcester	78,292	27	10	18.50	18.50	—	7.40	—
Lowell	71,518	40	8	15.00	10.00	2.50	—	—
Cambridge	65,552	26	10	3.85	7.70	3.85	—	—
Fall River	62,647	31	13	3.23	9.69	—	—	3.23
Lynn	53,334	11	—	27.27	9.09	18.18	—	—
Springfield	40,731	22	5	13.65	18.20	—	9.10	—
Lawrence	40,619	19	1	11.52	23.04	5.26	—	—
New Bedford	37,253	18	7	11.11	16.66	—	11.11	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	6	2	—	—	—	—	—
Brockton	28,813	10	7	—	40.00	—	—	—
Chelsea	28,167	8	2	—	12.50	—	—	—
Haverhill	26,058	5	2	20.00	—	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	1	0	—	—	—	—	—
Newton	21,553	6	1	33.33	—	—	33.33	—
Malden	19,774	14	6	28.56	7.14	7.14	7.14	—
Fitchburg	17,534	6	2	—	33.33	—	—	—
Waltham	17,332	5	2	20.00	—	—	—	—
Newburyport	13,875	4	2	—	25.00	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	7	3	—	28.56	—	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2938; under five years of age 996; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 467, acute lung diseases 474, consumption 397, diphtheria and croup 185, scarlet fever 79, diarrhœal diseases 46, typhoid fever 39, measles 31, whooping-cough 31, cerebro-spinal meningitis 21, malarial fever 17, erysipelas 10, puerperal fever 8. From typhoid fever, Philadelphia 8, Cincinnati 6, New York and Chicago 5 each, Baltimore and Lowell 4 each, Brooklyn, Boston, New Orleans, Washington, Charleston, Lawrence, and Malden 1 each. From measles, New York 13, Chicago and Brooklyn 5 each, Philadelphia, Boston, and Cincinnati 2 each. From whooping-cough, New York 14, Brooklyn 7, Philadelphia, Chicago, Boston, and Washington, 2 each, Baltimore and Cincinnati 1 each. From cerebro-spinal meningitis, New York, Chicago, and Washington 5 each, Philadelphia, Lowell, Malden, and Waltham 1 each. From malarial fever, New York and Brooklyn 5 each. New Orleans 4, Baltimore 3. From erysipelas, New York 4, Brooklyn, Boston, Cincinnati, Worcester, Lynn, and Springfield 1 each. From puerperal fever, Chicago 3, Baltimore 2, Philadelphia, Brooklyn, and Nashville 1 each.

The meteorological record for the week ending April 20, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Apr. 20, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours& Min.	Amount in inches.
Apr. 14	30.12	43.0	53.0	34.0	46	42		44.0	N. W.	N.		12	12		C.	C.			.00
" 15	30.42	45.0	48.0	36.0	52	50		51.0	N. W.	S. E.		4	8		C.	C.			.00
" 16	30.42	45.0	48.0	37.0	54	56		55.0	E.	E.		10	5		F.	C.			.00
" 17	30.18	45.0	48.0	40.0	71	92		82.0	N. E.	N.		15	14		O.	R.		8.25	.40
" 18	30.06	50.0	52.0	44.0	93	87		90.0	N. E.	N.		12	10		R.	R.		3.45	.17
" 19	30.11	55.0	66.0	48.0	83	87		85.0	N.	E.		2	4		F.	C.		.15	T.
" 20	30.04	62.0	81.0	46.0	71	79		75.0	S. W.	S. W.		9	19		C.	R.		1.16	.05
Means for the Week																			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM APRIL 20, 1889, TO APRIL 26, 1889.

By direction of the Secretary of War the retirement from active service this date, by operation of law, of Colonel DAVID L MAGRUDER, Surgeon, under the provisions of the Act of Congress approved June 30, 1882, is announced. Par. 4, S. O. 94, A. G. O., April 23, 1889.

SMITH, Lieutenant-Colonel H. K., Surgeon United States Army, reports address of New Army Building as at No. 39 Whitehall Street, New York City. April 18, 1889.

VALLUM, Colonel EDWARD P., Surgeon United States Army, promoted to Surgeon United States Army with rank of Colonel, from April 23, 1889.

WRIGHT, Lieutenant-Colonel JOSEPH P., Surgeon United States Army, promoted to Surgeon United States Army, with rank of Lieutenant-Colonel, from April 23, 1889.

WOODRUFF, Major EZRA, Surgeon United States Army, promoted to surgeon, with rank of Major, from April 23, 1889.

Pursuant to instructions contained in letter from A. G. O., Washington April 13th, the following named Medical Officers will assemble with troops in New York Harbor on the 27th inst, prepared for field service in connection with New York Centennial parade: Major ROBERT H. WHITE, Surgeon United States Army; Captain CLARENCE EWEN, Assistant Surgeon United States Army; Captain JOHN J. COCHRAN, Assistant Surgeon United States Army, and First Lieutenant CHARLES B. EWING, Assistant Surgeon United States Army. S. O. 90, Headquarters Division of the Atlantic, Governor's Island, New York City, April 19, 1889.

By direction of the Secretary of War Captain EZRA WOODRUFF, Assistant Surgeon, is relieved from duty at Fort Missoula, Montana, and will report in person to the commanding officer Fort Monroe, Va. for temporary duty at that post. Par. 14, S. O. 92, A. G. O., April 20, 1889.

By direction of the Secretary of War leave of absence for four months on Surgeon's certificate of disability, with permission to leave the Department of Texas, is granted First Lieutenant FREEMAN V. WALKER, Assistant Surgeon. Par. 12, S. O. 92, A. G. O., April 20, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 27, 1889.

WILSON, GEORGE B., Assistant Surgeon, detached from the Naval Hospital, Mare Island, and to the "Iroquois."

CORDEIRO, F. J. B., Passed Assistant Surgeon, detached from the "Vandalia" and to the Naval Hospital, Mare Island, Cal.

BRANSFORD, JOHN F., Surgeon, ordered to the "Iroquois."

STITT, EDWARD R., Assistant Surgeon, ordered to the Bureau of Medicine and Surgery, Washington, D C

FEREBEE, N M., Surgeon, ordered to Naval Academy, Annapolis, Md., for examination of candidates for admission to the Academy.

SOCIETY NOTICES

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting of this Society will be held at 19 Boylston Place, on Monday evening, May 6, at 8 o'clock. Readers Dr. C. B. Porter, "Fracture of the Skull." Dr J. J Putnam, "Three cases of Cerebral Tumor — with autopsy." Dr. H H A. Beach will describe the operation for removal in one of the cases.

T. F. SHERMAN, *Secretary.*

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, May 8th, at 7.45 o'clock. Dr. A. L. Mason will report cases of "Sub-diaphragmatic Abscess and Empyæma, caused by Gastric and Duodenal Ulcers and by Tubercular Perinephritis." Dr. J. G. Blake will exhibit cases of Empyæma. Drs. F. C. Shattuck, Lyman, H. I. Bowditch, Doe, Cabot, Garland, and others are expected to take part in the discussion.

A. L. MASON, M.D., *Chairman.*
ALBERT N. BLODGETT, 138 Boylston St., *Secretary.*

BOSTON MEDICAL ASSOCIATION. — The Annual Meeting will be held at the rooms of the Boston Medical Library Association, 19 Boylston Place, Monday, May 6, 1889, at 4 P.M.

W. D. HODGES, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

On Myoma and Fibro-Myoma of the Uterus and Allied Tumours of the Ovary. By Alban Doran. London: 1888.

A Contribution to the Study of Muscular Tremor. By Frederick Peterson, M.D. Reprint. New York.

Further Contribution to the Study of Consumption among the Indians. By Washington Matthews, M.D., LL.D., United States Army.

Physician's Leisure Library. The Etiology, Diagnosis and Therapy of Tuberculosis. By Prof. Dr. H. Von Ziemssen. Translated by David J. Doherty, M.D. George S. Davis, Detroit. 1889.

Alcoholism and Pulmonary Consumption. By Thomas J. Mays, M.D., Professor of Diseases of the Chest in the Phila. Polyclinic, and College for Graduates in Medicine. 1889.

Acute Lobar Pneumonia in Children. By Charles W. Townsend, M.D., Boston. Read before the Suffolk District (Massachusetts) Medical Society, October 27, 1888. Reprint. 1889.

The Control and Care of Pauper Inebriates of Towns and Cities. By Lewis D. Mason, M.D., Consulting Physician Inebriates Home, Fort Hamilton, N.Y. 1889.

The Diagnosis and Treatment of Extra-uterine Pregnancy. By John Strahan, M.D., M.Ch., etc., etc. Jenks Prize Essay of the College of Physicians of Philadelphia. Philadelphia: P. Blakiston & Co. 1889.

Twenty-eighth Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati, for the Fiscal Year ending December 31st, 1888. P. Alfred Marchand, Custodian Cincinnati Hospital Library. T E. H. McLean, Superintendent. Cincinnati. 1889.

Handbook of Physiology. By W. Morrant Baker, F.R.C.S., Surgeon to St. Bartholomew's Hospital, etc., and Vincent Dormer Harris, M.D., Lond., F.R.C P., etc. 12th Edition, rearranged, revised, and rewritten, and with 500 Illustrations. New York: William Wood & Co. 1889.

A Manual of Diseases of the Ear, for the Use of Students and Practitioners of Medicine, By Albert H. Buck, M D., Clinical Professor of the Diseases of the Ear in the College of Physicians and Surgeons, New York; Consulting Aural Surgeon, New York Eye and Ear Infirmary. 420 pages. Illustrated. Price, extra muslin, $2.50. New York William Wood & Company.

Materia Medica and Therapeutics for Physicians and Students. By John B. Biddle, M.D., late professor of Materia Medica and General Therapeutics in the Jefferson Medical College, Philadelphia. 11th Edition, revised and enlarged, with special reference to Therapeutics and to the Physiological Action of Medicines, by Clement Biddle, M D., U S.N., and Henry Morris, M.D. With numerous illustrations. Philadelphia: P. Blakiston & Co. 1889.

The Illustrated Optical Manual or Hand book of Instructions for the Guidance of Surgeons in Testing Quality and Range of Vision, and in Distinguishing and Dealing with Optical Defects in General. By Surgeon General Sir T Longmore, C.B., F.R.C S., Honorary Surgeon to the Queen, etc. Fourth Edition. Enlarged and Illustrated by Seventy-four figures from Drawings and diagrams. London: Longmans, Green & Co. 1888.

Address.

THE PLANS AND PURPOSES OF THE JOHNS HOPKINS HOSPITAL.[1]

BY JOHN S. BILLINGS, M. D.,
Surgeon U. S. Army.

The third paragraph of the letter of instructions communicated by Johns Hopkins to the trustees whom he had chosen to carry out his plans for a hospital in the city of Baltimore, states that "it is my wish that the plan . . . shall provide for a hospital which shall, in structure and arrangement, compare favorably with any other institution of like character in this country or in Europe." What do you suppose the writer was thinking of when he penned that sentence? Had he in view any definite ideal, any mental picture of the institution which he proposed to establish, or was it merely an expression of a desire to give to his city the best thing that could be devised? I have read that letter many times, have heard much of the ideas, hopes, and wishes which were expressed in the numerous conversations which preceded its preparation, and it seems to me that the writer had an ideal, and not a mere vague desire — an ideal which was no doubt somewhat misty, but which did not correspond to any existing hospital, and one which he did not attempt to define except in a few prominent points to which I shall presently refer. In most respects Johns Hopkins took the same course with his hospital which he did with his university, and deliberately refused to trammel with specific directions those whom he had chosen to carry out his plans; but this letter of instructions indicates, nevertheless, a conception of much more definite character, and one which had been the subject of more discussion and reflection, than his scheme for an university. Whether this be so or not, I am at all events sure that his trustees have endeavored to comply with this letter of instructions, and to do so in the broadest and best sense of the words.

The beginning of the results we have before us to-day; results which even now are not confined to these particular aggregations of bricks and mortar, as will be presently explained, and the end of which will be, as we hope and believe, to make life happier for millions now living and yet unborn. Only those who took part in the early deliberations of those charged with this trust can fully realize the anxieties, the doubts, the manifold perplexities which at first attended their decisions and movements. Only one or two of them had any knowledge of hospital matters; most of them were business men, bankers, lawyers, judges, railway managers, men who knew something of the management of men and money, but who were now brought face to face with a new problem, viz., how to build, organize, and manage a hospital so that it should compare favorably with any other hospital in this country or in Europe.

To "compare favorably with," what does that mean? It is a peculiar phrase, which, coming from a shrewd business man and a member of the Society of Friends, signifies, I think, to excel if possible; at all events that is the safest interpretation. And it was not this or that hospital which was to be surpassed or equalled, but all other hospitals in this country or in Europe; Africa, Asia, and Australasia being put out of the question. It was a large contract.

The location was fixed — that had been done by Johns Hopkins, but they had to decide whether the structures to be erected should be temporary or permanent, of wood, brick, or marble, in one large building or in many, and many other like points, before even the preparation of plans could be commenced. They followed the instructions of the donor and got advice, of which a great abundance was available. They visited the large hospitals of our Eastern cities, employed five men, supposed to be skilled in hospitals, each to write an essay giving his plans and suggestions, published these essays in a book which had a wide circulation, and studied the criticisms and reviews to which this book gave rise.

Having duly considered the multifarious and widely divergent suggestions thus obtained, they finally selected one of the essay writers and asked him if he was satisfied with his own plans now that he had seen the others and the published criticisms upon them. He promptly said that he was not, whereupon they asked him to try again and do better. He set to work, aided by the architect of the board, and the result was a set of sketch plans which he took abroad and obtained much counsel and criticism on, examining at the same time the model hospitals of Europe. He was much less satisfied with the sketch plans when he came back than he was when he started, and again the building committee, the architect, and himself reviewed the whole matter, and finally settled on the general arrangement which you will see to-day. Many details remained to be worked out; even the façades had not yet been designed; but the general scheme was settled, and the rest was comparatively easy for the time being.

Let us now for a few moments consider the broad general principles which governed the trustees in the adoption of this plan. The first hospitals were established to give shelter and food to the sick poor, especially those who gathered in cities. Gradually physicians found that they could learn much in these aggregations of suffering, and that they afforded the means of teaching others; but this last use of them is only about two hundred years old. Gradually, also, it came to be known that the knowledge thus obtained in the care of the sick poor was of use in treating the diseases of the well-to-do; and finally, within the last twenty-five years or so, people are beginning to find out that when they are afflicted with certain forms of disease or injury they can be better treated in a properly appointed hospital than they can be in their own homes, no matter how costly or luxurious these may be. In the hospital they can have not only all the comforts of home, but more; not only skilled medical attendance and skilled nursing, but the use of many appliances and arrangements specially devised for the comfort and welfare of the sick which can hardly be found in any private house, and also freedom from noise and many petty annoyances, including in some cases too much sympathy and in others too little.

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[1] An address delivered at the opening of the Hospital, May 7, 1889.

This hospital, then, is to provide for the rich as well as for the poor; for those who can, and ought to, pay for the help given, as well as for those who cannot.

A second cardinal principle to be observed in such a hospital as this, is, that it shall do as little harm as possible. A hospital may do harm by its foul air, by spreading contagious disease among its inmates, by neglect or carelessness of its nurses or attendants; and in years gone by hospitals have, no doubt, caused nearly as much sickness as they have relieved. This is now rarely the case, and in this hospital the arrangements for ventilation, isolation, and nursing are such as to entirely do away with this danger. There is another danger connected with free hospitals and dispensaries which is of quite a different kind and to which I can here only allude, namely, the danger of promoting negligence, shiftlessness, laziness, and vice by offering free relief from their consequences — the danger of pauperizing people. This is a danger connected with organization and management rather than with construction, and I can only say here that it has been foreseen and will be, as far as possible, guarded against.

The third principle to be kept in view in such a hospital as this, is, that it should provide the means of giving medical instruction, for the sake of the sick in the institution as well as of those out of it. It is well known to those familiar with the subject that the sick in a hospital where medical instruction is given receive more constant, careful, and thoughtful attention than do those in a hospital where no such instruction is given. The clinical teacher must do his best; keen eyes will note every error in diagnosis, every failure in results of treatment. Moreover, the very act of teaching clarifies and crystallizes his own knowledge; in attempting to explain, the dark places become prominent and demand investigation, and hence it is that those cases which are lectured on receive the best treatment. I need say nothing here on the other side of the question, the value of properly trained physicians to the community and the necessity for hospital instruction in such training; Johns Hopkins understood all this, and specially directed that "in all your arrangements in relation to this hospital you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the Medical School of the University."

Now there are medical schools and medical schools, and in obeying this direction of the donor the trustees had to consider what sort of a medical school this school of the University was likely to be. As the majority of the trustees were also trustees of the University, they knew well the principles which underlie the organization of that institution, and that the same principles would govern the organization of the medical department when that came to be taken in hand. One of these principles is the thorough teaching of that which is known, another is to increase that which is known, and to furnish the men and means for doing this. So also the hospital should not only teach the best methods of caring for the sick now known, but aim to increase knowledge and thus benefit the whole world by its diffusion. Another point which had to be kept in view was the direction of Mr. Hopkins that there should be established, "in connection with the hospital, a training school for female nurses, not only to care for the sick in the hospital but to benefit the whole community by supplying it with a class of trained and experienced nurses."

It is also highly desirable that a hospital of this kind should have connected with it a well-appointed dispensary for the treatment of those who need medical aid but not a bed in the hospital. Through such a dispensary much good can be done at small cost, the selection of proper patients for the hospital is facilitated, the means of medical investigation and teaching are greatly extended, and the scope of the nursing system can be made to reach the poor and ignorant in their own homes.

The last point to which I shall refer, which was kept in view by the trustees in deciding upon the plans, was the general appearance of the buildings and grounds.

Mr. Hopkins gave no specific directions as to the buildings, but he directed that the grounds should be properly enclosed by iron railings, and so laid out and planted as to be a solace to the sick and an ornament to the city, and it was evident that the buildings should be of the same character so far as their purpose would admit. It was therefore decided that, while no utility should be sacrificed for the sake of architectural ornament, and the main purpose which I have referred to should be fully worked out in the plans before any attention was paid to external appearance, it was fit and proper that the buildings should form an ornament to the city, and a suitable monument to the memory of the donor.

Bearing in mind, then, these main principles, to provide for the proper care of the sick, both rich and poor, to provide for the highest class of medical education, to increase and diffuse knowledge, to provide trained nurses for both hospital and city, to provide a dispensary, and to make the buildings and grounds ornamental and attractive, let us see how the problem has been thus far worked out.

I will begin with the arrangements for securing that article of prime necessity in a hospital, viz., pure air. Air-supply and ventilation in this climate are inseparably connected with heating for a considerable portion of the year, for comfortable warmth must be secured, and on the means of doing this must largely depend the methods of ventilation and their success. The temperature of Baltimore may vary from 103° in the shade to 17° below zero F., hence its perfect hospital must be one which would answer for the tropics or for Northern Russia. To secure this, double walls, with air spaces, were given to the buildings, and a system of heating by the circulation of hot water was adopted for the wards. This system consists of central boilers, from which flow and return pipes extend beneath every building, connected with heating coils, of which there is one for every two beds in the ward above. The temperature in these coils can be exactly regulated to any temperature between 150° F. and the temperature of the external air by simply regulating the velocity of the flow of water by the valves attached to each coil, and thus it is quite possible to give one pair of beds a temperature of 70° and another pair in the same room, at a little distance, a temperature of 60° F., to suit the needs of different cases. The 80,000 gallons of water contained in this heating apparatus go round and round, carrying heat from the furnaces to the wards, but every building has its own independent means of ventilation, and it is not possible to go from one ward into another without going into the open air on the way, so that foul air, if any forms, cannot spread from one building to another. Nevertheless, the buildings are so connected by corridors and underground tunnels that in passing from one to another there is no exposure to rain or snow, and the least possible to cold air, while the food is not exposed at all. This is not the place to describe the ventilation. I will only call your attention to the fact that the temperature of the incoming air by any bed is easily changed by turning a valve, while the quantity of air is not changed; to the arrangement for taking foul air from either the bottom or top of the ward, or from both, and to the fact that all this has been thoroughly tested during two winters and found to give the results hoped for.

One of the peculiarities of the wards is that all the service rooms are collected at the north end, leaving the south end free of obstruction and fully exposed to the sun, the end of the ward being a large bay window looking out on the central garden, and with a floor which can be warmed so that the patients, able to sit there, can be thoroughly comfortable. Another peculiarity of the sick wards is the arrangements for easy cleansing, and to prevent possible accumulations of dust in corners and crevices. Corners are to a great extent done away with, and easy curves given in their place; even at the junction of the floor and walls there is a curve instead of the usual right angle, and I advise you to look at it and see how it has been produced, for it ought to become fashionable, and take the place of the old mop-board in all well-constructed houses. So, also, the doors have not the usual moulding about the panels, giving recesses which it is almost impossible to clean.

One of the wards is especially arranged for cases which may be either contagious or offensive. In this building each patient is in a room by himself, and all these rooms open into a corridor through which the wind is always blowing. There are many details about this isolating ward which are worth looking at, but which I have not time now to refer to, and I must omit details about the pay ward, the octagon ward, and the peculiar fittings and conveniences of the kitchen, laundry, apothecaries' building, etc., for the same reason.

Let us pass now to the second object of the hospital, the giving means for higher medical education, and see what has been done for that. In the first place, there is a large amphitheatre with appended rooms for the reception of accidents and emergencies of all kinds. In the second place, provision is made for at least thirty students to reside constantly in the hospital and devote themselves under proper guidance to the study of disease and the practical care of the sick. It is intended that these places shall open only to those who have had a thorough previous training, and who have shown themselves to be fitted to undertake this important part of their studies. As a rule, not more than five per cent. of medical graduates have had any opportunities worth speaking of to study and treat diseases in the living man when they receive their diplomas. They have to get this experience on their first patients, and sometimes the experience is rather hard — for both doctor and patient. This hospital has provided for the class of the medical school in the last year of their studies good rooms, with bath-rooms, a dining-room, and other conveniences, and here they can be taught the actual daily work of a physician, for which all their previous studies are only preparatory. Many of the arrangements of the hospital have been constructed with reference to this instruction; it is a great laboratory for teaching the practical applications of the laws of hygiene to heating, ventilation, house drainage, and other sanitary matters. All pipes and traps are either exposed to view or can be seen by merely opening a door, and in the tunnel beneath the corridor you can study at your leisure the complicated and yet simple arrangement of pipes for gas, steam, water, sewage, etc., which are usually buried and remain a profound mystery to every one except the plumber, and often puzzle even him.

Closely connected with this subject of teaching is that of increasing our knowledge of the causes, symptoms, results, and treatment of disease; in fact, one cannot be thoroughly and well done without the other, and hence many of the provisions for the one are also useful for the other. For example, to go back to our system of heating and ventilation: there are many points connected with it which are destined for experimental work, to compare steam with hot-water heating, to determine the velocity of water at different temperatures, to compare ventilation by aspiration with that by propulsion, or by upward currents with those drawn downward.

One structure is very largely devoted to and fitted for experimental research, and that is the pathological laboratory, where the causes, processes, and results of disease are to be studied. Upon the results obtained in that laboratory may yet depend the saving of many lives, the relief of unspeakable agony, the warding off of pestilence from the city, and, to put it in a strictly business light, the value of real estate and the rate of taxation of this community. We are on the verge of great advances in our knowledge of the causes and methods of disease, and I feel sure that these will be only preliminary steps to far greater and better knowledge of how to prevent or to treat them than we now have. The probable length of life of the new-born infant to-day is not much more than half what it ought to be; the practical productive period of the life of our men and women is shortened and interrupted by unnecessary disease and suffering; but remember, if these things are to be amended, it is not merely by teaching old doctrines; we must open fresh windows and let in more light, so that we can see what these obstacles really are. It is in this work of discovery that it is hoped that this hospital will join hands with the university, and it is in this hope that some of the structures around you have been planned and provided.

A word now on the fourth object kept in view in this hospital, viz., the Training School for Nurses.

Some of you probably have had some personal experience of the difference between an educated, properly trained female nurse, and one of the old-fashioned sort, but if you have not, it would take much more time than I now have to describe it. I can only say, that in many cases a competent trained nurse is as important to the success of treatment as a competent doctor, and that one of the greatest difficulties in treating well-to-do patients in their own homes in this city is the want of proper nurses. Affection and zeal may do much, but they cannot take the place of knowledge, and this kind of knowledge is not to be acquired in a day or in a month. It is a work best carried out by women, though not one woman in ten is fit for it, or should undertake it. But the woman who is fit for it, who has physical health and strength, sound sense, loving-kindness, patience, and tact, and who has been thoroughly taught the art of nursing the sick, with all its thousand details, has the power of doing good and increasing happiness to a degree which few others possess. In a properly conducted hospital ward she is a necessity, but her field of usefulness and helpfulness is by no means limited to that. She is needed outside the hospital, in the home of the rich, to nurse and care for the sick; in the home of the poor, to teach prevention as well as nursing. To gather here such women, to have them thoroughly instructed, to furnish them with the attractive and comfortable home which they deserve, and to send them where they are most needed, with provision for their return when the work is done, is the object of the training school of this hospital.

For this purpose the trustees have provided a large and handsome building, separated from the others, and exclusively appropriated to the female nurses, where each can have her own comfortable room, and where a common parlor, library, dining-room, bath-rooms, and, in short, the arrangements of a first-class hotel, are provided for their use. Here also is a training-kitchen and a lecture-room to aid in the work of instruction. The intention is that when the nurse has finished her six or eight hours' tour of duty with the sick, she shall come quite away from the ward and all that pertains to it, and take her rest and recreation in a totally different atmosphere, and special effort has been made to have this home attractive and pleasant.

The fifth object which I mentioned as having been kept in view in the plan and construction of these buildings is the dispensary. This is a large building on the north front, consisting of a large central waiting-room, surrounded by a number of smaller rooms for the use of the physicians and surgeons who are to examine and prescribe [illegible] the patients, and having bath-rooms, and a small apothecaries' establishment for the issue of the medicines ordered. This building is connected with the amphitheatre by a short covered corridor, and is specially arranged with reference to teaching. It, as well as the amphitheatre, is heated by steam instead of hot water, partly because they are not in constant use, and a rapid means of warming is desired, partly for the purpose already referred to of giving the means of experimental comparison of the two systems. The means of supply of fresh warm air in these two buildings, and of removing the air made impure by exhalations, are somewhat peculiar, and merit examination.

With regard to the architectural design and external appearance of the buildings, and the laying out and ornamentation of the grounds, I can only say that you must see and judge for yourselves whether Mr. Hopkins' wish that they should be an ornament to the city has been successfully complied with. So far as external ornamentation is concerned, it is confined almost entirely to the large buildings on the west, or Broadway front, which it was felt should harmonize in style of decoration. These central buildings, consisting of the administration, with the one pay ward on either side, are constructed of pressed brick with ornamentation of a dark-blue, fine-grained, hard, and durable stone, known as Cheat River stone, and of moulded terra-cotta of the color of the brick. The external designs for these, as for all the other buildings, were furnished by Messrs. Cabot and Chandler, of Boston, and I think we have good reason to be well satisfied with the results they have produced. The grounds are laid out and planted in accordance with designs furnished by Mr. E. W. Bowditch, of Boston.

As regards construction, I do not hesitate to affirm that these are the best-built buildings of their kind in the world. The material is the best, the most skilled and careful workmen were employed, and, above all, the work received the most careful, conscientious, and intelligent supervision as it progressed. For this supervision we are indebted to Mr. John Marshall in the beginning, and to Mr. William H. Leeke for the remainder and conclusion of the work; and we are also indebted to the latter for many valuable suggestions as to modes and details of finish which are so important in a hospital. The details of the complicated and extended system of heating, ventilation, and plumbing were designed and the work executed by Messrs. Hayward & Co., of this city. I should like to go on and mention a number of other names of persons who have done good work here, but want of time forbids. I will only say that these buildings embody the counsels and suggestions of many men and women in this country and abroad, but among them all there is no one, from the very beginning of the conception of the idea of this magnificent gift in the mind of Johns Hopkins down to this present moment, who has had more to do with shaping the results, who has furnished more valuable suggestions, who is more thoroughly acquainted with all that has been done, and why it has been done, who has worked so unselfishly, and who more deserves honor in this connection, than the president of the board and chairman of the building committee through the whole progress of the work, Mr. Francis T. King.

Briefly and incompletely as I have sketched these salient points of the plans and purposes of this hospital, I hope I have, nevertheless, shown you that it is intended for other purposes besides providing shelter, food, and drugs for the sick. In saying this I have not the least wish to undervalue or disparage those institutions which do make this their main or only object. There is abundant need of their existence and work also; but this institution should not be judged by the rules which apply to them; it cannot be managed after their fashion: if it does not produce results different from theirs it is a failure and the expenditure upon it a mistake.

Thus far I have been speaking of the buildings only, and trying to give you some idea of the motives which led to their being as they are, and what they are, and not otherwise. From the beginning, however, it has been recognized that the buildings and machinery are only means to an end, tools which must be handled by skilled workmen to produce the desired result; and throughout all these years of planning and building, the question of organization and of the sort of men and women who were to use and work with these things has not been lost sight of. It is true that no attempts were made to select and engage individual members of the hospital staff until quite recently; but there was, nevertheless, a tolerably definite conception as to the ideas, mode of work, character, and wants of those who are to constitute this staff, and when the time came for selecting, it was made by this standard.

On the philanthropic, social, and religious aspects of this great trust I do not propose to touch, but I wish to say a very few words of the hopes and wishes of scientific men and physicians with regard to it. From the time of the first announcement of the Hopkins bequest to the present, these men, all over the world, have been keenly interested in the plans and methods adopted in carrying them out. Whenever and wherever the problems of higher medical education have been discussed within the last ten years, there has been speculation as to the probable course of the Johns Hopkins medical department, and the influence it would have upon the standard. I may even say that some of this influence has been exerted in advance, has been discounted, as it were; for the plans of this hospital have stimulated changes in some of our best medical schools, and have been copied with more or less modification in some of our latest hospitals.

What is it, then, that the physicians want? Is it more physicians, more family practitioners, more surgeons, more specialists? Not at all. They know very well that there is no danger that the supply will not be equal to the demand; when they become overburdened with practice they do not at present find it difficult to obtain assistants; they have no fear lest the seventy or eighty medical schools of this country should fail to produce a sufficient number of medical practitioners to meet the wants of our increasing population; and they know also that medical schools of Great Britain and Germany are sending to us quite as much of their product as we can conveniently dispose of. They hope that the Hopkins medical school and hospital will do two things. The first is, that it will demand of those who propose to become its students evidence that they have a sound basis of preliminary education before they commence, and that its standard in this respect shall be little below that of the requirements for granting the degree of bachelor of arts in the university. It is hoped that the men thus selected will go through a carefully graded course of study, including actual work in properly fitted laboratories, and that after this they will be brought into contact with the sick, and thus obtain practical experience of the duties and responsibilities of the practitioner of medicine before they offer their services as such to the public.

So much our physicians desire of every medical school, for the sake of the honor and dignity of the profession, and for the good of the public, and they desire especially that this school shall form an example to which they can point as showing how medical education should be conducted, and what should be required of the candidate for the degree of doctor of medicine.

The very general interest in the combined Hopkins trusts felt by physicians and scientific men not only of this country but of the whole civilized world, is largely due to the belief that the relations which will here exist and be maintained between the university as a whole and its medical department, of which this hospital is to be an important part, will be close and intimate, so that the true university spirit will pervade, stimulate, and encourage the hospital work. In this country medical schools have either had no connection with universities properly so called, or the connection has been slight and nominal, such as depends upon the formal conferring of medical degrees by the university. Here, however, through the influence of the biological department, there are secured common interests and mutual influence, and it is hoped, therefore, that the necessary details of technological instruction will be arranged in accordance with and subordinate to the broad principles of scientific culture upon which this university is organized.

It is because it is believed that this will be the case that there is a wide-spread hope and expectation that these combined institutions will endeavor to produce investigators as well as practitioners, to give to the world men who can not only sail by the old charts, but who can make new and better ones for the use of others. This can only be done where the professors and teachers are themselves seeking to increase knowledge, and doing this for the sake of the knowledge itself;—and hence it is supposed that from this hospital will issue papers and reports giving accounts of advances in, and of new methods of acquiring knowledge, obtained in its wards and laboratories, and that thus all scientific men and all physicians shall share in the benefits of the work actually done within these walls. But however interesting and valuable this work may be in itself, it is of secondary importance to the future of science and medicine, and to the world at large, in comparison with the production of trained investigators, full of enthusiasm, and imbued with the spirit of scientific research, who will spread the influence of such training far and wide. It is to young men thus fitted for the work that we look for the solution of some of the myriad problems which now confront the biologist and the physician.

Do I seem to ask too much? to be too sanguine as to what human thought, and study, and skill may accomplish? to forget that there is one event unto all? that the shadow of pain and death comes on the wise man as on the fool? I have two answers. As surely as our improved methods of prevention and treatment, based on the advances in knowledge of the last fifty years, have already extended the average duration of life in civilized countries nearly five years, have prolonged thousands of useful and productive lives, and have done away with the indescribable agonies of the pre-anæsthetic period, so surely we are on the verge of still greater advances, especially in the prevention of infectious and contagious disease, in the resources of surgery against deformities and morbid growths, and in the mitigation of suffering due to causes which cannot be wholly removed. But the second answer is more important, and it is this: It is our duty to try to increase and diffuse knowledge according to the means and opportunities which we have, and not to rest idle because we cannot certainly foresee that we shall reap where we have strewn. "It is not incumbent on thee to finish the work, but thou must not therefore depart from it," says the Talmud, and "Of him to whom much is given much shall be required," says the Scripture.

To you, the officers of this institution, and to you, men and women of Baltimore, there is now given the opportunity of giving powerful aid in this increase and diffusion of knowledge of the laws of human life, disease, and death. Surely, those who are working in the wards and laboratories of the hospital and university will do their best; surely, also, the citizens of this great city of a great nation, which at no distant day will take the lead in scientific work, will encourage, sustain, and sympathize with these workers. I would have this hospital become famous, not for fame's sake, but because this will be evidence of the good work which has been done in it; but we must not be impatient. There are difficulties to be overcome, delays which must be submitted to. We cannot at once have the medical school which is essential to the plan which I have sketched; but there is plenty to do for the present, and I am certain that in time all these present obstacles to full development will be happily overcome.

Success in this, as in all other enterprises in this world, is to be obtained by unselfish work for the good of others, by wise counsel, by co-operation, and by persistent effort.

A hospital is a living organism, made up of many different parts, having different functions, but all these must be in due proportion and relation to each other, and to the environment, to produce the desired general results. The stream of life which runs through it is incessantly changing; patients and nurses and doctors come and go; to-day it has to deal with the results of an epidemic, to-morrow with those of an explosion or a fire; the reputation of its physicians or surgeons attracts those suffering from a particular form of disease, and as the one changes so do the others. Its work is never done; its equipment is never complete; it is always in need of new means of diagnosis, of new instruments and medicines; it is to try all things and hold fast to that which is good.

"Et quoniam variant morbi, variabimus artes."

It has been said that "hospitals are in some sort the measure of the civilization of a people, but a hospital of this kind should be more than an index. It should be an active force in the community in which it is placed. When the mediæval priest established in each great city in France a Hôtel Dieu, a place for God's hospitality, it was in the interests of charity as he understood it, including both the helping of the sick poor and the affording to those who were neither sick nor poor an opportunity and a stimulus to help their fellow-men; and doubtless the cause of humanity and religion was advanced more by the effect on the givers than on the receivers. It is the old lesson so often expounded, apparently so simple and yet so hard to learn, that true happiness lies in helping others; that it is more blessed to give than to receive.

In some respects we to-day have a much wider outlook than the men of a thousand years ago. This hospital is designed, as I have told you, to advance medical science as well as to give relief to the sick poor, but the fundamental motive is the same — to help others.

We have here the beginning of an institution which shall endure long after the speakers and the audience of to-day shall have finished their life-work and have passed away. Founded in the interests of suffering humanity, intimately connected with a great university, amply provided with what is at present known to be essential to its work, we have every reason to predict for it a long and prosperous career, with steadily progressing improvement in its organization and methods, and enlargement of its activity and influence.

Let us hope that before the last sands have run out from beneath the feet of the years of the nineteenth century it will have become a model of its kind, and that upon the centennial of its anniversary it will be a hospital which shall still compare favorably, not only in structure and arrangement, but also in results achieved, with any other institution of like character in existence.

— An addition to already tolerably ample grounds for divorce is claimed in Michigan, where a young bride, fifteen years of age, living in Michigan, after a marriage of thirty days, has entered the divorce courts, as we learn from the Chicago *Herald*, with the claim that at the time of the marriage her husband exercised a control over her which she could not resist, and without which she would never have consented to marry him. The presentation in the courts of this class of influence is a novelty, and the course which will be taken by the judge before whom the case will be tried will be waited for with a good deal of curiosity.

— There is a home for soldiers' orphans at McAllisterville, Pa. The inmates are boys from ten to sixteen years of age. Recently an epidemic "disease," characterized by inability to pronounce certain words or the substitution of incorrect words in their speech, broke out among them. It was diagnosticated as hysterical in character, and it was assumed that something was wrong with the diet or surroundings of the boys. They have now confessed that it was entirely put on for fun, and the doctors who discoursed of heterophemy, etc., are now smiled at.

The treatment proper for the affection will seem to be a spanking all around.

Original Articles.

TWO CASES OF PHTHISIS TREATED BY INTRA-PULMONARY INJECTIONS.[1]

BY VINCENT Y. BOWDITCH, M.D.,

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THE surgical treatment of lung cavities in phthisis by free incision of the chest-wall was, according to Pepper, suggested as far back as 1696 by Baglivi, and has since been resorted to occasionally, but it is only within a comparatively short period that injections of antiseptic substances through the chest-wall by means of an aspirating needle attached to a syringe have been resorted to.

In 1873 F. Mosler, of Greifswald, first reported two cases of phthisis in which he injected a weak solution of permanganate of potash into lung cavities without the slightest discomfort to the patient, and with subsequent improvement in many of the symptoms.

Since then various experiments have been made on both sides of the Atlantic, and the almost universal verdict is in favor of the operation as innocuous when carefully done, and as a means of greatly ameliorating many of the most distressing symptoms of the disease, even when no permanent cure has been effected.

In looking over the literature of the subject, the names of Mosler,[2] Rosenbusch[3] in Germany, Shingleton Smith,[4] Godlee,[5] and T. Sinclair[6] in Great Britain, Gougenheim[7] of Paris, and Wm. Pepper,[8] Beverly Robinson,[9] and John Blake White[10] in this country, appear most prominently.

In 1874 Pepper in two exhaustive papers published the results of a number of cases; a few years later Beverly Robinson gave another series of cases, and in 1886 John Blake White first speaks with enthusiasm of the same treatment in several patients under his care. The verdict of these three gentlemen being, while differing possibly in minor details, that the operation is one which can be resorted to with perfect safety, and is of the greatest service in many cases.

The usual substances injected have been either solutions of bichloride of mercury ($\frac{1}{2000}$, $\frac{1}{1000}$, and $\frac{1}{500}$) as suggested by Gougenheim, a mixture of camphor and carbolic acid as used by Shingleton Smith, iodine in the form of "Lugol's solution," or a mixture, the chief ingredients of which are iodine and carbolic acid, as suggested by John Blake White, whose formula I have used in the cases I am about to report.

So far as I know there are no reported cases in which this operation has been performed in our immediate vicinity, and through the courtesy of Dr. Bullard, who took charge of the first patient for whom I advocated this treatment, I have the pleasure of giving some striking results obtained in two cases occurring in our service at the Carney Hospital.

CASE I. D. L., man, twenty-four; single; waiter in hotel. Entered Carney Hospital January 12, 1888. Father and mother both died of phthisis when patient was a child. Two brothers living and well. Patient usually well. Malaria six or seven years before entrance. No syphilitic nor rheumatic history. Habits fairly good.

Four weeks before entrance noticed pain in the right back. Cough began about the same time with slight amount of dark-colored, sticky, apparently odorless sputa. No blood. Feverishness at night. Cough increased; sputa became thick, yellow, and scanty. Occasional night sweats. No dyspnœa nor palpitation. No marked loss of flesh or strength. Loss of sleep; constipation. No special loss of appetite. Lying on left side caused cough. At time of entrance patient was rather pallid and thin, with dark circles under the eyes. The breath had a distinctly gangrenous odor, noticeable several feet from the bed; likewise the sputa, which was greenish. Cough very troublesome. Slight flattening in the right infra-clavicular space. No special dulness, but a few very obscure moist râles heard in this region. None elsewhere. Respiration throughout rather faint but good. Urine at first normal. Later, contained $\frac{1}{8}$% albumen which soon disappeared.

℞ Liquor sodæ chlorinatæ, gtt. ij t.d. and a cough syrup.

January 23 (eleven days later). Slight improvement. After cough one-third of a cupful of thin, very fétid sputa was raised. Night sweat.

Percussion slightly higher pitched in right upper front and back with obscure crumpling. Breath very fetid, especially after cough.

℞ Atropiæ sulph. gr. $\frac{1}{60}$ at night. Liquor sodæ chlorinatæ increased to minims 15 t.d.

February 12 (one month after entrance). Patient losing ground rapidly. Cough troublesome. Breath at times very gangrenous.

Dr. Bullard, who then came on duty, recorded "diminished resonance in right front to level of nipple. Elsewhere normal. High-pitched breathing in right supra-clavicular space. From lower margin of first rib to second interspace on the right, respiration is bronchial from edge of sternum to one and one-half inches outwards. Expiratory murmur prolonged down to the fourth rib and to axillary line. Numerous coarse râles all over right front. Few subcrepitant râles in right supra-spinous fossa. Occasional râle in right back below. Elsewhere normal."

February 20. An examination of the sputa then and several times afterwards by the hospital pathologist, Dr. E. K. Dunham, showed no bacilli. Patient slightly better. Odor not quite so perceptible after using a vapor of phenyle in an Oliver inhaler. Cough still very troublesome.

March 4 (two months after entrance). After consultation it was decided to try an injection of "carbolized-iodine" into the lung, and fifteen minims of the following solution were injected by Dr. Bullard into the right apex, the needle of the syringe having been inserted in the second intercostal space, half-way between the mammillary and anterior axillary lines and pressed in to the depth of one and one-half to two inches: —

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Massachusetts Medical Society (Suffolk), March 13, 1889.

[2] Mosler, F. Berliner klinische Wochenschrift, 1873, No. 43.

[3] Rosenbusch, L. Wiener med. Presse, 1888, vol. xxix. pp. 87 and 865.

[4] Smith, R. Shingleton. Bristol Med.-Chir. Journal, October, 1888, vi. p. 185; do. September, 1885; London Practitioner, v. 42, p. 52; v. 38, p. 137; Transacts. Internat. Med. Congress, 1887, p. 195.

[5] Godlee, J. R. Lancet, 1887. i. pp. 457, 511, 666, 714.

[6] Sinclair, T. Dublin J. M. Soc., 1887, 3 s. lxxxiii. p. 497.

[7] Gougenheim. Bull. et mem. Soc. méd. d. hop. de Par., 1886, 3 s. iii. 9-16.

[8] Pepper, Wm. American Jour. Med. Sciences, July and October, 1874; Transacts. Am. Med. Assoc., 1880.

[9] Robinson, B. Phila. Med. Times, November, 1884; N. Y. Med. Record, 1885, v. xxvii. p. 29; N. Y. Med. Journ., 1885, v. xlii. p. 533.

[10] White, John Blake. N. Y. Med. Record, 1886, v. xxix. and xxx. pp. 593 and 536; Phila. Med. Times, 1886-87, xvii. p. 263; S. California Practitioner, 1887, ii. p. 208.

℞ Atropiæ sulph. gr. $\frac{1}{8}$; morphiæ sulph. gr. 2; tinct. iodi ℥ 3; acid. carbol., gtt. 20; glycerine ʒiss; spts. vini rect. (*dil.* 20–30 %) ℥iss.

No great pain nor discomfort except slight coughing was noticed. The odor of iodine was noticed immediately in the breath.

March 5. Patient felt better than any time before for two weeks. No pain; cough and expectoration decidedly less; odor greatly lessened.

March 6 (two days after operation). Odor wholly gone. Patient very comfortable. Unfortunately no physical examination is recorded at this time, although it was doubtless made.

March 11 (one week after first injection). As a slight fetor was again noticed a second injection was made in the same place without any uncomfortable symptoms.

March 21 (seventeen days after first and ten days after second injection). "Only a few subcrepitant râles can be heard in right supra-spinous fossa. Tickling in throat caused slight cough occasionally. Decided improvement in general condition. Up and about ward every day."

April 23 (one month and twelve days after second operation). "Patient gaining flesh. Some enlarged glands in left groin opened; escape of thin purulent fluid. Patient feeling nicely. Slight cough at night from tickling in throat."

May 16. Dr. Hugh Ferguson being on duty at the hospital, makes the following record: —

"Patient has gained much in flesh and strength. Slight diarrhœa lately. Occasional slight fetor of breath. Cough has increased. Obscure râles in second right interspace with slight dulness." A tonic of the citrate of iron and quinine was given about this time.

May 25 (two and one-half months after second injection). "Fetor of breath and cough have increased. Dulness, râles, and bronchial breathing in right second interspace with increased vocal fremitus. Râles all over right back."

The lung was again injected as before. Speedy relief from the odor. Cough and expectoration greatly diminished. Appetite improved.

Three days later slight fetor noticed by patient, the first since the injection.

June 1. Right lung again injected by Dr. Ferguson. Patient rapidly improved.

From this time there was a steady gain of strength and flesh (fifteen pounds in two weeks). The odor and tickling in throat disappeared entirely.

June 26 (five months and a half after entrance.) "No râles found in chest. Respiratory murmur somewhat tubular over site of cavity in right second interspace but otherwise nothing abnormal can be detected in chest."

Patient was discharged from the hospital feeling strong and well, and at my advice took a position in a hotel in Martha's Vineyard where he would get plenty of out-door exercise and not very hard work. Just after leaving the hospital he expectorated a slight amount of bloody sputa, but his cough entirely disappeared after this and he remained out of the city until the middle of September, when he resumed work here in a hotel. Unfortunately, in October, he for a short time got into rather dissolute habits, and on the 28th of November, when I next saw him, he showed the effects of his dissipation somewhat, but had had no cough since leaving the hospital, and was plump and apparently healthy. Physical examination showed slightly less percussion note in right apex. No definite râle heard anywhere except possibly an occasional faint dry click over seat of former trouble, and respiration was slightly tubular there and somewhat dull in the middle of right back, but no râle heard. Left lung free. A second examination a week or two later gave the same results.

December 27. Seen with Dr. Bullard. Patient stated that three days previously he noticed a slight cough with feverishness. Upon examination in the upper left back after cough, near the vertebral column a fine crepitation was noticed; no bronchial breathing; no change of voice. Temp. 102.4°; pulse 104.

He was told to leave work for a few days, and if not better to enter the hospital again, which he did very soon after, during my service. Since that time the patient has developed all the symptoms of pulmonary tuberculosis in the left lung. At different examinations marked and rapid consolidation was noticed in various portions of the lung, with evidences of softening later, at different points. At time of writing, the percussion note in the left apex is rather tympanitic; dull over the lower edge of the pectoralis major. The respiration at the apex is rather tubular, and over the region of dulness numerous moist râles are heard where at first bronchial breathing was noticed. In the left back respiration is rather bronchial in the upper portion and numerous coarse and fine râles are heard throughout the lower half. Bacilli were found in the sputa soon after his second entrance into the hospital. The temperature has been constantly elevated and the pulse rapid. Marked and increasing loss of flesh and strength.

Three intra-pulmonary injections have been made into the left lung since his last entrance without marked effect: the first early in January, the point of insertion being in the second intercostal space, corresponding to those made on the right side; the second, a few weeks later, in the fourth interspace, about in the anterior axillary line, and the third only four days ago, in the second interspace again, where signs of softening and cavity formation had begun. No marked change was noticed in the physical signs in the left lung after any one of the injections. A slight diminution of the cough and sputa was noticed after the first and third operations, and since the last the patient has felt better, but the general signs are those of a steadily increasing pulmonary tuberculosis. No inconvenience was experienced by the injection at any time. The signs in the right lung have remained unchanged until lately, when crumpling has been noticed in the middle of the right back.

Case 2. J. J. C., man; twenty-six; single; clerk in Boston. Entered hospital November 9, 1888, during my service.

Father died of phthisis at seventy-two. Mother of "liver complaint." Habits good. No venereal, malarial, or rheumatic history. Never ill until three months ago, at which time he took cold when down the harbor, and since then has had constant and distressing cough with mucopurulent expectoration, occasionally bloody. Rapid loss of flesh, and night sweats. Hæmorrhage two weeks before entrance. No appetite. No sleep owing to cough. Bowels regular. Micturition normal. Pulse 110; temp. 101° (P.M.). Examination showed marked emaciation, and general characteristics of advanced phthisis. Percussion revealed decided dulness in the upper right chest down to third rib; less marked, but noticeable, below this level. Down to third rib respiration was bronchial and amphoric, with numerous coarse bubbling râles; below, with a sharp line of demarcation between the two regions, coarse moist râles throughout right front were heard.

Dulness in upper half of right back with moist râles throughout. In the upper portion breathing was rather obscure. Questionable râles heard in left back between spine and angle of scapula. No other special abnormalities could be found. Patient was ordered extra diet, a cough syrup, the compound syrup of hypophosphites and whisky ℥ss t.i.d.

November 15. Losing ground. Complains of almost entire loss of sleep from cough and purulent sputa. I decided that it was a case in which an intra-pulmonary injection might be of use and it was done, the point of puncture being in the right second intercostal space, half-way between the mammillary and anterior axillary lines. Iodine was instantly detected in the breath; and for some time a severe fit of coughing with copious expectoration followed, not relieved by the inhalation of a few drops of chloroform or by a hypodermic injection of morphine. One hour later the pulse was very feeble and rapid and I feared the patient might succumb, but after giving tincture of digitalis and brandy he became very comfortable.

November 16. Patient passed the most comfortable night for weeks, sleeping soundly with scarcely any cough, etc., with markedly diminished expectoration. Looked and felt better than at any time since entrance. Took nourishment well. To my great surprise and pleasure, the moist bubbling râles noticed in the right upper chest before the operation had almost entirely disappeared and were replaced by a faint amphoric respiration. Below, the râles were markedly diminished in number. No special change in the back. The result was corroborated by my house officer, Dr. Gaffney, and by Dr. Bullard who had also previously examined the patient.

A small abscess near the anus was found and opened and about ℥iss of fetid pus was discharged.

From this date up to November 22 the patient was very much more comfortable; slept well and the cough markedly decreased. The percussion note in the right apex on the third day after the injection became high-pitched and tympanitic instead of dull as before, and the dry, amphoric respiration continued at this point. Below, front and back, the moist râles persisted, varying slightly from day to day.

On November 22 the cough had increased again and a few moist râles were again heard in the right apex; the respiration in the upper right back was rather amphoric.

The patient about this time was taken from the ward and put into a private room and given all the nourishing food possible. The pulse continued very rapid and the temperature high. Examination of the sputa for bacilli gave a negative result.

A second injection was made in the same spot, a hypodermic injection of 5 minims of a 5% solution of cocaine having been previously given at the suggestion of Dr. Monks, over the point of puncture. No special pain was experienced, and scarcely any cough followed.

The next day the patient complained of a constant taste of iodine, but was comfortable in other respects, although evidently failing. The sounds in the right apex were rather drier than before the operation. Elsewhere no special change noticed. After this the patient grew steadily weaker but suffered little from cough or otherwise, and died quietly December 3, 1888, three and a half weeks after entrance and nearly three weeks after the first operation.

Unfortunately, no autopsy was allowed by the friends.

Synopsis of first case. Man, aged twenty-four, with phthisical family history, suffering with an acute phthisical process in right lung; severe cough, fetid expectoration, increasing emaciation and loss of strength. Immediate improvement in all the symptoms after one intra-pulmonary injection in the right apex, the same phenomena occurring after three subsequent injections in an interval of three months. Complete arrest of disease and renewal of health for four months. Sudden appearance of tubercular disease in left lung at the end of this time. No apparent relief from three injections into left lung. Rapid failure up to present time.

Synopsis of second case. Man, twenty-six. Acute and far-advanced case of phthisis. Evidence of large cavity at apex of right lung, with general infiltration below. Very great relief from severe cough and expectoration by two injections into the right apex at an interval of a week. Marked change in the physical signs at the point of injection within a few hours after operation. Death three and one-half weeks after entrance.

What have we learned from these two cases? In the first, I do not think there is a shadow of a doubt in the mind of any of those who saw the case that the injections were the chief cause of the arrest of the disease during the patient's first stay in the hospital last year. The almost immediate disappearance of the most distressing symptoms and the equally apparent improvement in the general condition after each of the four injections, were quite sufficient to have convinced the most sceptical as to the efficacy of the treatment at first, even though, four months later, disease appeared in the other lung, and the same treatment seemed to fail in the desired effect. The question arises as to how far this result could have been prevented had the patient not led a dissipated life for two or three weeks previous to his second illness, and had he lived away from Boston in the open air instead of being confined in the close, vitiated atmosphere of a hotel restaurant in the city. No one, of course, can say, but from experience we are justified in thinking that under proper conditions a recurrence of the disease possibly might not have occurred.

As to the second case: the extraordinary change in the physical signs shortly after the operation, showing a drier condition of the cavity in the right lung, and the marked relief from the most harassing cough and loss of sleep, were such that in any similar case I should most unhesitatingly advise the same treatment, even had I no hope of a permanent cure.

That intra-pulmonary injections would be of use in any or every case it would be folly to presume, but the comparative ease of the operation should encourage us to resort to this method without fear, in what seem to be appropriate cases.

SOME RARER FORMS OF MOTOR NEUROSES OF THE STOMACH.[1]

BY G. LIEBMANN, M.D.

There are a number of disorders of the stomach which furnish a clinical picture to the observer and still rest on no anatomical basis. These cases offer no characteristic symptoms indicative of the presence of any of the more serious organic affections (such as ulcer, carcinoma, dilatation, catarrh), and we are therefore justified in the supposition that they are in a large measure due to some *nervous* and above all to *mental causes.* These cases constitute the neuroses of the stomach, and we distinguish the following forms: —

1. Motor neuroses.
2. Secretory neuroses.
3. Trophic neuroses.
4. Sensory neuroses.
5. Reflex neuroses.

The nerves supplying the stomach are the pneumogastric and splanchnic nerves. There is no doubt that each irritation of the vagus causes a powerful contraction of the stomach, and especially the pylorus, while each irritation of the splanchnicus relaxes the wall of the stomach and dilates the pylorus. Besides these two distinct nerve sources Oser assumes independent ganglia for the stomach from the fact that after section of the vagus and splanchnicus there are still contractions of the stomach.

The cardia is enervated like the pylorus by both the vagus and splanchnicus.

Hence we have to deal with neuroses

(1) Of diminished motility,
(2) Of increased motility,

in just proportion to the undue irritation of either of the said nerve supplies. Under the heading of *diminished motility* may be classed

(*a*) The paresis of the whole stomach (gastroplegia).
(*b*) The paresis of the cardia (insufficiency of the cardia).
(*c*) Paresis (insufficiency) of the pylorus.

To the class of neuroses with *increased motility* belong: —

(*a*) Spasm of the cardia.
(*b*) Spasm of the pylorus.
(*c*) Peristaltic restlessness of the stomach.
(*d*) Vomitus nervosus.

Gastroplegia. — This is a paresis, not of the cardia or the pylorus only, but of the whole stomach, the entire muscular wall being involved. The result of this paresis is always dilatation of the stomach. The muscular insufficiency gives rise to a stagnation and accumulation of the contents, and this in turn to enlargement of the organ. The diagnosis of gastroplegia is difficult to make. It should, of necessity, be founded upon repeated examinations as to the length of time the contents remain in the stomach. This the stomach-tube will settle. As regards the ætiology of the disorder, all affections of the central nervous system in general and of the splanchnicus in particular are regarded as responsible; besides, there is another — not nervous — factor in the production of the paresis, and this is, organic disease of the wall of the stomach. A chronic catarrh gives rise to an occasional muscular weakness in a similar manner as a catarrh of the larynx produces paresis of the laryngeal muscles. The treatment should consist in the repeated siphonage of the stomach and faradization of the fundus.

Paresis (insufficiency) of the Cardia. — Of this variety rumination (meryism) is the most conspicuous symptom. The cardia being incompletely closed and peristalsis rather exaggerated, the contents of the stomach rise. At first there is but an occasional eructation of food, but soon all the ingesta rise, are swallowed again, and this process of alternate rising and swallowing of the food often continues for quite a while. There are, of course, graver and milder cases. The mild cases are curable and do best under a dry diet. A firm, energetic will on the part of the patient is of great help in the treatment.

Paresis of the Pylorus; Insufficiency of the Pylorus. — This is the most interesting of the group. The pylorus being insufficient, there is naturally *more or less free intercommunication between the stomach and duodenum.* That digestion and assimilation suffer severely under such circumstances goes without saying. Many a case, treated for catarrh or dilatation of the stomach, and losing strength and flesh to an alarming degree, belongs to this category. Of ætiological factors are again to be mentioned all the grave disorders of the nervous system, central and peripheral, and, above all, hysteria.

That there is insufficiency of the pylorus is easily ascertained by the administration of carbonic acid (a few grammes each of bicarbonate of soda and tartaric acid should be given in succession). *The gas will inflate not only the epigastrium, but the hypogastrium as well,* a proof that it passes from the stomach into the duodenum at once and that the pylorus is insufficient. This test should be repeated at different times, in order to arrive at a sure and safe diagnosis, for the insufficiency might be but temporary.

One case of this order I saw in Vienna, but cannot say that much has been achieved in the way of treatment.

II. NEUROSES WITH INCREASED MOTILITY.

Spasm of the Cardia.— Painful contraction of the cardia is not infrequent. Its time of occurrence is after a meal. Thus it happens that, two to three hours after a hearty meal, the stomach would rather burst than allow a portion of air to escape. Moreover, the pylorus frequently participates in the spasm and the result is that the stomach is inflated like a balloon.

This shape of the stomach and pain at the site of the cardia insure the diagnosis.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Massachusetts Medical Society (Suffolk), March 13, 1889.

Besides, the meeting with a resistance, at the cardia, of a tube introduced is a valuable adjuvant.

Treatment: the spasm is to be gradually overcome by the hard tube; this will do *pro re nata;* but the main attention should be directed to the removal of the primary trouble, such as neurasthenia, hysteria, etc.

Spasm of the Pylorus.— This spasm is not quite so rare; in fact, it accompanies every insult of the stomach. A man swallows a piece of tainted meat; he becomes sick; after seven to eight hours the *corpus delicti* has not yet passed the stomach. How can we explain this except by assuming a spasmodic closure of the pylorus? Also hyperacidity and ulcer of the stomach may by irritation induce spasm of the pylorus. Moreover, mental emotions cause the same trouble, and through it retention of the food for seven to eight hours.

Peristaltic Commotion of the Stomach (peristaltische Unruhe (Leyden).—This complaint, as a rule, is peculiar to women. A wavy movement of the stomach characterizes it. This may be felt and seen through the integuments. There is belching, and, besides, a gurgling, seething-like sound in the intestines (chorea intestinalis).

Should these symptoms occur but occasionally — as, for instance, soon after a meal — they would not amount to much. But their continual presence constitutes disease. The neurotic nature of the disorder is best shown by its emotional origin. It is difficult to cure. The concomitant constipation will not yield to cathartics; enemas do better; charcoal tablets relieve the great distress from gases; and rest and nervina, as the bromides, valeriana, give additional comfort.

Nervous vomiting (vomitus nervosus). — This is a reflex neurosis, and must be due to the irritation of a centre of vomiting. It accompanies serious brain diseases (meningitis, tumors, abscess, etc.), but is rarely met in diseases of the spine.

While cerebral trouble causes motor reflexes, spinal diseases cause sensory disturbances of the stomach, such as gastralgia, hyperæsthesia, tabetic gastric crisis, etc. Besides the nerve centres other organs frequently set up nervous vomiting: they are, as is well known, pre-eminently the uterus, (vomitus gravitatis), the kidneys (nephritic colic), the bowels (obstruction). A main characteristic of the nervous vomiting is the whimsical feature about it. It occurs without a warning on the part of the stomach, lasts for hours and days, to stop as abruptly as it came; the vomiting itself is, as a rule, easy, not associated with much nausea; the vomit contains little of butyric acid, is not offensive, and the food is digested (difference from catarrh). To make sure of the diagnosis, we have to take into account the state of mind of the patient, whether or not there is trouble with the uterus, the kidneys, the bowels, and so on.

Treatment comprises the removal of the causes, if practicable; but often we are unable to find the cause, or at least the remedy for it, and then we resort to remedies which have won some repute as antiemetics. Of these cocaine ranks first; two grains of it are prescribed with five ounces of water, a teaspoonful to be given every second or third hour (one-twentieth gr. a dose); extract of belladonna one-tenth gr. *pro dosi,* in pills; soda water, lime water. In case of great obstinacy a change of air and surroundings might become unavoidable.

THE THERAPEUTIC APPLICATION OF MEDICAL GYMNASTICS.[1]

BY BARON NILS POSSE, M.G.,
Director Boston School of Gymnastics.

The word *gymnastics* is generally understood as meaning systematic exercise of the muscles, for the restoration of health, and for the development and preservation of the physical powers. Hence gymnastics must be considered, not only as an educational and hygienic agent, but as a curative means as well. It naturally follows that the character of the exercises must vary according to the purposes for which they are used.

Though exercise of one kind or another has been used since times immemorial for curative purposes, we owe it to the Swede, P. H. Ling, and his followers that each branch of gymnastics has been given a more distinctive character and that a new impetus has been given to the medical part of this science. Ling divided gymnastics into two main branches, medical and educational, the names denoting their aims. The medical branch has been commonly known as "Swedish Movement Cure," "Movement Treatment," etc. I prefer to use the name "medical gymnastics" in this last sense, as these words have a wider significance than the word "massage," which usually is understood as denoting one of the procedures of friction, kneading, and percussion. Each one of these manipulations might, however, be regarded as passive exercise of the muscles and as such to belong among the procedures of medical gymnastics.

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Medico-gymnastic movements are *active* when executed by the patient himself, as for instance the voluntary motion of the forearm as in flexion; if the operator makes resistance against this movement, it becomes *resistive*; if he helps the patient in performing it, it becomes *assistive*; and if he is doing the movement without any voluntary effort whatsoever from the patient, the movement is called *passive.* The passive and resistive movements are the ones most used in the application of this treatment; the assistive substituting the resistive where the voluntary nerve-impulse is deficient, and the active ones serving for home exercise where this is desirable. All these movements may now be given the usual names of flexion, extension, abduction, adduction, etc., etc., and some of them can be applied by machinery, such as vibration and circumduction. As for "mechanical massage" I quite agree with Zabludowzky and other authorities, that nothing done by machinery can ever be worthy of the name of *massage.*

"The effect of a movement is the result of its *action*, and the *reaction* of our organism;" the effect may be physical, physiological, and psychological, and movements have also both a general and a local effect. Usually the local effect decides the use of a movement, although its general effects should never be left entirely out of consideration. The local effects of active movements in general are stronger innervation or increased cerebral influence upon the nerves, and increased afflux of arterial blood into the active parts. This afflux in some parts lessens the amount of blood supplied to other parts; and thus in the active movements we have a regulator for the hydrostatic pressure of the blood, — a means of preventing and relieving active hyperæmia. It also follows that we are able to overcome the atrophy of some parts by increasing the local nutritive activity, and to counteract hypertrophy by lessening the arterial supply, *i.e.*, by leading it into channels where it is more needed. The local effects of active movements are highly increased by making the movements resistive, whereas they are lessened if the movements take the assistive form.

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[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Massachusetts Medical Society (Suffolk), March 13, 1889.

The effects of passive movements differ somewhat from those produced by the active ones. For, whereas the active movements harden the fibrous tissues and lessen the adipose ones, the passive movements make lamellous texture predominant and cause a greater amount of fat to accumulate between the muscles and under the skin.

As a rule, the "prescription" for each particular case treated by medical gymnastics should contain both passive and active (resistive or assistive) movements, selected according to the above principles. The number of different movements given in one application should be reduced to its *minimum:* usually it is not less than six and not more than twelve, occupying from thirty to sixty minutes. These movements must follow each other in such a manner that the effect of one does not neutralize the effect of the one just given, or *vice versa*. The movements, at first given gently and tentatively, should grow in power and duration in even pace with the strength of the patient; and it has been found advantageous to begin and end each application by some gentle exercises chosen for their general effects, and to put the more specific movements in the middle of the prescription. It is customary to allow a brief interval of "rest" after every two movements: it should be understood, however, that the patient does *not* lie down but moves around if his strength allows it; for this pause is made so that the reaction may set in — "the movement may be 'assimilated'" — and this occurs sooner if the patient does not lie down, as gravitation has less influence on the circulation when we walk than when we lie down. It should be left to the physician, or in his absence, to the operator, to decide the duration and frequency of each movement, for, as a rule, a patient is no more competent to prescribe what movement and how much of it he ought to take, than he is to prescribe his own medicine.

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If we turn to the more immediate subject of this paper, or how to apply the movements, we are naturally led first to consider the disorders of the *circulatory system*, as the effects produced by movements are most noticeable in the changes caused in the circulation.

As it is well known how bodily movements increase the activity of even the healthy heart, it has been questioned whether it would be safe to apply movements when the heart is diseased and consequently still more sensitive. The question is, whether it is possible to give any movements that could help and regulate the circulation without increasing the activity of the heart. Various movements have been applied to persons suffering from heart-disease, and their effects have been investigated by observing the heart's action at the beginning and end of each movement; and it has been found that there are both active and passive movements which will quiet and regulate the heart's action. How massage acts in these cases has been neatly illustrated by Dr. Douglas Graham, when he describes "the contracting hands of the manipulator" as "two more propelling hearts at the peripheral ends of the circulation, co-operating with the one at the centre," etc. But that is not all: if they are done in easy, restful positions, active movements can also be performed. When the force of the movement is carefully graded according to the severity of the case, the pulse becomes fuller and more even, but not more rapid. The aim of the movements will be to diminish the irritability of the parts in the immediate neighborhood of the heart, which is done by passive expansion of the chest-cavity; and to prevent the too rapid afflux of the blood to the heart by increasing the circulation in peripheral parts. Whether the disease takes the form of hypertrophy, dilatation, fatty degeneration, or valvular deficiency, the character of the movements used will be very much the same, the chief object being to regulate the circulation of the blood and lymph. Among movements that have the best effects are the so-called "respiratory" movements. These consist in passive expansion of the patient's chest by the operator, while the patient is breathing, as follows: the patient sits on a chair (without a back); the operator, standing or sitting behind, grasps the patient under the arms, which are hanging loosely down; now the operator lifts the patient's shoulders upward and backward, while the patient inhales, and lets them gently sink, while he exhales. In this way the respiration becomes very deep, without any increased nerve-impulse from the patient, and the heart's action is by no means accelerated. The negative pressure produced during inhalation in the organs in the chest-cavity outside the lungs can in this way be made from five to six times greater than what it is during ordinary inhalation (which, according to Dr. Wundt, corresponds to the pressure of a 7.5 mm. quicksilver cylinder); and the circulation in the adjacent veins is accelerated in proportion. The closing of the semilunar valves during the diastole of the ventricles and the resistance of the arterial walls prevent any marked retardation of the arterial currents. The effect can be still more increased if the operator lifts the patient's arms to a horizontal position during the inhalation, and again lowers them during the exhalation. Here the elevation of the arms not only expands the chest, thus aiding the respiratory act, but it also straightens the curve of the axillary artery, which lessens the resistance to the arterial current toward the arm, that is, the pressure in direction of the heart is lessened. These movements can be varied in many ways.

Prof. Lovén, of Stockholm, has said that "at the greater number of the articulations, but especially around the hip and shoulder-joints, as well as at the lower part of the neck, the superficial part of the walls of the veins is usually fastened on aponeuroses and fasciæ, which by certain movements are extended so that the veins are expanded. This causes in these veins a suction which powerfully accelerates the return current. By the alternate motions of the joints the veins may thus be alternately extended and contracted, filled with blood and again emptied. This is true not only of the extremities but also and especially of the largest of all the veins, the inferior vena cava, which is so located along the front of the spine that it must follow the movements of the latter. If the thorax be bent forward, this vein becomes highly contracted, again to expand when the trunk is straightened. Experiments have proved that the capacity of the vessel largely increases at such extension. It is easy to understand how at every extension, and still more at backward flexion of the trunk, a suction is caused in all those veins which supply the inferior vena cava, especially in those of the lower extremities. A similar condition takes place in the veins of the arms when these are extended sideways and somewhat backward, with the hands closed. Finally, as regards the jugular veins, these are the most extended when the head is bent backward with upturned face."

The flow of the lymph is accelerated in proportion with that of the blood, the negative pressure, as described above, causing a suction also in the thoracic duct, and the increased pressure of the blood, produced by suitable movements, accelerating the flow also in peripheral lymph-vessels. An average "prescription" for heart-diseases would have the following appearance: —

1. Passive foot circumduction; reclining position.
2. Forearm flexion and extension with gentle resistance; reclining position.
3. Passive hip circumduction; reclining position.
4. Resistive foot-flexion and extension; standing position.
5. Percussion on cardiac region of chest (specific in heart-diseases).
6. Passive trunk circumduction; patient sitting astride a chair.
7. Resistive leg extension, one leg at a time; reclining position.
8. Passive arm circumduction.

After each movement a passive respiratory movement.

In three cases of heart disease which came under my care, two of dilatation, one of fatty degeneration, the movements used were substantially the same as the above; and although, of course, no *cure* was effected, there was a decided improvement of the symptoms. This is about all that can be expected, as an organic disorder of the heart but seldom changes into health. To alleviate the suffering and prevent any changes for the worse, is at least something gained; and no other means will prove so effective in this respect as medical gymnastics; but to secure any permanent results the movement treatment must be continued for long periods; or, as Dr. Zander, of Stockholm, has put it: "In heart-disease, movement treatment is an uninterrupted necessity, at least during the winter."

The same may be said of aneurism, which disease has sometimes been treated by medical gymnastics, the movements being similar to those used for heart-diseases, and their object being the same: to promote the circulation of the blood. In one case of aneurism of aorta descendens, sent to me by a physician, some of the symptoms (numbness of the lower extremities and incontinentia urinæ) yielded readily to the treatment, but returned shortly after the patient had ceased to take treatment.

Of other diseases of the circulatory organs only varicose veins are amenable to this form of treatment. Dr. Hartelins, of Stockholm, states that this disorder cannot be cured by medical gymnastics. I have had more good fortune than he, for I have at least one cure to report: —

Mr. J. L., aged twenty-six, had very pronounced varix of the left internal saphenous vein. His business compelled him to stand for ten or more hours a day, and this had caused passive hyperæmia of the whole pelvic region, producing constipation, enlargement of the prostate, cystitis, and finally this varix. The treatment given was: —

1. Resistive arm flexion and extension upward, to increase the arterial current in the upper thorax and arms, as well as to increase the chest capacity.
2. Passive hip circumduction (as described before).
3. Passive trunk circumduction (as before).
4. Brief percussion along the varicose veins so as to stimulate the vasomotor nerves and cause the vessels to contract. During this procedure the patient was lying on his back with his legs higher than the rest of his body, so that the posture might aid the venous current.
5. Resistive trunk rotation to bring into play those muscles that perform the expulsory act and thus to relieve the constipation.
6. Pressure over the pubic crest, patient reclining, with relaxed abdomen. This movement is a specific against cystitis, acting on the nerves of the bladder.
7. Same as No. 4, followed by a brief kneading to prevent any soreness of surrounding tissues.
8. Percussion on the sacrum with closed fist, so as to stimulate the plexus that supplies the nerves to the pelvic viscera.

After a few weeks some stronger resistive movements of the legs were added to the above, and after three months and a half of daily treatment (counting out Sundays and a few other days), the varicose veins were no more visible; the other symptoms had also disappeared except the cystitis, which, however, had lessened considerably, the desire to urinate being much less frequent.

Some diseases of the *respiratory organs* can be advantageously treated by medical gymnastics alone, especially disorders of the lungs; and that this should be the case is easily understood, when we remember that "deficient exercise is one of the causes which favor those nutritional alterations in the lung which we class as tuberculous" (Dr. C. A. Parkes). Consumption has ceased to be an incurable disease, for, if taken hold of in time, it will yield to medico-gymnastic treatment. The movements are here directed so as to aid the action of the heart, increase the chest capacity, and improve the general nutrition. Swedish physicians have some glorious results to show, which space forbids me to mention here.

Of bronchitis I have a case to report: —

Miss N. P. S., aged twenty-two, contracted a severe cold which developed into chronic bronchitis; when she came to me (January, 1887) she had tried everything else and had finally been advised to go South. The general object of my treatment was here to increase the skin-evaporation by accelerating the cutaneous circulation (general massage), to keep the bowels active (resistive trunk-rotation), and to promote the reabsorption of the bronchial mucus. The last-named end was achieved by passive vibrations of the thorax and chest-percussion with the ulnar borders of the hands. A few respiratory movements were added to the specific ones. My treatment cured her in the remarkably short time of five days, with one application a day.

Asthma and emphysema can be treated by movements with equal success, although these two diseases may be considered as the opposites of each other. In asthma the nervous contraction of the respiratory muscles prevents the chest from expanding and the air from entering until the accumulation of carbon in the blood finally relaxes the muscles, whereas in emphysema the air-cells are enlarged, refuse to contract and to expel the air; the patient strains all his muscles to widen his chest, the thorax becomes arched and permanently dilated. Percussion on the chest is the specific movement in both cases; in asthma it is continued for a long period at a time, as this will cause a relaxation of the respiratory muscles; the percussion must be alternated by kneading, or the muscles will be sore; other movements can also be given to prevent stasis. In emphysema the percussion is used only for short periods at a time, as its object here is to cause the intercostals to contract; and, whereas in asthma it is applied principally around the base of the lungs, in emphysema the upper part of the chest is the region to be subjected to this procedure. In asthma the passive respiratory movements play an important rôle, whereas in emphysema we give a movement to contract the chest as follows: the patient sits in a stooping position with arms extended sideways, and moves his arms horizontally forward, while the operator resists the motion. In this way the excessive contraction of the upper portion of the pectorals compresses the upper portion of the chest, and the air is forcibly expelled.

In disorders of the *digestive organs* a great deal can be done by massage, and still more by Swedish movements. The general object of the treatment here would be to improve the general assimilation, to regulate the hepatic circulation and the peristaltic action of the stomach and intestines. Such are passive vibration, applied on the relaxed abdomen by the operator's hand, and rapid, passive trunk-rotation in a stooping, sitting position, both of which lessen the peristalsis, and deep kneading of the colon, which has the opposite effect.

Of fifteen cases of dyspepsia (this word used in its pathological sense), I have accomplished eight cures, four were improved, and three unchanged; the average time of treatment has been seven to nine weeks.

Of neuralgia I will mention the following cases: —

Mr. H. W. G., aged forty, had for some time suffered from neuralgia of the left shoulder and arm, the pain extending from the neck to the thumb, which latter was quite numb. He was given local massage and resistive movements of the arm and hand, ten applications in as many days, and the result was a permanent cure.

Mrs. T. J. F., aged thirty-five, had an acute attack of neuralgia in the right shoulder and upper arm, so that she could not use this arm for any sort of work. Had two applications. Result: permanent cure.

Miss F. C., aged thirty-six, had suffered for some time from intercostal neuralgia of the left side. Cured by two applications.

Miss H. L. G., aged twenty-eight, had suffered from neuralgia of the trigeminus for six months, finally was not able to lie down, and had not slept for several nights when she came under my care (June, 1888). She had tried everything but massage. After the fourth application the pain had entirely disappeared, leaving only a "consciousness" of the trouble; four more applications cured her, and she has had no return since that time.

In diseases of the *organs of locomotion* much has been done by medical gymnastics where next to nothing could be accomplished by massage, properly so called. This refers especially to deformities; and it might be added that medical gymnastics usually will do more, and do it in a shorter time, than the orthopædic treatment. Eulenburg's words (in 1853) that "Ling's method is the only truly rational therapeutic means for the cure of chronic disturbances of motivity," and that "spinal curvatures, resulting from faulty carriage (in consequence of a preponderance of muscular force on one side of the body), are now-a-days never treated by any good orthopædist by any other means than the Swedish system," seem reasonable, for although we may extend contracted parts by mechanical appliances, this does not develop any antagonistic forces that would counteract a return to the abnormal shape.

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In medical gymnastics there is a vast field for an exploring scientist, and there is an increasing demand from the medical profession in general that the physicians should themselves take this matter in hand and not leave it to be practised only by uneducated charlatans and by a few specialists who have had a medical education for this particular purpose. The physician would then prescribe this treatment where it is indicated, and if he had not the time nor the desire to apply it himself, he might be able to assist the *masseurs* by his greater and more extensive knowledge of general pathology, which a specialist will always more or less lack.

A CASE OF TRAUMATIC HEMIPLEGIA.

WITH REMARKS ON CERTAIN POINTS OF TREATMENT.[1]

BY JOHN A. JEFFRIES, M.D.

The patient, twenty-eight years old, married, healthy, of steady habits, received on the 11th of February, 1888, a stab-wound in the back of the neck on the right side, the knife entering about three inches behind the antitragus and passing downwards and inwards towards the spine. He then fell forwards and cut a small gash over the outer end of the left eyebrow. This happened in the evening; and shortly after the patient became unconscious and so remained for seven hours. On awakening he was observed to be paralyzed.

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[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Massachusetts Medical Society (Suffolk), March 13, 1889.

Two days later he was seen by Dr. P. C. Knapp, to whom I am indebted for an account of the case at that time.

Pain on pressure below and over anterior edge of trapezius, complete paralysis of left arm and leg, paresis of right arm with inco-ordination. Right plantar reflex greater than the left, which was almost absent. No ankle clonus, knee-jerk and cremaster reflex normal, no abdominal or epigastric reflexes. Sensibility of right arm impaired, elsewhere good, left pupil larger than right. Eyes, tongue, face, and lips freely movable. Pulse 60, weak; respiration weak, seems to be due to weakness of diaphragm, cannot cough.

Under the use of faradism the right side quickly recovered, but it was not so with the left side.

Patient was first seen by me at the dispensary on July 13th, and then presented the following condition: General appearance healthy, scars at seat of stab-wound and over left brow; heart and lungs apparently normal. Left arm paretic at shoulder, forearm quite weak, hand worse. The arm cannot be raised above the shoulder, flexion and extension of forearm slow and feeble. Pronation slight, supination practically absent, motions at wrist feeble, fingers flexed and helpless. The whole left leg is weak, but the chief symptom is toe-drop, the foot being jerked up in the patient's efforts to walk. Electrical reactions normal, no distinct contractures, no changes of cutaneous sensibility discovered, left knee-jerk violent and prolonged, right normal, no ankle clonus. Careful examination revealed nothing abnormal in head or neck. Besides the hemiplegia patient complained of pain over right shoulder, but nothing could be found.

A diagnosis was made of injury of the brain on the right side due to contre-coup from the blow on the left brow received in falling. I did not and do not see my way to diagnosticate the exact nature of the injury, but incline to the view of meningeal hæmorrhage. In spite of the fact that he had been receiving electrical treatment for six months I gave hope of decided improvement.

Under treatment patient steadily improved, and on the first of September went to work again at heavy labor: it is all-day work handling bales of five hundred pounds each.

At the end of August his arm was much improved, shoulder and forearm motions good, except supination which is strong but slow. The hand was of use again, though the grip by the dynamometer was only forty-two, and eighty pounds could be lifted. Most of the time the fingers could be easily managed, but at times the index finger flexed when it should have extended. The strength of the leg was also much better; the toe-drop almost gone and walking quite easy. In short, he could easily be mistaken for a normal man.

My object in showing the case at this time is to point out certain factors in the prognosis and treatment which I believe were of value in bringing about so much improvement after the ordinary electrical treatment for six months.

The favorable prognosis was based on the youth and health of the patient, the injury being due to trauma, and the fact that the right arm had been so much involved. It was held that if the right side was so much affected by the injury there should be a corresponding reserve power for the left arm in the left healthy side of the brain. This principle, the partial representation of a limb in the cerebral hemisphere of the same side, is shown in the common habit of healthy people when making violent exertion with one arm to involuntarily make a weak mimic motion with the other. The same is sometimes to be seen in the paralyzed limb of a hemiplegic where no such voluntary motion can be produced.

For some time treatment consisted of a fair labile faradic current to the leg and arm, especially to the dorsal surfaces, $\frac{1}{30}$ grain of sulphate of strychnine three times a day and set gymnastics, in which the elementary motions of the arms were practised *together*. In this way the left side improved rapidly for a time and then came almost to a standstill. The patient was then set to work exercising while a weak electric current was passing through the arm, and another decided gain made. Next I tried to stimulate up the motor part of the brain with coca, but only got psychical effects, and soon desisted.

By this time the left side was in much the same state as at present as regards power, but was slow and gave the patient "trouble to start it." A galvanic current of three milliampères was then passed through his head from one motor region to behind the mastoid process of the other side. This the patient held "limbered him up," and it certainly appeared to be the case.

While it is not safe to draw general conclusions from single cases, this case seems to show that it is desirable in treating hemiplegic patients to try exercise with co-ordinate exercise of the sound side so as to lead the weak side on. To the patient every little gain is a great boon, and is liable to make the difference between dependence and self-support.

The pain in the shoulders was at first held to be due to a cutaneous nerve being involved in the scars on the neck, but, nothing directed by this idea doing good, salicylate of soda was tried and quickly produced relief.

I learn to-night that the patient sometimes has slight cramps in his hands after heavy lifting, and during the last two months has been liable to sudden, flash-like attacks of vertigo. This may be the first signs of a new train of symptoms for which I have been watching from the beginning. The cramps, however, seem to be purely muscular in origin and show no connection with the shocks.

— The State Medical Society of California has resolved to contest the case of Dr. W. H. Mays, who was imprisoned in San Bernardino County for refusing to give a professional opinion on the subject of insanity. A telegram of sympathy was sent to Dr. Mays, and his imprisonment was referred to as an outrage. All other experts but medical experts were paid for their opinions.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY, AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

March 13, 1889.

Dr. V. Y. Bowditch read a paper prepared jointly by himself and Dr. W. N. Bullard, entitled

TWO CASES OF PHTHISIS TREATED BY INTRA-PULMONARY INJECTIONS.[1]

Dr. Bullard stated that there was in his mind no question in regard to the general character of the pathological process in the lung in the first case reported, nor of its severity and tendency to a rapidly fatal issue at the time when he first saw the patient and performed the first intra-pulmonary injection. There was no doubt as to the marked and immediate benefit which followed not only the first, but each subsequent, injection into the lung-tissue up to the time the patient left the hospital. Before the treatment there were, in the portion of the chest affected, loud bubbling râles, high-pitched bronchial respiration and the signs of cavity formation with fever, night sweats, and profuse expectoration. The local physical signs, as well as the general condition of the patient, improved greatly as soon as the intra-pulmonory treatment was commenced. Within forty-eight hours after the first injection, the very loud, coarse, bubbling râles had disappeared, being replaced by finer subcrepitant râles, and the respiration was lower in pitch and less bronchial in character. After several injections, the subcrepitant râles became much less numerous and finally disappeared to a great extent.

Dr. Bullard has up to the present time injected five times in pulmonary cases. One patient was in an advanced stage of tubercular phthisis and an injection was made in the neighborhood of a supposed cavity, in the hope of relief rather than cure. This hope was justified and the patient was much more comfortable after the injection than he had been previously, the amount of sputa diminishing and the general condition being bettered, but the progress of the disease was not hindered, nor even probably delayed. The physical signs were not materially changed.

In another case an injection was made into an abscess cavity connected with the lung, and in this case, at the request of the consulting physician, a solution of iodoform was used. No beneficial result was obtained.

There are clearly many cases in which this mode of treatment may be safely and easily applied with the effect of diminishing the symptoms of active disease, of benefiting the patient's condition, and of prolonging and possibly of saving life.

Dr. F. I. Knight said that he had been much interested in the case related by Dr. Bowditch, and asked if bacilli of tuberculosis were found in the sputum of this patient. Dr. Bowditch replied that they were not found before the disease became developed upon the the left side of the chest. At a later period in the history of the case they were discovered in the sputum. Dr. Knight then proceeded to state that there is no doubt that we have entered upon a new era in the treatment of disease by drainage of cavities of the lungs, especially at the base. In the first case reported by Dr. Bowditch, we have an example of one of the forms in which disease may appear, namely, a possible acute suppuration at the apex, while true tubercle was only detected when the disease had appeared at the other apex at a later stage of the disease. When the disease is situated at the apex, it is much more difficult to treat locally; as the cavities are not often single, but generally multiple, and it is therefore much more difficult to treat them by aspiration and drainage. It may also be said that drainage of an apex cavity is not so necessary as of one situated at the base of the lung; inasmuch as the patient can empty the former much more easily by cough. The question of operation upon such cavities must be considered. The injection of such cases can at least do no harm, and be commenced earlier. This treatment is certainly worthy of further trial at the hands of the medical profession.

Dr. Jeffries asked if elastic fibres were at any time found. Dr. Bowditch replied that they were not detected.

Dr. John A. Jeffries exhibited a patient presenting

A RARE FORM OF HEMIPLEGIA,[2]

and read a short paper describing the most interesting features of the case, and illustrating the remarks by the motions of the patient.

Dr. P. C. Knapp said that he saw the patient soon after the accident by which he was injured, and was then unable to make an accurate diagnosis of the lesion, whether it affected the head, or resulted from the stab in the neck. He did not think at that time that the patient would live. Afterward, when he saw the patient at the hospital, the case had cleared up, and now seemed to be one of paresis from the head injury, and not the result of the stab. It might be that there was meningeal hæmorrhage. This was a point which could not be definitely settled. The point brought out especially by Dr. Jeffries is of great importance, and is worthy the attention of physicians in the treatment of all lesions of a paretic or apoplectic nature.

Dr. W. N. Bullard remarked that he saw the patient immediately before Dr. Jeffries saw him, and sent him to Dr. Jeffries. His observations entirely corroborate those of Dr. Jeffries in all respects. The case seemed one of hemiplegia, and nothing else was evident at that time. Dr. Jeffries has introduced a very important factor in the treatment of this and similar cases, to which attention should be especially paid, both in the way of treatment of the existing conditions, and also as an element of diagnostic importance. The exercises described are essentially of the gymnastic variety, and have been of the greatest use in educating the muscles of the paretic side to the resumption of their function. Unfortunately we have no gymnasia in our hospitals and dispensaries, where such exercises can be carried out, and carefully regulated movements be conducted with the necessary supervision on the part of some competent and educated person. These movements cannot be at once performed by the patient, but should be conducted by the physician, and the patient must often be shown how to make certain movements, which he cannot do unassisted. This element of instruction and treatment in paretic cases is entirely unprovided for in any of the institutions calculated for the relief of persons suffering from such affections.

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[1] See page 455 of this Journal.

[2] See page 462 of this Journal.

Dr. Jeffries stated that while under treatment, the region around the scar in the neck was the seat of anæsthesia, but afterward there was a constant pain in the part, which had been relieved after many ineffectual trials, by the use of salicylate of soda, but afterward, on discontinuing the medicine, the pain recurred and the distress was now as severe as ever. He did not know whether the relief was due to the soda, or to some other cause, or whether the pain was a neuralgia or some other sort of painful affection.

Baron Nils Posse then read a paper upon

THE THERAPEUTIC APPLICATION OF MEDICAL GYMNASTICS.[3]

Dr. Henry I. Bowditch said that he could not undertake to discuss so important a subject at this time in all its bearings, but that he desired to express his entire approval of the position assumed by the reader, and to state his belief in the remedial qualities of medical gymnastics, as described in the paper just read; but this is even more necessary and more important in the public schools, for the purpose of developing the physical systems of the growing pupils at the same time that their intellectual development is going on. Dr. Bowditch stated that upon the medical side of the question he might be able to make a few brief suggestions. In former times we not infrequently saw the chest contracted after pleurisy, just as we were accustomed to see adult patients presenting the deformity of club-foot. The latter at present in an adult is considered only the result of inadequate advice on the part of the physician, or of baffled efforts of the best surgery. About forty years ago Dr. Bowditch had a case under his care in which the chest was contracted as the result of a pleurisy. The patient had hectic, was quite weak, and it was supposed that he was rapidly approaching a fatal issue. At the same time there were no physical signs of phthisis. Dr. Bowditch sent the patient into the country, and directed a pure open-air treatment, with the employment of gymnastic exercises which were carefully regulated according to the strength of the patient. This person lived nearly thirty years, during which time he labored at an arduous calling, and died only recently, but with his chest always distorted. Dr. Bowditch had also recommended active movements for children after recovery from pleurisy with contraction of the chest-wall, in which cases also there is complete restoration of the shape of the chest, and reëstablishment of the function in the lung of the affected side. In a case not long since seen by Dr. Bowditch, the patient was thought to be seriously ill with disease of the lower part of one lung. He had given up business, and retired to the country. Dr. Bowditch directed a life essentially out of doors in character, with the aid of carefully regulated exercises and massage, arranged and carried out under the supervision of a thoroughly conscientious trainer. The man who undertook this part of the treatment entered into the arrangement *con amore*, and the result was the decided improvement of all the conditions of the patient's state from the time the treatment was commenced. The gain was instant and rapid. In cases of tubercle, we may, by proper exercises, make the patient expand the lung by dilating the chest-wall. This may be accomplished by the inhalation of long breaths, deep inspiration frequently repeated, and accompanied by external manipulation of the chest-wall by a careful and skilled masseur. In some cases good effects have been found to follow this procedure. In a recent case, in which there were serious signs at the apex, and on account of which the patient was confined to the house, and was believed to have phthisis, the treatment was made to embrace the elements of exercise embodied in the paper read here before us. The patient was immediately sent out of doors, was instructed to walk every day an increasing distance, up to five miles, and to take all the open air recreation possible in the sunshine. The improvement was immediate, and has persisted. The physical signs disappeared, and the patient is thought to be well. Tonics and other appropriate adjuvants were not omitted, but the exercise is believed to have had a great influence upon the improvement in the case. In some cases of heart disease we no longer forbid gymnastics, as was formerly done. Disease of this organ may be of organic or inorganic character. In children or students at any age, if the teacher should say, "omit all exercise," it would be a serious mistake. The disease may be of purely functional character, and may be the result of debility, which is now known to cause a great variety of inorganic murmurs, and these would be directly assisted by the use of properly regulated exercises of gymnastic character. In a case of organic disease of the heart no one would counsel violent exercises, like the lifting of heavy weights, etc., but simple and easy muscular exercises might be encouraged.

Dr. C. F. Folsom thought that so valuable and suggestive a paper should not be allowed to pass without some remarks upon its recommendations, and the effort should be made to apply its teachings. Dr. Folsom stated that he had not seen much of this system from personal observation, but he had been able to see enough to convince him of its great usefulness, and the benefit to be derived from its employment. We do not know enough of our New England temperament to be able to say just how much of benefit will result from the use of the system here advocated, but it will doubtless prove to be of great service in many cases.

In three cases Dr. Folsom has perceived great improvement from the treatment rendered by the author of the paper, and on some of the persons the effect was most surprising. One was a lady who had tried almost everything, had been under the care of Dr. Weir Mitchell, and had not been benefited by anything which had been done. Under the treatment of Mr. Posse she had become vastly better, and was no longer an invalid. In a second case there was relief from long-standing and intractable insomnia. In a third case the treatment was not productive of benefit, and it was necessary to abandon it. We evidently possess in physical exercise a powerful influence for good or evil. Dr. Folsom announced that at present the teachers of the public schools are being instructed by the reader of the present paper, and they are thus in a position to increase the efficiency of the principles held on this subject by the reader through the instruction of the pupils under their charge. This course is of the nature of educational gymnastics, of which it would be well if we knew more. The subject has long been before the instructors of our schools, but the enormous expense attending the introduction of any of the recognized forms of gymnastic exercises was found to be so great a barrier to its adoption that no steps have thus far been made to secure the desired end. The system presented here on this occasion possesses all the desired and necessary elements of physical exercise, and is accompanied by almost no expense at all. It is to be hoped that the good effects of this system will soon begin to be evident in the better condition of the pupils of our schools.

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[3] See page 479 of this Journal.

Dr. Douglas Graham said: The subject of exercise is a very important one. Perhaps it would be still more important if the custom were prevalent here, which we are told prevails in China, namely, that of physicians being paid by their patrons so long as the latter keep well, but when they fall sick the pay stops. While I agree in the main with the reader in his interesting paper, I cannot but think that massage and exercise are better suited for affections of motion involving joints, muscles, and peripheral nerves than for diseases of internal organs, which can only be indirectly reached by such means.

A patient having a tedious convalescence is often told by the physician to exercise. Perhaps the patient cannot, but the physician may think that the patient will not, and may even get provoked. In such a case the missing link is that the patient cannot make his or her nerves and muscles obey the will. Here it would be well to first improve the circulation and nutrition by means of massage alone, later to add passive motion of the limbs, and after a few days more to begin with active or resistive motion. The patient will at first make but a feeble effort in moving a limb against resistance which will most likely stop halfway, but if the operator be expert he will assist in finishing the movement so as not to discourage the patient. If a group of muscles be very weak, as, for instance, the flexors of the forearm, it is best to place them first in contraction and then pull them out to extension while the patient resists; for in this way weak or strong muscles will offer much more resistance than they will in passing from extension to contraction, and the patient be correspondingly encouraged. While the patient is resting the exercised muscles should be *masséed*, for it has been found that fatigued muscles will do more than twice as much work after massage as they will do after rest alone for the same length of time, showing one way in which the effects of massage differ from those of rest and exercise.

Other differences to which I would call attention are —

(2) That while exercise generally accelerates the action of the heart and lowers blood-pressure, massage usually lessens the beats of the heart and lowers blood-pressure.

(3) While exercise after a full meal is apt to retard digestion, massage in the abdomen for ten minutes has been found to lessen the sojourn of the food in the stomach from fifteen to seventy-five minutes.

(4) In a patient who had been a great pedestrian and who suffered from severe and constant pain in the calves of his legs, Dr. W. W. Keen found an albuminuria of from 3 to 15 per cent., which disappeared quickly on resting, but would reappear promptly on resuming walking. Examination of the urine before and after the patient had submitted to massage for forty or fifty minutes showed no trace of albumen. This would indicate the promotion of nutrition without such changes of blood-pressure and vaso-motor tonus as induced the albuminuria after voluntary exercise.

(5) Prof. Von Mesengeil, of Bonn, injected the corresponding joints of rabbits with Indian-ink. In each rabbit one of these joints was *masséed* at intervals while the other was not, the animals being allowed to run about. After a time they were killed and the joint-cavities examined. There was no ink found in the cavities of those that had been manipulated — it had all been absorbed. In the joints that had not been *masséed* no ink had been absorbed; it remained mixed with the synovia in a smeary mess.

Other instances of the difference between massage, exercise, and rest might be given. Suffice it to say that massage will sometimes overcome the evil effects of too much rest and too much exercise. A judicious combination of all three is often of great therapeutical value, and is at present engaging the attention of the best neurologists and the best orthopædic surgeons.

Dr. Folsom stated that Baron Posse had already five classes under instruction in educational gymnastics in this city, and that the subject was one in which the medical profession could profitably interest itself, and to that end he made the motion that the chairman and the secretary of the section be constituted a committee to arrange for a regular or a special meeting of the section for the purpose of listening further to the description of the system of educational gymnastics as illustrated in the work and teaching of the reader of the paper on that subject at this meeting.

Dr. P. C. Knapp said that he desired to add a word in favor of the treatment of functional nervous troubles by exercises of the muscular system. The good effects of such treatment were illustrated in a patient recently seen by him under the following circumstances: The case was that of a lady who, when abroad about two years ago, made the trip from the sea-level in England to a point in Switzerland about eight thousand feet above the sea in the period of one week. There she had an attack of the mountain fever, and since that time has been affected with a multitude of symptoms of functional nervous character. She has periods of sighing, with frequent retching, and the entire category of neurasthenic phenomena. The lady was sent to an elocutionist for the purpose of learning to control her respiratory apparatus, in the hope that this would lead to the re-establishment of the functions of the neighboring organs, and thus to the cure of the symptoms.

Dr. G. Liebmann presented a paper upon

SOME RARER FORMS OF NEUROSES OF THE STOMACH,

which was at his request read by the secretary. Dr. Liebmann added, in the way of remarks, that many of the neuroses of the stomach are not recognized, and when suspected are often confounded with other functional or organic disorders of that viscus. They often resemble catarrh, and are treated with the ordinary remedies, with cathartics, etc., and finally are sent to Carlsbad. This class of cases does badly at Carlsbad. The stay there is not productive of a cure, but patients are taught to expect a cure later. Patients may indeed get better, but only after anti-neurotic treatment. Much of the disappointment experienced at the various resorts is due to the fact that the effect of the waters is usually obtained only after some time, and then is not infrequently disappointing. An illustration of this is the experience of a lady who while at the baths became engaged to a gentleman much her senior. On being asked if she loved her affianced, she said frankly that she did not; whereupon she was informed that she would feel her affection vastly increased when the waters had produced their effects upon her system.

The differential diagnosis of these neurotic cases from the organic cases which they so often closely simulate is only to be made by chemical analysis of the contents of the stomach. We are too apt to form an opinion *ex juvantibus* in these cases. These patients do badly upon the limited diet usually prescribed for indigestion or organic diseases of the stomach, but they do well upon free and ample diet, with the aid of relaxation and the open air.

The fancies of the patient often exercise a great influence upon the neuroses of the stomach. Added to these are the whimsical and erratic phenomena arising in that organ itself, which antagonize all preconceived opinions. The neurotic stomach often tolerates the most coarse and rude diet, and rejects wholesome or delicate foods, and may again tolerate one variety of food at one period, and be in quite the opposite condition at another time. The study of these varying conditions of this portion of the alimentary canal will be the key to many of the disorders met with in its functional integrity.

NEW YORK ACADEMY OF MEDICINE.

Stated meeting, April 18, 1889.

The President, Alfred L. Loomis, M.D., in the chair.

Dr. E. F. Brush read a paper on

THE RELATIONSHIP EXISTING BETWEEN HUMAN AND BOVINE TUBERCULOSIS.

Although the origin of tuberculosis in a specific microbe had been now maintained for a number of years by the best scientific authority, he said it was somewhat surprising to see how little fear of tuberculous infection was felt by the great majority of people, notwithstanding the large mortality from the disease every year. Phthisis was not, as many supposed, the result of civilization, since barbarous and uncivilized races were afflicted by it as severely as many of the most advanced civilized peoples. Neither geographical position or climatic conditions were a factor in its distribution, although every part of the globe, with the exception of a few isolated areas, was a *habitat* of the disease. After several years of close study of the affection, including a consideration of all accessible statistics and the habits of the people where it prevails, Dr. Brush said that he had arrived at the conclusion that the only constantly associated factor is found in the in-bred bovine species. If a community was closely associated with in-bred dairy cattle, tuberculosis prevailed, and *vice versa*, if there were no in-bred dairy cattle, there was no tuberculosis.

Having stated that he believed this position to be susceptible of proof, he proceeded to quote statistics and the statements of various authorities and travellers relating to phthisis among the Hottentots of Africa and the Kirghizes of the Steppes of Russia, and in Denmark, Iceland, Greenland, the Island of St. Michael in the Atlantic Ocean, Australia, New Zealand, the Highlands of Scotland, North Wales, the Hebrides, Switzerland, Madagascar, Algiers, and Greece. He quoted Hirsch to show the comparative frequency of the disease among many of the Hottentot tribes, who, according to the evidence of reliable travellers owned large herds of cattle, which constituted their principal possessions, and not only ate their meat freely, but constantly drank a mixture of beef blood and milk. He also gave the authority of Darwin for the statement that the Hottentots engaged largely in the breeding of cattle and that a number of distinct breeds were to be found among them. Among the Kirghizes inhabiting the Steppes of Russia, on the other hand, who had no dairy cattle at all, there was an absolute immunity from phthisis. In Denmark, where the number of cattle was quite large in proportion to the population, the disease was very prevalent, while in Iceland, where the cattle were but few in number, but where the climatic influences were almost identical with those of Denmark, it was very rare. That this was not due to any peculiarity of race was shown by the fact that when the natives of Iceland came to Denmark to reside they became equally subject to phthisis with the inhabitants of the latter.

In the portions of Greenland where dairy cattle were common phthisis was quite prevalent, while in those where the number of cattle was extremely small the disease was almost unknown; and the same was true of Switzerland and other countries. In Australia there were formerly no ruminant animals whatever, and phthisis was never heard of. The first attempt to introduce dairy cattle was made a hundred years ago, but little or no breeding was carried on for a considerable number of years after this. Later, the breeding of cattle was attended with much success, and the number of bovine animals now in Australia was enormous; while the prevalence of phthisis had also gradually increased, and at the present time the mortality from it there was very great. In Madagascar the breeding of cattle was carried on to a very large extent, thousands of head being annually shipped to other islands in the Indian Ocean; and here also phthisis was very prevalent. In Algiers there were no dairy cattle before the French occupation, now something more than fifty years ago. Since then, however, they had been introduced to quite a large extent, and although the climate of the country was exceptionally favorable for consumptives, there was a considerable amount of phthisis there, especially among the European residents. In Greece the number of cattle was extremely small, and this country was comparatively free from the disease.

He then went on to say that in studying the relations as regards tuberculosis between the human and bovine races, religion was found to play a considerable part. Thus, in India, with the Mohammedan, Brahmin, and Buddhist religions, there was undoubtedly an absence of phthisis before the English occupation. Up to that time the only cow the inhabitants had was the small Hindoo variety, not related to our dairy cow, and it was regarded as an object of veneration, while the milk used in the country was derived from the buffalo. All the Buddhists and many of the Brahmin castes abstained from the use of meat in any form. There was, however, a constant change taking place in a country like India. Prejudices were gradually dying out and many of the people had undoubtedly adopted the habits of their conquerors. The English dairy cow was slowly but surely finding her way into India, though the Buddhists and Brahmins would, of course, be the last to accept the cow as a food producer.

In considering the statistics of Europe, he said it would be found that the prevalence of phthisis is regulated by the ratio of the bovine to the human race. Thus, in Ireland, where the cattle almost equalled the human population, and in Denmark, with about the same ratio of cattle to inhabitants, the disease was about equally prevalent. In Portugal, where there were six inhabitants to one bovine animal, phthisis attracted so little attention that but few notices relating to the disease in that country could be found. Comparative immunity from the disease, corresponding with the small numbers of cattle, was also met with in many parts of Italy and Egypt. In the northern part of Egypt phthisis was quite common, while the further south one went the less prevalent the disease became.

From the statistics he produced Dr. Brush thought there could be little doubt that the in-bred species of the bovine race is the prime ætiological factor of tuberculosis in the human race. They not only fostered the germ and prevented its extinction, but sowed it in the human race continually and abundantly. Without their aid the germ would perish, for of all germs known, none had so hard a struggle for existence in man as the bacillus of tubercle, as was shown by the fact that out of the immense number of individuals who were exposed to its infection, so comparatively few contracted the disease. After diligent search he had failed to find a single well-authenticated case on record of a human fœtus at term showing evidence of tuberculosis; and the cow was the only known animal that thus transmitted tuberculosis to her offspring in inheritance. In the case of the cow this had been positively demonstrated. In concluding his paper Dr. Brush said: Man cannot generate new forms, but he can so control and interfere with nature's processes as to modify the original design. In-bred cattle are selected, sheltered, and pampered, so that they would be unable to withstand the rigorous conditions of the wild state. They propagate earlier, are larger milkers, and are more efficient beef-producers, while their meat is more delicate and tender than that of the wild animal. All this is achieved by man at the expense of his own health.

DISCUSSION.

Dr. H. M. Biggs said that he could not but dissent very strongly from the conclusions reached by Dr. Brush. It was well known how unreliable statistics were. He believed that the statistics given in the paper were not strictly true; but even if they were true, he did not think they would prove the correctness of Dr. Brush's position, for the reason that they left entirely out of consideration all the other factors concerned in the production of tuberculosis. Dr. Biggs then criticised some of the statements made in the paper. Thus, as regards the alleged immunity of the inhabitants of the Steppes of Russia from phthisis, he said that while the disease was undoubtedly extremely rare in this region, according to the best authorities the population was not absolutely free from it, a few cases being found among them. As regards Egypt, there was no proof that there were more cattle in lower Egypt, where phthisis was very common, than in upper Egypt, where it was extremely rare. As militating against Dr. Brush's theory he cited the instance of Morocco, than which, according to Hirsch, no country was more free from phthisis, and yet all through which there were considerable numbers of horned cattle which closely resembled the Alderney breed.

In Chili the disease had of late years become very common, although there had been no marked increase in the number of in-bred cattle to account for this. Again, in the Sandwich Islands the population was dying off from phthisis; but this was not because of the presence of in-bred cattle, but was due to the spread of the infection by white settlers. The same was true of the American Indians. They did not possess many in-bred cattle; yet phthisis was very fatal among them.

Dr. Brush had left entirely out of account the influence of age, altitude, and occupation, which had been shown to be very important ætiological factors. If tuberculosis was often conveyed by means of milk, the disease ought to be much more common among young children, who lived almost entirely upon this food, than among any other class of individuals; while, as a matter of fact, it was quite rare among this class. The facts appeared to show that phthisis is most prevalent among the highly civilized nations and among the native populations of uncivilized countries which are brought into more or less constant contact with foreigners from civilized countries. It seemed to him that Dr. Brush had started out with the preconceived idea that phthisis is derived from the bovine species, and had endeavored to make all the facts he met with in connection with the disease subservient to this preconceived notion. The only observations which carried out this idea were based on statistics which, as he had said, he believed to be unreliable, and which would only be of value if they were collected with the greatest possible care, and with all the other conditions affecting the production of phthisis also taken into consideration.

In all civilized countries there were to be met with these other elements (and particularly those of occupation), which enter into the causation of the disease. Confinement in close, ill-ventilated apartments had a most pronounced effect upon males and females alike. More than this, the theory propounded in the paper was entirely inadequate to account for the marked prevalence of phthisis among armies and the inmates of prisons. Again, other things being equal, the disease was found to prevail in proportion to the density of the population.

He could not but regard Dr. Brush's conclusions as unfortunate, especially as, should they be accepted, they would have the effect of diverting attention from the most important mode of origin of phthisis, viz., transmission from the human subject. If the disease were derived from animals it could only be through the avenue of the alimentary canal; and it was a well-established fact that the number of cases in which the infection enters the system through the alimentary canal is exceedingly small. In the case of animals fed on tuberculous matter the resulting disease, when such occurred, was found to be located in the alimentary canal, not the lungs; and there was every reason to suppose that the same would be true in the case of the human subject. In tuberculous animals, moreover, the milk was not infected with the bacillus unless the mammary glands were implicated in the tuberculous disease.

It seemed to him ill-advised to look for the cause of the trouble in this unlikely source (from animals) when there were so many ready ways by which the human system might become infected with tuberculosis. One of the most prominent of these was undoubtedly the sputum of tuberculous patients. The sputa of such individuals abounded in tubercle bacilli, and when it was remembered how large was the quantity of the expectoration of consumptives, and for how long a time the disease often lasted, it could well be appreciated what a source of danger to others this constituted. The sputum was apt to be scattered all around, and on its becoming dry the bacilli it contained often floated about with the dust in the air. The bacillus was the universally recognized special cause of tuberculosis, and it might thus be seen how readily it could be inhaled in this way, and so brought into direct contact with the lungs, which were the ordinary seat of the disease. Although he felt convinced that a much larger number of cases of phthisis really originated from animals than was generally supposed, this class, there was every reason to suppose, constituted but a small number of all the cases of the disease.

Dr. Forrest said that in certain sections of the Southern States with which he was familiar phthisis was almost wholly unknown among the whites, but was quite common among the blacks; yet far more fresh beef and milk were consumed by the white population than by the negroes, who lived principally upon corn and pork. It was also a fact that a very fine stock of cattle was now raised in these same districts. He could not see how, therefore, this condition of affairs could be reconciled with the theory of Dr. Brush.

Dr. Grandin said that a little more than a year ago Dr. M. D. Blain had stated in a paper read before the Section on Public Health of the Academy that 2 per cent. of all cattle killed in the New York abattoirs and 21 per cent. of all the milch cows in the country were affected with tuberculosis.

The President said it seemed to him that the position taken by Dr. Brush was too narrow a one, and that any one who assumed that phthisis is due to one cause alone was begging the question. It was a disease that had many causes, and the bacillus which constituted its special ætiological agent would not give rise to it unless it met with conditions which favored its development. Among the conditions to be taken into consideration were climate, hygienic surroundings, heredity, and soil, and a long list of causes must be in operation before the bacillus was able to do its specific work.

Dr. Brush, in closing the discussion, said he thought his position had been somewhat misunderstood. He did not wish to imply that the disease was derived alone from the cow; all that he pretended to claim was, that wherever in-bred cattle existed there is found phthisis also. It needed no proof to show that but a small proportion of individuals who were exposed to the infection contracted the disease, since, although the number of deaths from phthisis was certainly very great, it would be infinitely larger than it is if this were the case. In addition to the bacillus, there must be present the conditions favorable to its development, as Dr. Loomis had stated.

But at the same time, he believed that the disease was originally derived from the bovine species. He did not believe that less than 50 per cent. of all dairy cattle were affected with it, while the statistics which he had quoted showed that wherever there was a race of people without cattle phthisis was unknown. He believed, furthermore, that if all the cattle in this country were to be killed the disease would finally die out entirely here. In countries where dairy cattle were introduced for the first time it took a series of years for the disease to become established among the population, as was the case in Thibet and Ceylon; and in the same way, if all the cattle were removed from a country, phthisis would also disappear in the course of some years. Even after the disease had become firmly established, he did not believe that it could maintain its existence indefinitely after the removal of all cattle.

Dr. Biggs had objected to his statistics, and yet he had brought up statistics of his own, and he thought one set was as worthy of credence as the other. As to the entire immunity of the Kirghizes of the Steppes of Russia from phthisis he had the direct testimony of Dr. Neftel, now of New York, and of two other physicians, who were sent there on a special commission by the Russian government. He did not wish to rely on statistics, except so far as they substantiated the main point that he made, that wherever cattle existed, there phthisis also existed. As to the mortality from phthisis among prisoners, etc., he was quite willing to admit that the infection was derived from persons affected with the disease, and that the existing conditions were peculiarly favorable to the development of the disease. The practical outcome of the whole matter to which he desired to call special attention was, that the prevalence of phthisis could undoubtedly be diminished by properly regulating by law the breeding of cattle, so that the inbreeding now so common might be done away with.

Recent Literature.

Exploration of the Chest in Health and Disease. By Stephen Smith Burt, M.D. New York: D. Appleton & Co. 1889. pp. 206.

This book is the outgrowth of the author's work as professor of Clinical Medicine and Physical Diagnosis in the New York Post-Graduate School, and is of smaller scope than the work noticed last week in that it is strictly limited to the consideration of the signs ordinarily classed as "physical." It is in the main sound, but we cannot help regretting that the author is not contented with Flint's Manual of Auscultation and Percussion, the last edition of which is in no way antiquated.

We are glad to see that Dr. Burt lays much stress on two points: that there is scarcely a single sign which is strictly pathognomonic, but the diagnosis must always be based on a careful consideration of all the signs and symptoms; and that the student should accustom himself to immediate as well as to mediate auscultation.

On the other hand we cannot congratulate him on the invention of the word "calormetation," although we confess that the language does not contain any single word which exactly denotes the measurement of temperature. On page 92 we find "physical exploration, at this time [during or shortly after hæmoptysis] should be performed *gingerly*, if at all:" true as this observation is it is not elegant. We are given to understand that it is important to empty the bowels before taking a rectal temperature, and that there is no easier way of eliminating the sources of error in auscultation arising from a profuse growth of hair upon the chest than in shaving the parts.

Among other omissions we find no mention of cough as a means for the development of fine crepitus; or of the existence of any lesions of the right heart other than tricuspid insufficiency.

—Aphasia in a most extraordinary form is reported as under treatment by Dr. Charcot. A Frenchman, aged 60, learned English through living 17 years in North America, and then Spanish after his marriage with a Spanish woman. He lost his command of these languages in the inverse order. First he was unable to speak Spanish, then English went from him, and lastly his native tongue, French. The affliction was ascribed to the softening of the third left lobe of the brain, and by a methodical practice in conversation he regained his normal ability, recovering the languages in the order of French, English, and Spanish.

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WASHINGTON'S MEDICAL FRIENDS.

In these days, when public attention has been called so strongly by the centennial observances at New York to the personality of Washington, we have thought it might be of interest to our readers to be reminded of the part which the representatives of our profession played in his personal and public life. Like so many other men of sound commonsense and abounding interest in his fellow-men, Washington had a deep friendship for his medical advisers, and in his time came into relation, more often social than professional, with many physicians.

Dr. James Craik, the life-long physician and personal friend of Washington, first made his acquaintance in 1754 as surgeon of the Virginia regiment to which Washington was attached in the troubles incident to the opposing claims of the French and English in the Ohio Valley. Craik was a Scotchman by birth, and was about Washington's own age. In Braddock's unfortunate campaign of 1755, Washington was taken ill with an acute febrile attack, accompanied with intense headache, which continued without intermission, he says, until "I was relieved by the general's absolutely ordering the physician to give me Dr. James' powders, one of the most excellent medicines in the world. It gave me immediate relief and removed my fever and other complaints in four days' time." This marvellous remedy was the "antimonial powder" which for a century has enjoyed somewhat of a reputation in England and elsewhere; oxide of antimony and phosphate of lime are its components.

The action of the general in ordering the treatment for the surgeon to employ would possibly make trouble if followed in the army at the present day, but the result seems to have been most satisfactory to the patient, and the surgeon did not rebel against the order.

A hard campaign with its exposures and other vexations brought on an illness which was manifested by repeated attacks of dysentery and fever, so that Dr. Craik advised the patient's retirement to Mount Vernon in 1757, and soon after followed him, to engage in private practice at Alexandria, where he continued to be his neighbor, physician, and frequent companion. After a few months the illness which was feared to be indicative of a "decline," so far ameliorated that Washington was able to resume military pursuits and to continue them till the French were overcome.

In 1770, at the request of his patient, Dr. Craik joined him in a trip over the same ground they had traversed in the campaign of sixteen years before. They travelled twelve days on horseback and reached Fort Pitt, then comprising a hamlet of twenty houses, about the fort, now the flourishing city of Pittsburg. Here they were entertained hospitably as long as they stayed, and then took canoes down the Ohio, hunting deer and other game which was in abundance, and marking out a claim for a soldier's grant, which was the objective aim of the trip.

This excursion of the doctor and his patient was full of experiences involving considerable danger, as, in fact, a murderous battle with the Indians soon followed in one of the spots visited.

In 1777 Washington had the opportunity, which he did not neglect, of inviting his medical friend to join him, by tendering him the appointment of assistant director-general of the hospital department of the middle district, including the States between the Hudson and the Potomac. This offer he made, as he said, not knowing whether it would be for Dr. Craik's interest to abandon his private practice, and urging him very kindly to make such a decision only as would conduce to his own advantage. Dr. Craik accepted and served through the war. In 1778 he was able to send his chief private information, in a very timely manner, of one of the plots which were being formed against him by jealous rivals.

For a third time, in 1784, Dr. Craik accompanied Washington in a tour to his lands on the Ohio and Kanawha rivers. In conveying his invitation, Washington assured the doctor that he need take nothing but a negro to look after the horses, such bedding as he might want, "a few medicines, hooks, and lines." He himself would provide a marquee, the camp utensils, stores, and a boat for the river journey. This tour was abridged on account of the hostile demonstrations of the Indians, but as it was, these men, at the age of fifty-two, covered six hundred and eighty miles on horseback, having been absent from home only thirty-four days, and having spent most of their nights encamped in the woods. Happy the doctor who can give, and personally share in, such prescriptions for his patients!

Dr. Hugh Mercer, another warm friend of Washington, but about ten years his senior, was also a Scotchman. He had served as assistant surgeon in the army of Charles Edward, and after the defeat of the latter at Culloden, had come to America and taken up his residence on the Pennsylvania frontier. He also joined the expedition of Braddock, in company with Craik and Washington. Mercer, who found his account as a fighter rather than as a surgeon, was more than once wounded in this expedition. In fighting with Indians near Fort Duquesne, afterwards Fort Pitt, his arm was shattered by a ball. He was left behind by his companions and was fourteen days getting to Fort Lyttleton. "For ten days," we are told, "he lived on two dried clams and a rattlesnake, with the assistance of a few berries."

Dr. Mercer recovered and subsequently settled at Fredericksburg. He remained a warm friend of Washington and was a frequent and always welcome guest with Dr. Craik at Mount Vernon. He disciplined the militia, and in the early days of the Revolution organized a body of seven hundred men who pledged themselves to act together promptly for the defence of Virginia or any other colony whose rights might be invaded. Later, Washington, on taking command of the continental army, made him a brigadier-general, in which capacity he served with great bravery and effectiveness till he was killed in leading the attack upon Princeton in 1777. He was attended in his last hours by Dr. Benjamin Rush, of Philadelphia.

Washington's affection for and confidence in medical men received a severe shock in the treasonable acts of Dr. Benjamin Church, a member of the Massachusetts House of Representatives, one of the committee deputed to conduct Washington to the army, and surgeon-general and director of the hospitals in and about Boston. In the autumn of 1775, during the siege of Boston, a cipher letter was captured while in transit to a British officer, giving a description of the American forces. It was found to have been written by Church. He acknowledged its authorship and made a lame defence, but was convicted of criminal correspondence, was expelled from the House of Representatives and sentenced by the Continental Congress to be confined in a jail in Connecticut without the use of pen, ink, or paper, and no one to converse with him except in the presence of a magistrate. His sentence was subsequently commuted on account of his ill-health, and he was lost at sea while on the way to the West Indies. The distinguished services of another Massachusetts doctor, Joseph Warren, and his martyrdom to the colonial cause that same year, doubtless more than offset in Washington's judgment the treasonable acts of his professional brother.

Of personal service from physicians, Washington, whose life was a remarkably healthy one, needed little. When quite young he suffered from small-pox at Barbadoes, whither he accompanied his brother, Lawrence Washington, who went there for his health. His face always remained slightly pitted. Afterwards, during the Revolution, his troops at Morristown and elsewhere were the victims of the disease, and he provided for a general inoculation of the army, setting aside houses for hospitals for the inoculated. The popularity of the measure was doubtless increased by the fact that he had persuaded his wife, who was exposed to the disease by her visits to the army, to submit to the same operation, which she did at Philadelphia, having a very favorable time.

In 1789, soon after his inauguration as President, he had a very alarming attack of "anthrax," as it was called, doubtless a carbuncle. His medical attendant was Dr. Bard, of New York (his old friend, Dr. Craik, being at that time inaccessible). He requested a candid prognosis from the doctor, who expressed some doubt as to his recovery. This did not disturb the patient's equanimity, although his sufferings were intense. For six weeks he was obliged to lie on the right side, and after a time he had his carriage contrived so that he could lie in it at full length and so take his daily airing.

With his final illness and death, from laryngeal œdema, our readers are familiar. His old friend, Dr. Craik, was in attendance, with Drs. Dick and Brown in consultation. He took patiently the treatment which was given him, but believed he should not recover and expressed with cheerfulness and courage his perfect readiness to go.

The recent strictures of a metropolitan journal upon the medical profession of his day for having hastened Washington's death, while very likely true so far as the main question, that of bleeding, is concerned, will nevertheless bear the comment that venesection was so far a measure of domestic treatment at Mount Vernon that Washington had had himself bled by his overseer before the doctor's arrival, and considered the amount of blood drawn by that functionary, eight ounces, entirely inadequate. That a different treatment might have prolonged his life is perhaps true; that medicine, as well as most other sciences, has made a great advance since the close of the last century is a truism; but that the total abandonment of bleeding is the most important indication of this advance, is by no means true.

MEDICAL NOTES.

— According to press report, the twenty-second child was born to David Flucker, a New York longshoreman, on Wednesday of last week. Mr. Flucker is seventy-three years of age.

— The Essex Medical North Association held its semi-annual meeting May 1st, President Dr. C. G. Carleton presiding. Officers were elected as follows: president, Dr. Carleton; vice-president, Dr. Snow, of Newburyport; secretary and treasurer, Dr. Clarke, of Haverhill.

— The annual meeting of the Worcester North District Medical Society was held at the Fitchburg hotel, last Tuesday, and the following officers were chosen for the year ensuing: President, Dr. B. H. Hartwell, of Ayer; vice-president, A. L. Stickney, of Ashburnham; secretary, A. P. Mason; treasurer, E. P. Miller; commissioner of trials, F. H. Thompson; nominating councillor, George D. Colony.

— The National Association of Railway Surgeons completed its work at St. Louis, May 3, and will meet in Kansas City next year. The address of President Jackson on the benefit of union hospitals was ordered printed and a copy sent to every railroad president in the United States. Dr. John Owens offered a resolution, which was adopted, denouncing the mutual hospital aid association and national benefit associations and so-called sanitariums which collect $6, $8, or $10 a year from people on a guarantee to furnish them hospital treatment when they are sick. A number of papers were read, and then a constitution and by-laws were adopted. The following officers were elected for the ensuing year: president, Dr. J. B. Murdock, of Pittsburg; first vice-president, W. B. Dutton, of St. Louis; secretary, Dr. Siemmiens, of Fort Wayne; corresponding secretary, Dr. Lewis, of Kansas City; treasurer, Dr. Reed, of Mansfield, O.

— The Massachusetts legislature has appropriated $55,000 for the purchase of land and the erection of buildings for the uses of an epileptic hospital at Baldwinsville. This institution has until recently been supported by its friends, and it numbers among its officers many of the best men and women of the State. There has thus far been expended for its support, since its establishment in 1882, $50,000, of which $20,000 was for buildings and the remainder for running expenses. Last year the State appropriated for the buildings the sum of $15,000, and upon the strength of this ten State patients were admitted to the hospital. The new appropriation sets aside that of last year, but by the provisions of the act the State is entitled to send such a number of patients as may be agreed upon by it and the trustees, up to the full capacity of the buildings.

BOSTON.

— Dr. Charles Harrington, of Boston, has been nominated by the mayor to be inspector of milk and vinegar, *vice* James F. Babcock.

— Albert E. Pillsbury, Esq., has been appointed and confirmed to the board of health in place of William Taylor.

PHILADELPHIA.

— The 115th annual commencement of the department of medicine of the University of Pennsylvania was held at noon on May 1st, when the large auditorium of the Academy of Music was crowded to its utmost capacity. Provost Pepper conferred the degree in medicine on one hundred and twenty-four graduates, and the dental degree on fifty-eight from the department of dentistry. Prof. William Osler delivered the valedictory address, in which he eulogized imperturbability and patience as factors in professional success; briefly referred to the loss sustained by the profession owing to the recent deaths of Dr. E. T. Bruen and of S. W. Gross; and the retirement from the faculty of Prof. D. Hayes Agnew; and in conclusion, in a few impressive words, referred to the reception he had met with in coming to Philadelphia, and his regret in severing his connection with the University of Pennsylvania, as he had accepted the chair of practice in the faculty of the Johns Hopkins University. A pleasant feature of the exercises was the presentation of a large painting, seven by eleven feet, painted by Thomas Aiken, representing Prof. Agnew in the Clinical Amphitheatre, surrounded by assistants, in the act of commencing a surgical operation upon a patient under the influence of ether. The picture was presented by the graduating class, and was accepted on behalf of the trustees by Dr. S. Weir Mitchell. The venerable Prof. Agnew being called upon, briefly spoke, referring to his work at the university, which had begun fifty years ago; at the completion of the half-century he had thought best to ask to be relieved from the active labors of his chair, but he still expected to go across the river to the university occasionally. With much earnestness he addressed a few words of advice and encouragement, during which he was so overcome by his feelings as to be obliged to hastily retire to his seat to prevent his falling upon the platform. On Saturday evening, May 4th, the Penn Club gave a reception to Prof. Agnew, which was largely attended.

— On May 2nd, the members of the Philadelphia County Medical Society attended a reception given by the president, Dr. William W. Keen, at his house.

— At the May meeting of the College of Physicians, Dr. Stewart gave a very favorable report on the suspension treatment for chronic disorders of the spinal cord by Charcot's method. Especially in locomotor ataxia and in one case of chronic myelitis had good effects been observed. Dr. S. Weir Mitchell, in discussing the paper, exhibited a modification of Charcot's apparatus by which the patient is slung by the elbows instead of by the arm-pits; he thought the method worthy of extended trial.

At the same meeting Dr. Crozer Griffith read a paper on "Sulphonal." The objections to this new hypnotic he considered to be slowness of action, slow recovery from its effects, variability of dose (large doses sometimes better borne than small), and disagreeable after-effects, such as muscular inco-ordination, ringing in the ears, restlessness, nausea, vomiting, diarrhœa, and erythematous skin eruptions. He had also found that its action is uncertain; it sometimes fails to exercise any hypnotic action at all, even in the largest doses that it is thought safe to give. Dr. Mitchell mentioned a case where a papular eruption followed the administration of sulphonal.

NEW YORK.

— Much disapprobation is expressed of the refusal of Mayor Grant to reappoint to the position of president of the board of health, Mr. James C. Bayles, who by his expert knowledge of sanitary affairs is admirably qualified for the office, and under whose wise administration the health department has been raised out of the mire of politics and has won the confidence of the community. The successor of Mr. Bayles, Mr. Charles G. Wilson, whatever may be his qualifications as a man of business, is absolutely without experience (and probably knowledge) as regards matters pertaining to the public health, and little can be expected from his conduct of the office if, as is stated, his appointment is due to the influence of Edward S. Stokes, proprietor of the Hoffman House, who has a palatial bar-room in the basement of the Consolidated Stock and Petroleum Exchange, of which Mr. Wilson is president.

IN MEMORIAM.

FREDERIC WINSOR, M.D.

The Middlesex East District Medical Society held its regular monthly meeting at the house of Dr. A. H. Cowdrey, of Stoneham, on Wednesday, April 10th, when the following memorial of the late

Frederic Winsor, M.D., of Winchester, was reported by a committee and adopted by the meeting: —

The members of the Middlesex East District Medical Society unite in this expression of their sentiment upon the death of our highly esteemed brother and beloved *confrère*, Frederic Winsor, A.M., M.D., late of Winchester, Mass., the tidings of which brought sadness to every one of our hearts.

Dr. Winsor was born in Boston in 1829, and was graduated at the Boston Latin School, Harvard College, and from the Harvard Medical School in 1855. He became a member of the Massachusetts Medical Society in 1855, and of the Middlesex East District Society in 1864, and we have known him to have been one of its most efficient members for a quarter of a century. His interest was constant and abiding, as manifested in many ways by his contributions to its upbuilding and progress. He practised for a considerable time in Salem, and served his country faithfully and well as a surgeon of the Forty-ninth Regiment Massachusetts Volunteers, and was at Port Hudson; but his brightest and best professional work was done within this district, at Winchester. Here he soon acquired a large and increasing practice, and distinguished himself in many ways, not alone as a physician and surgeon, but as a good citizen. He held many positions of honor and trust in this society and in the community in which he lived, which he not only filled with credit to himself, but adorned.

We know his excellencies as a member of society in general, for his life was a many-sided one; but we feel his loss chiefly as a professional brother and a sincere and kind-hearted friend. Well trained in the schools, he was fitted for his work; knowing his power, he was confident, and inspired confidence in others; unostentatious and affable, without dissimulation, pretence, or cant; utterly unselfish and entirely devoted to those entrusted to his care, he became soon strongly entrenched in the hearts of his patients. His presence in the chamber of the sick was a benediction. He was a grand, simple, honest, warm-hearted man, a hater of sham, a follower of truth for truth's sake.

Dr. Winsor died in the maturity of his manhood, in the full tide of success in his professional career and usefulness, lamented by all of us who knew him and whom to know was but to love. He died at Bermuda, whither he had gone in quest of health and strength, and where his body was buried at his own request.

"Such was our friend, formed on the good old plan,
A true and brave and downright honest man;
He blew no trumpet in the market place,
Nor in the church, with hypocritic face,
Supplied with cant the lack of Christian grace;
Loathing pretence, he did with cheerful will
What others talked of while their hands were still;
His daily prayer, far better understood
In acts than words, was simply doing good.
So calm, so constant was his rectitude
That by his loss alone we know its worth,
And feel how true a man has walked with us on earth."

Miscellany.

THE OPENING OF THE JOHNS HOPKINS HOSPITAL, BALTIMORE.

The Johns Hopkins Hospital was opened to the inspection of the public, before the reception of patients, this week.

On Tuesday, May 7, at 11 o'clock in the morning, there were appropriate addresses in the main administration building. The address of Dr. J. S. Billings appears in full in this issue of the Journal. Invitations to be present were sent to the authorities of the city and State, to those who had rendered special services in promoting the plans of the hospital, to professors of medicine and surgery, to the chief managers of other hospitals, and to the representatives of the press.

On Wednesday, May 8, between the hours of 12 and 6 o'clock, the buildings were open to the medical profession of Baltimore, Washington, and the State of Maryland, to the medical students, to the managers of the benevolent institutions of Baltimore, to the ministers of all religious denominations, and to other persons whose pursuits have led them to take a special interest in hospital work. Cards of admission were distributed in advance.

On Thursday, May 9, and Friday, May 10, between the hours of 12 and 6 o'clock, the public generally was invited to visit the hospital.

On Saturday the faculties of the various institutions in Baltimore, the teachers of public and private schools of every kind, the students of the Johns Hopkins University, the Baltimore City College, the State Normal School, the Woman's College of Baltimore, and the Eastern and Western Female High Schools, were to be admitted.

The dispensary will be opened for the treatment of out-door patients, Monday, May 13, at 10 o'clock.

The hospital will be opened soon afterwards for the treatment of patients sent to it by the head of the dispensary.

Persons who wish to receive treatment in the hospital, at their own charge in whole or in part, may apply, by note or through their medical adviser, to the director or to the chief physician.

DR. FORDYCE BARKER'S PARIS MEDICAL DIPLOMA.

We take the following curious paragraphs in regard to the Paris medical diploma conferred upon Dr. Fordyce Barker, of New York, from the letter in the *New York Medical Record*, April 27th, written by Dr. Prince A. Morrow from Honolulu, Sandwich Islands: —

"In closing this letter I may incidentally mention a matter which will be of interest to those acquainted with the attempt made, some five years ago, to smirch the fair professional fame and personal integrity of one of the most honored members of our profession.

"It will be remembered that a charge was made before the Academy of Medicine that Dr. Barker had made a false claim to a Paris diploma. At Dr. Barker's request, a committee was appointed to examine this charge. After a thorough investigation, the committee made a unanimous report, declaring the charge to be unfounded and vindicating Dr. Barker, and their report was unanimously adopted by the academy. And now comes, in a most singular way, and from a most authentic source, additional evidence of the utter falsity of this charge.

"Dr. George H. Trousseau, to whom I have alluded, is the son of the famous Trousseau, of Paris, and inherits many of the brilliant and admirable qualities of his distinguished father. In giving me some reminiscences of his former life in Paris, he mentioned having met Dr. Barker as a guest at a dinner given by his father in Paris, and distinctly recalled the fact of his father having mentioned on this occasion that the diploma of the Faculté de Médecine had been conferred upon Dr. Barker. He also declares that he not only *saw* the diploma, but that, at his father's request, he personally carried the document to Dr. Barker's hotel and left it there, to be delivered to him upon his return.

"It was a matter of great regret to him that he had not heard of the charge against Dr. Barker until many months after it was brought before the Academy, and thus had not the opportunity to refute it, which he would gladly have done. This direct statement, coming unsolicited from such an undoubted source, although not necessary to Dr. Barker's reputation, will be pleasant to his numerous friends."

It will be remembered that Dr. Barker was vindicated by the unanimous vote of the committee on ethics, and the unanimous vote of the Academy of Medicine of New York, of the charges brought against him. Nevertheless, this corroboration of the position he took must be as gratifying to him as it is curious.

REPORTED MORTALITY FOR THE WEEK ENDING APRIL 27, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhœal Diseases.	Diph. and Croup.	Measles.
New York	1,571,558	830	338	24.36	17.40	2.64	8.40	1.44
Philadelphia	1,040,245	395	145	11.96	15.60	.78	2.86	.52
Chicago	830,000	256	92	17.55	11.70	1.17	8.58	1.56
Brooklyn	814,505	324	141	20.15	20.15	1.55	8.68	4.65
Baltimore	500,343	132	41	7.60	8.36	.76	1.52	—
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	219	74	8.74	14.72	4.56	—	.92
New Orleans	250,000	118	31	11.90	12.75	1.70	8.47	—
Cincinnati	225,000	128	—	12.18	12.18	2.34	6.24	.78
Washington	225,000	85	30	12.98	10.62	1.18	3.54	—
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	19	4	21.04	15.78	10.52	—	—
Charleston	60,145	25	7	12.00	4.00	4.00	—	—
Portland	40,000	12	1	8.33	8.33	—	—	—
Worcester	78,292	23	8	4.35	21.75	—	4.35	—
Lowell	71,518	61	22	13.12	13.12	1.64	6.56	—
Cambridge	65,552	—	—	—	—	—	—	—
Fall River	62,647	21	10	14.28	28.56	4.76	—	4.76
Lynn	53,334	18	—	—	—	—	—	—
Springfield	40,731	20	3	10.00	15.00	5.00	5.00	—
Lawrence	40,619	12	3	16.66	8.33	—	16.66	—
New Bedford	37,253	15	2	6.66	6.66	6.66	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	10	2	—	20.00	—	—	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	—	—	—	—	—	—	—
Haverhill	26,058	10	5	30.00	—	10.00	10.00	—
Taunton	25,170	10	4	20.00	20.00	—	10.00	—
Gloucester	24,263	6	2	—	—	—	—	—
Newton	21,553	5	0	—	—	—	—	—
Malden	19,774	5	1	20.00	20.00	—	20.00	—
Fitchburg	17,534	—	—	—	—	—	—	—
Waltham	17,332	8	1	25.00	12.50	—	12.50	12.50
Newburyport	13,875	5	1	—	—	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	5	0	—	—	—	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2777; under five years of age 968; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 462, acute lung diseases 428, consumption 331, diphtheria and croup 175, scarlet fever 80, diarrhœal diseases 48, measles 41, whooping-cough 33, typhoid fever 28, erysipelas 20, cerebro-spinal meningitis 14, malarial fever 15, puerperal fever 8. From scarlet fever, New York 51, Brooklyn 9, Chicago 6, Philadelphia 5, Washington 4, Baltimore, Nashville, and Lowell 1 each. From whooping-cough, New York 19, Philadelphia and Brooklyn 4 each, Baltimore and Boston 2 each, Chicago and Cincinnati 1 each. From typhoid fever, Philadelphia 15, New York 3, Chicago, Cincinnati, and Lowell 2 each, Boston, Washington, Nashville, and Charleston 1 each. From erysipelas, New York 9, Chicago 3, Philadelphia, Brooklyn, and Boston 2 each, New Orleans and Fall River 1 each. From malarial fever, New York 8, Philadelphia, Brooklyn, and Baltimore 2 each, New Orleans 1. From cerebro-spinal meningitis, New York 9, Philadelphia 2, Cincinnati, Portland, and Taunton 1 each. From puerperal fever, Chicago, Baltimore, Boston, and Washington 2 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending April 13th the death-rate was 19.9. Deaths reported 3647, infants under one year 844. Measles 174, whooping-cough 104, scarlet fever 45, diphtheria 43, fever 38.

The death-rates ranged from 13.7 in Birkenhead to 31.0 in Preston. Birmingham 22.6; Huddersfield 22.5; Hull 15.6; Leeds 24.5; Leicester, 15.9; London 17.9; Liverpool 23.3; Manchester 28.1; Nottingham 20.2; Sheffield 21.8; Sunderland 22.9; Wolverhampton 13.9.

In Edinburgh 14.9; Glasgow 29.0; Dublin 25.7.

The meteorological record for the week ending April 27, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Apr. 27, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
Apr. 21	29.90	59.0	76.0	55.0	86	68		77.0	S. E.	W.		2	19		O.	O.		1.35	.13
" 22	30.18	46.0	53.0	40.0	58	71		64.0	W.	N. W.		10	12		C.	C.			.00
" 23	30.42	44.0	58.0	34.0	43	58		50.0	N. W.	S. W.		5	15		C.	C.			.00
" 24	30.32	54.0	64.0	40.0	55	65		60.0	S.	S. W.		18	15		C.	C.			.00
" 25	30.12	62.0	70.0	50.0	62	89		76.0	S.	S.		12	12		F.	O.		1.25	T.
" 26	29.84	54.0	55.0	46.0	84	100		92.0	S. E.	N. E.		12	33		F.	R.		3.05	.47
" 27	29.51	50.0	56.0	46.0	97	97		97.0	N. E.	E.		9	16		R.	O.		23.00	.60
Means for the Week	30.04		62.0	44.0				74.0										29.05	1.10

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MAY 4, 1889, TO MAY 10, 1889.

Based on surgeon's certificate of disability, leave of absence for one month, with permission to leave the limits of the department, is granted Surgeon W. H. Forwood, Medical Department, Fort Snelling, Minn. Par. 1, S. O. 35, Hdqrs. Dept of Dakota, St. Paul, Minn., April 8, 1889.

Howard, Valery, Assistant Surgeon, relieved from duty at Fort A. Lincoln, Dak., and ordered to Fort Buford, Dak.

Crampton, L. W., Assistant Surgeon, relieved from Fort Bridger, Wyo., and ordered to Fort Lyon, Col.

Spencer, W. G., Assistant Surgeon, relieved from Fort Yates, Dak., and ordered to Fort Bridger, Wyo.

Robertson, R. L., Assistant Surgeon, relieved from Fort Buford, Dak., and ordered to Fort A. Lincoln. Par. 29, S. O. 95, A. G. O., April 24, 1889.

Borden, William C., Captain and Assistant Surgeon, U. S. Army, relieved from duty at Fort Ringgold, Texas, and ordered to report to the commanding officer at San Antonio, Texas, for duty at that post. By Par. 7, S. O. 100, A. G. O., May 1, 1889.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the society will be held on Monday, May 13, at the Medical Library, at 8 o'clock P.M. Reader: Dr. Charles Harrington. Subject: "Sanitary Conditions of some of our Best School-houses." Dr. Edward Cowles will read a paper on "The Mechanism of Insanity."

F. B. Harrington, M.D., *Secretary.*

Norfolk District Medical Society. — The annual meeting will be held at Armory Hall, 67 Warren St., Roxbury, Tuesday, May 14th, at 11 A.M. The board of censors will meet at the same place at 10.45 A.M. Examination of candidates will be held at 144 Dudley St., Tuesday, May 21st, at 7 P.M. Order of business: 1, reading of records; 2, report of committees; 3, report of treasurer; 4, election of officers; 5, incidental business; 6, communication: annual address by William P. Bolles, M.D.; 7, introduction of newly elected officers.

S. Allen Potter, M.D., *Secretary.*

DEATHS.

Died in Boston, May 6, 1889, William Read, M.D., M.M.S.S., aged sixty-nine years.

Died in Salem, Mass., May 3, 1889, William Neilson, M.D., M.M.S.S., aged eighty years.

OBITUARY.

WILLIAM NEILSON, M.D.

Dr. William Neilson, of Salem, Mass., died May 2, after a short illness. He was out five days before and went to Marblehead to visit a patient. Dr. Neilson was the oldest physician in Salem, being over eighty, and in his younger days had a very extensive practice. He was a very scholarly man and retiring in his manner. He had been one of the attending physicians at the hospital for many years. He was at one time city physician of Salem, and was active in religious movements. He leaves three sons, one a physician in Salem and one a physician in Marblehead, also a daughter.

FRANK W. ROCKWELL, M.D.

Dr. Frank W. Rockwell, one of the chief surgeons of Brooklyn, and a physician with a large general practice, died after a brief illness at his home, No. 6 Lafayette ave., April 30. He was a son of the Rev. Dr. J. Edson Rockwell, and was born near Albany in 1844. He was educated at Amherst College being graduated in 1862. He entered upon the practice of his profession in Brooklyn and steadily pursued it He was regarded as an authority in surgical matters, and was at the head of the surgical staff in St. Mary's Hospital and also St. John's Hospital. He belonged to the New York and the Brooklyn surgical societies. His fatal illness lasted for only four days and was due to his devotion to his profession. Dr. Rockwell was highly esteemed by a wide circle of social and professional friends. He left a wife and three sons.

HARVEY LINDSLY, M.D.

Dr. Harvey Lindsly, a well-known physician of Washington, died Sunday. He was born in Morris county, N. J., January 11, 1804, and graduated at Princeton. In 1858 he was president of the American Medical Association. At one time Dr. Lindsly was a professor in the National Medical College, and for a long period was president of the board of health in Washington. He was Daniel Webster's physician in the capital city. Dr. Lindsly leaves a widow, to whom he was married sixty-one years, and four daughters.

RESIGNATION AND APPOINTMENT.

Resignation and appointment at Dartmouth Medical College' The following changes have been made in the faculty of the medical college: Prof. Charles L. Dana, Dartmouth, '72, at present connected with medical schools in New York city, has been appointed lecturer on diseases of the nervous system; Prof. W. W. Seely, of Cincinnati, has resigned his place as professor of ophthalmology, and his place is filled by the appointment of Dr. David Webster, of New York City. Dr. Franklin H. Hooper, of Boston, instructor in the Harvard Medical School, has been appointed to the chair held by the late Dr. Elsberg.

BOOKS AND PAMPHLETS RECEIVED.

New York Cancer Hospital, Eighth Avenue and 106th Street. Fourth Annual Report for the year 1888.

The Perineum: Its Anatomy, Physiology, and Methods of Restoration After Injury. By Henry O. Marcy, A.M., M.D., LL.D., of Boston, U. S. A. Reprinted from Transactions of American Association of Obstetricians and Gynecologists. September, 1888. Philadelphia, 1889.

Eleventh Annual Report of the State Board of Health of the State of Connecticut for the year ending November 30, 1888, with the Registration Report for 1887. Relating to Births, Marriages, Deaths, and Divorces. Printed by order of the Legislature. New Haven. 1889.

An Elementary Treatise on Human Anatomy. By Joseph Leidy, M.D., LL.D. etc., Second Edition, rewritten, with 495 illustrations. Philadelphia: J. B. Lippincott Co. 1889.

Diabetes: Its Cause and Permanent Cure, from the Standpoint of Experience and Scientific Investigation. By Emil Schrice, M.D., Translated from the German by R. L. Tapel, A.M., Ph.D. English Edition revised and enlarged by the Author. Philadelphia: P. Blakiston, Son & Co. 1889.

Practical Lessons in Nursing. Diseases and Injuries of the Ear: Their Prevention and Cure. By Charles Henry Burnett, M.D., etc. Philadelphia: J. B. Lippincott Co. 1889.

Rectal and Anal Surgery; with Description of the Secret Methods of the Itinerant Specialists. By Edmund Andrews, M.D., LL.D., and Edward Wyllys Andrews, A.M., M.D. 2d Edition, revised and enlarged, with illustrations and formulary. Chicago: W. T. Keener. 1889.

Original Articles.

SOME HISTORICAL AND STATISTICAL FACTS PERTAINING TO THE USE OF ARSENIC AS A POISON.[1]

BY S. W. ABBOTT, M.D.

The very great increase in the number of deaths from poisoning by arsenic in Massachusetts within the past five years is a sufficient reason for a thorough discussion of the subject by this society. The drier details relating to that view of the subject, which has fallen to my lot, have less practical importance than those topics which pertain to the chemistry, pathology, and the purely medico-legal side of the subject; hence my treatment of the question will necessarily be brief.

Recent philosophers maintain that it is neither the duty of the state to protect the lives and health of its subjects, nor to take sanitary measures against infectious diseases, on the ground that such diseases constitute a natural method of weeding out the weaklings of the race. This is only the old Malthusian doctrine in a new dress. They would therefore condemn vaccination, as well as other methods of preventing the spread of disease, including the prevention of deaths by violence. The misapplication is evident, since infectious disease attacks and destroys the robust and the strong as well as the weak: small-pox, typhoid fever, and diphtheria invade the homes of the strong and the healthy as well as those of the feeble, and those of the rich as well as those of the poor. Deaths by violence occur to men of high and low estate. Railroad trains, carrying loads of passengers of all classes, collide with each other, or crash through bridges, without regard to the social or the physical condition of their living freight.

If the suicide is commonly reckoned a worthless member of society, and if the surviving community considers itself better off without him, is society therefore absolved from the obligation of restraining him by the intervention of such laws as may be found to have a restraining effect? It may be urged that the suicide will usually effect his purpose, and that if you deprive him of his fire-arms he will resort to throat-cutting, and if you remove his razor from his reach he will obtain a package of "Rough on Rats," and if you reduce the facility for obtaining poison he will resort to some other means. The enacting of laws for the prevention of this class of deaths is a duty which the state owes to its inhabitants.

The sale of intoxicating liquors has very properly been surrounded with innumerable limitations by statutory enactments. Why should arsenic have been allowed to be sold without hindrance until the present year?

If a score of deaths had occurred in Massachusetts during the past year from hydrophobia, muzzles and dog licenses would have had a lively demand and the whole race of dogs would have been decimated. But the deaths from arsenic considerably exceeded a score.

The following cases, both reported from the Suffolk district, serve to illustrate the need of carefully enforced and stringent laws relative to arsenic: —

Mrs. ——, aged thirty-two, "living happily with her family and having no assignable motive for the act of suicide, took 'about a tablespoonful' of 'Rough on Rats' in water at 6.30 P.M., June 13, 1887. Three-quarters of an hour later, having meanwhile changed her dress, and put on clean clothing, she called her husband and told him fully and freely what she had done. When asked why she had done it, she said, 'I don't know. I must have been crazy. I went like a flash to the desk and got the box, and stirred it up and drank it.' A doctor was called, to whom she repeated the story and now added her regret; she willingly complied with all means for her relief." She died in less than eight hours.

A young lad, aged sixteen, after partaking of his supper, complained of pain, and confessed to his sister that he had heard of the article known as 'Rough on Rats,' and had put some of it upon his strawberries at supper time, to find out how it would affect him. He died in a few hours.

When the use of arsenic has become so common that the housewife finds it conveniently laid away in the desk or sideboard, and the children can readily obtain it for experiment, the statutes already enacted should be vigorously enforced and made still more efficient, if possible.

Historical Sketch. Although the native sulphides of arsenic were well known to the Greeks and Romans, arsenious acid does not appear to have been known in Europe before the time of Geber (9th century). Reference to the metal may be found in the works of Paracelsus. Some writers contend that it was discovered at a still earlier date by Albertus Magnus (13th century), but the alchemist Brandt first revealed its characteristic properties in 1732, and also the methods for its manufacture.

The poisonous qualities of some form of arsenic were undoubtedly known at much earlier periods, before its chemical nature was recognized. In matters both political and domestic it played a terrible part, and in Italy and other southern countries of Europe its use became very common for secret poisoning. The art of poisoning was practised by fortune-tellers, and so skilful did they become that in some instances it was believed that the poisoner could fix the period for the death of the victim with considerable accuracy. Tofana of Palermo confessed to having destroyed the lives of six hundred persons by poisoning. The celebrated "acqua tofana" and the "acquetta di Napoli" were undoubtedly arsenical solutions employed for murderous purposes. Madame Brinvilliers, of Paris, who flourished in the 17th century, carefully studied the effects of these satanic potions, and then by their use took the lives of her father, brothers, and many other people.

In the earlier part of the present century a woman of wealth who lived in northern Germany, Margaretha Gottfried, practised the art of poisoning for fifteen years without detection. The death of fourteen persons was traced to her, and twenty others were known to have taken her poisonous draughts without their proving fatal.

In the same period a Bavarian servant named Zwanziger gave arsenic to fifteen persons without exciting suspicion. Christison says that "the practice of such an art requires not only the knowledge of a dexterous toxicologist, but also of a skilful physician; for success must depend on the exact imitation of some natural disease." In a paper upon "homicide by poisoning" read by Dr. Wooster Beach before the Medico-Legal Society of New York, the writer cites several instances which would appear to contradict this assertion, so far at least as it is applied to those persons who have in past years resorted to wholesale poisoning as an art.

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[1] Read before the Massachusetts Medico-Legal Society, October 3, 1888.

The Somerville poisoner had in her confidence an arrant quack, who is known to have had a pretty thorough knowledge of certain other poisons beside arsenic, opium in particular.[2]

She had carefully imitated her predecessors in crime, and had it not been for the potent aid which Marsh and Reinsch and Fresenius and a host of their disciples have given to the forensic physician, who shall say that Mrs. Robinson might not have appeared in the pages of history by the side of Tofana and Borgia and Brinvilliers as their coequal in crime. It is due to modern toxicology that the horrid schemes of such monsters have been frustrated and the prevention of wholesale poisoning has been attained.

At the present day arsenic as a destroyer of human life has very largely passed out of the hands of the murderer, who sought the lives of many, into those of the suicide, whose object is his own destruction.

As an illustration of the limited knowledge of toxicology of the last century as compared with that of the present day, the following extract is taken from the chemical evidence presented at the trial of Mary Blandy for the murder of her father by arsenical poisoning in 1752.[3]

"A portion of the powder found at the bottom of the gruel administered to Mr. Blandy was given to Dr. Addington. The latter divided the powder and gave a part to Mr. King, a chemist of Reading. Both of these gentlemen experimented upon the powder and concluded that it was white arsenic. On being asked 'Why do you believe it to be arsenic?' Mr. King replied: 'For the following reasons: 1. This powder has a milky whiteness; so has white arsenic. 2. This is gritty, and almost insipid; so is white arsenic. 3. Part of it swims on the surface of cold water, like a pale, sulphureous film, but the greatest part sinks to the bottom and remains there undissolved; the same is true of white arsenic. 4. This, thrown on red-hot iron, does not flame, but rises entirely in thick, white fumes, which have the stench of garlic and cover cold iron, held just over them, with white flowers; white arsenic does the same. 5. I boiled ten grains of this powder in four ounces of clear water, and then, passing the decoction through a filter, divided it into five equal parts which were put into as many glasses. Into one glass I poured a few drops of spirits of sal ammoniac; into another, some of the lixivium of tartar; into the third, some strong spirit of vitriol; into the fourth, some spirit of salt: and into the last, some syrup of violets. The spirit of sal ammoniac threw down a few particles of pale sediment; the lixivium of tartar gave a white cloud, which hung a little above the middle of the glass; the spirits of vitriol and salt made a considerable precipitation of a lightish-colored substance, which, in the former, hardened into glittering crystals, sticking to the sides and bottom of the glass; the syrup of violets produced a beautiful green tincture. Having washed the saucepan, funnel, and glasses used in the foregoing experiments very clean, I provided a fresh filter. I boiled ten grains of white arsenic, bought of Mr. Wilcock, a druggist in Reading, in four ounces of clear water, and filtering and dividing it into five equal parts, proceeded with them, just as I had done with the former decoction. There was an exact similitude between the experiments made on the two decoctions. They corresponded so nicely on each trial, that I declare I never saw any two things in nature more alike than the decoction made with the powder found in Mr. Blandy's gruel and that made with white arsenic. From these experiments, and others which I am ready to produce, if desired, I believe that powder to be white arsenic.'"

Miss Blandy was condemned and executed, denying to the last that she had any knowledge of the poisonous character of the powder which she gave to her father.

Among the references to earlier chemists of the present century it is stated that Orfila claimed that he could produce arsenic from the common soil, and another French chemist said that he could produce it from the legs of chairs. Herepath, on the contrary, experimented largely on the bodies of men, of animals, and of soils, and said that he never had been able to detect arsenic therein, unless it had been intentionally administered for criminal purposes.

Dorvault very properly attributes the common use of arsenic as a poison to the fact that it is so well known in the arts and processes of manufacture. It is well known to the dyers of textile fabrics, to the makers of wall-paper, to the taxidermist, to the agriculturist, and to the housewife.

Its similarity in color to that of many useful and common articles of household use, such as sugar, flour, salt, and soda, renders it more liable to cause harm by its accidental substitution, and also gives greater facility to its employment for suicidal as well as criminal purposes. It is for this reason that the British Act "to regulate the sale of arsenic"[4] provides that arsenic offered for sale, not upon medical prescription, shall be colored "with soot or indigo in the proportion of at least one ounce of soot, or a half-ounce of indigo, to a pound of arsenic."

The French laws relating to the sale of poisons date from an early period, the first of which we find any record being that of July, 1680. These early laws do not appear to have been efficient in consequence of their indefinite provisions. Statutes of a more precise nature defining certain poisons, especially arsenic, were enacted in 1846 and 1848. These laws restricted its use and provided limitations which were intended to prevent its use for criminal purposes. Laws have also been enacted in Germany in 1865, in 1879, and also in the past year, with specific provisions limiting the sale of arsenic in every possible direction, whether sold in its crude form or as entering into the composition of paints, papers, textile fabrics, and other articles of common use.

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[2] Supplement to Seventh Annual Report of State Board of Health, Lunacy, and Charity, 1885, page 191.

[3] Hargrave's State Trials, vol. x. page 1

[4] 14 Victoria, chapter 13, June, 1851.

The almost total absence of laws in the United States regulating the sale of arsenic undoubtedly accounts to a considerable extent for the increase in the mortality from arsenical poisoning. In reply to a circular from the British Government, issued in 1883, their representative at Washington stated that he had addressed letters to the authorities of each of the United States, and all of the replies received, thirty-three in number, stated that "there was no State legislation or municipal enactment bearing on the matter." On the other hand the same inquiry showed that among the older civilized countries there were scarcely any which had not enacted some restrictive legislation upon the subject. Among these laws the Royal Statute of Sweden *relative to the care and sale of arsenic and other poisonous substances and articles* is very complete and thorough in its limitations. Among its numerous provisions it requires that all "apothecaries and other persons engaged in trades or industrial pursuits, using arsenious acid for their business, shall keep an arsenic-book" for recording all their transactions with this poison. It also requires that "arsenious acid shall not be sold or disposed of in any shape for the purpose of destroying flies or rats and other noxious animals, or the embalming or preserving of dead bodies, no matter who may have prescribed or ordered the same."

There may be said to be three methods of dealing with the arsenic question by law. *First*, the do-nothing plan, which has practically been the method in this State until the enactment of the Poison Law of 1888. This is the method which is aimed at by the manufacturer and the dealer in arsenic generally. It would appear from the testimony of eminent experts who have been summoned by manufacturers, that arsenic should be reckoned as a comparatively harmless substance, instead of the deadly poison which we know it to be, from our own frequent experience as medical examiners. It is usually the manufacturer and the wholesale dealer who is most strenuous in his opposition to the enactment of any laws bearing on the subject.

Second. There is another principle which has gained considerable ground especially in recent years; that of prescribing "allowable limits" for poison as forming a constituent part of many of the articles of household use, not excepting articles of food. This is the refuge of the manufacturer when driven to the wall by the demand for a stringent law, and it seems to me to be a dangerous principle. It is the manufacturer who alone asks for it, and it is entirely in his interest and not in the interest of the health and the lives of the people. It is in the interest of one and not of the thousand, but singularly enough it is often the one who succeeds in making the law, and not the thousand. In a neighboring State this principle of establishing an allowable limit for a poisonous article has already taken root in the shape of a regulation of the State Board of Health to the effect that the sale of certain preserved vegetables colored with sulphate of copper shall be allowed, as long as this ingredient shall be limited to a certain definite quantity per pound of the vegetables so colored. Now, since several millions of cans of these articles are annually imported from France, there must be a large sale for such commodities. Copper is not an essential ingredient of the food of man, nor has it any nutritive value whatever. There may be, no doubt, a demand for articles of food of a brilliant green color, but this is not a natural demand, but one which has been created and fostered by the manufacturer. The æsthetic quality in matters of diet, by which an article is made to appeal to the eye, is not its essential quality. The less, then, this principle is allowed to gain a foothold, the greater safety will there be to the consumer. It may be urged that such articles can be safely sold with a guarantee from the manufacturer, but we have already had sufficient evidence that such a guarantee, especially from a foreign manufacturer, would be utterly worthless.

Third. The safest course would be to enact such laws as should limit the sale and the use of arsenic as well as other deadly poisons in the most stringent manner possible, and, so far as the common articles of household economy, and especially of food are concerned, to exclude them altogether. There is certainly no actual necessity for putting poisonous colors into food, nor for coloring wall-papers or articles of clothing with arsenic. To apply the principles of preventive medicine a little more closely we might add that wall-papers might be dispensed with entirely. A clean tinted or whitened wall, either of plaster or of wood, without paper of any sort, is not only more healthful, but in the end more economical than a papered wall. If, then, the use of arsenic were to be excluded from the commodities of life, we should certainly find that the deaths from poisoning, suicidal, homicidal, and accidental, would be largely diminished.

Turning now to the statistical side of the question I shall show that so far as Massachusetts is concerned the recent law relative to the sale of poisons was not enacted too soon.

It is only through the aid of the valuable reports of the Medical Examiners of Massachusetts that accurate information can be obtained upon this special form of poison, since, with very few exceptions, the registration returns of different counties do not convey special information as to the character of the poison employed in cases of death by violence.

The number of deaths from arsenical poisoning in Massachusetts since the enactment of the Medical Examiners Law of 1877 is as follows: —

	Homicidal.	Suicidal.	Accidental.	Totals.
1877*	....	2	....	2
1878	....	2	1	3
1879	....	6	....	6
1880	2	3	2	7
1881	....	3	...	3
1882	....	2	....	2
1883	....	3	1	4
1884	....	16	....	16
1885	....	12	1	13
1886	6	14	2	22
1887	1	35	....	36
Total of each class..	9	98	7	114

* Six months.

By this table it appears that there has been a rapid increase in the deaths from arsenical poisoning, from two cases in the half-year of 1877 and three in 1878, to twenty-two in 1886 and thirty-six in 1887. If the five and a half years 1877–1882 are compared with the five years 1883–1887, the average annual number in the latter period is found to be more than four times that of the former. This ratio must be slightly reduced by the fact that the returns of the earlier period were voluntary and comprised about two-thirds only of the actual number. With this reduction the increase would still be nearly in the ratio of three to one.

As compared with the living population, the deaths from arsenic were 1.8 per 100,000 in 1887.

As compared with the total mortality they were 8.8 per 10,000.

These figures present a striking contrast to those of England, where, in a population of more than twenty-seven millions, there were only thirty deaths registered from arsenical poisoning, either homicidal, suicidal, or accidental, in the last three years of registration, 1884, 1885, and 1886, which indicated an annual average of .37 per million of the living population, or but one thirty-second as great as that of Massachusetts for the three years 1885, 1886, and 1887. This fact suggests the probability that more efficient restrictive laws have had a large share in limiting the number of deaths from this cause in England.

When we consider the general question of *suicide* by poisoning, as presented by the statistics of different countries, it appears that the ratio of suicides by this method to the whole number of suicides in Massachusetts is much greater than that of other countries.

In England the ratio of suicides by poisoning per million of the population was 9.9 in the last three years of registration. In Massachusetts it was 20.2 for the three years 1885, 1886, and 1887.

In Italy, out of each one hundred suicides by men in 1875, there were five by poisoning; among women there were ten.

In Prussia (1869–1872) the suicides by poisoning were but 2.8 per cent. of all suicides.

In France (1876–1880) out of 10,000 suicides there were but one hundred and ninety-two by poisoning, or 1.9 per cent., as compared with 23.7 per cent. in Massachusetts.

The suicides by poisoning in France were relatively more than twice as frequent among females as they were among males, the numbers being one hundred and fifty-nine per 10,000 among males and three hundred and forty-four among females.

In the following table are presented the statistics of suicide, and of suicide by poisoning, and by arsenical poisoning, for England and for Massachusetts for the last three years of registration in each.

Suicides.		Suicides by Poison.		Suicides by Arsenic.		Ratio of Suicides to population.		Ratio of Suicides to total deaths.		Ratio of Suicides by poisoning to Suicides by all methods.		Ratio of Suicides by poisoning by *Arsenic* to Suicides by all forms of poisoning.	
						Per Million		Per 10000		Per 100		Per 100	
England. 1884-1886.	Mass. 1885-1887.	England. 1884-1886.	Mass. 1885-1887.	England.	Mass.	England.	Mass.	England.	Mass.	England.	Mass.	England.	Mass
6304	511	801	122	19	61	78	85	30.6	44.	12.7	23.8	2.37	50

Out of a total of two hundred and eighty cases of death by poisoning collected by Briande, he states that the poison used in one hundred and ninety-four, or 69 per cent., of the cases was some form of arsenic. In the greater number of cases it was given in soups or a similar form of food.

Time between the taking of arsenic, and death.— The length of time which elapsed between the swallowing of the poison and death was stated in twenty-nine cases reported in Massachusetts for the past three years, and varied from six hours to six days. No other case is stated to have lived more than twenty-five hours. The average time was fifteen hours and forty minutes. If the excessively long case of six days is excluded, the average time of the remaining cases was eleven hours and five minutes.

The amount of poison taken at once is variously stated from a teaspoonful to a tablespoonful, or from one-third to one whole box of "Rough on Rats."

Certain inquiries are suggested by these data, and first it may be asked,[5] Why do different countries present such striking differences? This difference is by no means imaginary, as is the case in some scientific questions; for example, that of so-called spontaneous combustion, a hypothesis which Casper and Liebig have both shown to be untenable, although a matter of common report in France in early times.

In other forms of death by violence are also found similar differences among different countries. For example, death by overlaying is a very common form of death among infants in the cities of England, while it is comparatively rare in this country.

Have we then adopted this form of poisoning as a national peculiarity? The comparative statistics quoted would seem to show that we are perhaps unwittingly gaining an unenviable notoriety in this direction. Certain reasons for such frequency have already been hinted at in the prevailing and common use of poisons of this character for the destruction of insect-pests and other vermin, as well as rats and other animals. The relative cheapness of arsenic is another reason for its common use, and hence the consequent facility with which excuses can be framed for its purchase by persons meditating suicide.

Another inquiry which naturally suggests itself is, Why should the suicide so often select a method so extremely painful as that of death by arsenical poisoning?

Popular ignorance upon the subject of poisons, and the knowledge that death is an almost invariable result of the administration of liberal quantities of arsenic, undoubtedly furnish the reply. It is not a part of the forensic physician's duty to instruct the people in the principles of euthanasia, so far as poisons are concerned, otherwise we might expect a considerable increase of suicides by painless methods already too familiar in other countries.' Possibly it is the prospect of a painful death that may deter some would-be suicides from committing the act.

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[5] Casper's Forensic Medicine, vol. i. p. 302.

SOME OBSERVATIONS ON ŒDEMA, WITH TWO CASES OF IRREGULAR ŒDEMA COMPLICATING MALARIA.[1]

BY D. E. KEEFE, M.D., SPRINGFIELD, MASS.

THE subject of œdema is so important, both as a symptom and disease, to say nothing of its value as a factor in prognosis, that I thought a few observations relating to it might tend to elucidate the subject and to freshen our memories. For these reasons, I hope that, should it not prove entertaining, it may at least not prove entirely unprofitable. Œdema may be defined as an effusion of a serous fluid into the cellular tissues, whether subcutaneous, submucous, subserous, or into the interstices of organs.[2] This definition would exclude effusions into serous membranes due to inflammatory action, such as we find in peritonitis, pericarditis, etc., for the reason that such effusions are not generally serous, alkaline, colorless fluids, but contain also leucocytes, epithelial and pus cells, as well as fibrine and often blood corpuscles.

Different names are applied to œdemas of different location and extent, but for all practical purposes I may say that the following list embraces substantially all the different varieties of œdema: —

a. Œdema due to portal obstruction, or liver œdema.

b. Œdema due to cardiac disease, heart œdema.

c. Œdema due to renal disease, or kidney œdema.

d. Essential œdema of Wagner.

Œdemas from other causes worthy of mention, though their causative relation is disputed, are, those from exposure to cold and damp, the sudden suppression of an habitual discharge, the rapid cure of a cutaneous disease and extreme anæmia and debility. The four last named are considered to induce œdema by exciting congestions in internal organs from the afflux of blood to them, on its being driven from the surface, and in this way disturbing the renal as well as other functions; or in consequence of abnormal states of the blood and tissues. It is doubtful, however, if either of them can of itself actually occasion œdema. It is very likely indeed that many or all of them exist at the same time and contribute each its part to the production of the undesired result.

Let us now consider the four principal classes of œdema and inquire into the cause of each and the manner of its inducing the condition. Ascites or abdominal œdema may also with propriety be called hepatic or portal dropsy, for it is caused by anything obstructing the portal circulation, either before its entrance into the liver, in the liver itself, or before the blood is returned by the hepatic veins into the vena cava ascendens. This is easily accounted for, when we remember that the portal vein is the great channel through which is returned all the venous blood from the intestines, the spleen, stomach, and in fact from all contained in the abdomen, but the kidney and bladder. I would include, in the list of agents obstructing the hepatic and portal circulation, cancer of the pancreas, aneurism, tuberculous glands, growths in the lesser omentum, perihepatitis, which, by the thickening it causes, may completely obstruct the flow in the portal vein while passing through the transverse fissure, or by slowing the current cause a thrombus to form and thus occlude the vessel I may add pressure upon or obliteration of the branches of the portal vein within the liver by disease, *e.g.*, cirrhosis, etc., localized peritonitis as reported by Dr. Henry C. Coe, of New York.[3] Any and all of these cause ascites by the venous stasis, distending the vessels and encouraging exudation through their walls. Moreover, absorption is discouraged by the pressure of the distended vessels, the pressure of the fluid on the lymphatic circulation, and the lessened lumen of the vessels passing through the diseased liver, from contraction or connective tissue infiltration, etc. This kind of œdema is always primary in and confined to the abdomen, but as it persists and increases in quantity it acts as a mechanical obstruction to the return circulation from the limbs by pressure on the inferior vena cava. It may in this manner cause œdema of the lower extremities, or even anasarca. When the ascites accumulates rapidly the limbs may exhibit signs of the disease as soon as the abdomen, for the reason just mentioned.

Cardiac œdema. — Œdema may be produced by disease of the right heart, as tricuspid regurgitation, by offering a direct obstruction to the return circulation, or indirectly by left heart disease, as obstruction or regurgitation at the mitral valves damming back of the pulmonic circulation, and through the pulmonary artery obstruction as in right heart disease; to which is added the embarrassed general circulation as a consequence of the extra work the heart is called upon to do in its endeavor to keep up the pulmonic circulation. Heart œdemas like those caused by the liver appear first at the points farthest from the centre of the circulation. But since the feet are these points in regard to the heart, as the lower part of the abdomen is to the liver, so the dropsy in the former appears first in the feet and ankles, as it does in the abdomen in the latter, and for the same reason, viz., gravity. I would say in this connection that it will be readily appreciated that a tumor, or anything pressing on the ascending vena cava will cause the same kind of œdema as heart disease. Of course I would not be understood as intimating that heart œdema is confined to the feet, only that it first appears there.

Kidney œdema.— This is a kind difficult to understand, and it is a very difficult task to explain its etiology. It is irregular in its appearance both as to location and quantity of the effusion. It frequently appears first under the eyes, where there is much loose cellular tissue, and later in the arms and feet. At other times it is fugitive in character, first appearing in one place and then in another. There is often a small amount of œdema of all the tissues; in other words, we have anasarca. This general œdema may increase to such an extent that life may be terminated by the interference with its functions. On remaining in a given position for any length of time that part most dependent becomes most œdematous, but this is not always true. I would explain the more general character of renal dropsies by assuming in the first place an enervated condition of the nervous centres, from the poisonous effects of the urea. Secondly, from the impoverished condition of the blood due largely to the albuminuria. Thirdly, we have generally a lessened excretion of water, and hence a more watery condition of the blood; and, lastly, we have usually in chronic kidney disease, not a local condition as in valvular heart disease, tumor of the abdomen, or a perihepatitis, but a general constitutional disease, there being a thickening of the fibrous coat of the arteries, and hence an obstruction in the arterial system and stasis in the venous. All these circumstances make the conditions most favorable to exudation and unfavorable to reabsorption.

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[1] Read before the Springfield Society for Medical Observation.

[2] Quain's Dictionary of Medicine.

[3] New York Medical Journal, September 29, 1888.

I would now draw your attention to the essential œdema of Wagner.[4] This is more frequently found in children than adults and generally occupies the entire surface of the body. Although we do not know its etiology it is thought that cutaneous, vascular and blood changes and cardiac asthenia are among the most frequent causes. Heredity also seems to be a factor in its production, the father or mother having been rachitic, while in other cases a brother or sister has been subject to general œdema. "Neither autopsies nor experiments on animals have served to explain the genesis of this disease. It is considered doubtful if the vaso-motor or trophic nerves have any part whatever in its production." The generalized œdema accompanying febrile diseases is also a kind as to the cause of which we are entirely ignorant, though there are many speculations in this regard.

I will relate briefly two cases of irregular œdema occurring in my practice as a complication of malarial disease. Perhaps no disease presents itself under such varied forms or with such multiplicity of complications as malarial disease. I find on looking through the leading text books on practice, as well as the leading medical journals, that there is no mention of œdema as a complication of acute malaria. Alone among them is Loomis, wherein I find on page 853 as follows: "Œdema of the cellular tissues and an accumulation of fluid in the serous cavities are common attendants of chronic malarial cachexy." But while he alone mentions it in connection with chronic malarial disease, in common with the others he does not mention it as occurring with the acute. While I find a slight reference to malarial cachexy in Quain, Loomis is the only one giving any definition of, or any considerable description of, chronic malarial infection. We now come to the question, what is chronic malarial cachexy? It may be described as follows: —

> A person long resident in a malarial district, who has had repeated malarial attacks, or who may have had no regular paroxysm, but who loses flesh and has an enlarged spleen, with destruction of the red corpuscles and consequent anæmia and a general decline in health; such an one has malarial cachexy.[5]

I cannot think that either of my cases are included in this category, for one had been in this country only a year and came from a non-malarious climate. With the exception of three attacks of tertian malarial fever her health had been good. The other one never had a malarial attack until I was called, though she had been affected with œdema a short time previously, and it was her only symptom. Hence, I must conclude that they were not cases of chronic, but of acute, forms of the disease.

Case 1. At 2.30 p.m., April 20th, I was called to attend Miss C., aged twenty-four, a domestic. Found her extremely restless, had a chill previous to my arrival and complained of nausea and vomiting; left hand wrist greatly swollen, pitting on pressure, as were both ankles also; temperature 104½°, pulse 110, pain in head, back, and limbs; had been told she had dropsy, which greatly frightened her. Urinary examination proved negative, as did physical examination of chest and abdomen. By exclusion, therefore, as well as the general severity of the onset, I was forced to the conclusion that I had malaria of the tertian type to deal with. I accordingly gave quinine in antiperiodic doses, and was pleased to find a ready response. There was no return of the paroxysm and she returned to her work in a few days. If there were any doubt as to the correctness of the diagnosis it was speedily dispelled; for in about six weeks I was again called and found her suffering from a similar attack, only that the œdema was limited to one hand and wrist. The second attack yielded to the same treatment employed in the first, and she has to this time remained in good health.

Case 2. Mrs. S., a Swedish lady, the mother of four children, age thirty-eight. Has resided for a year in an intensely malarious district. In common with her husband and children she had suffered from several attacks of tertian malaria. The disease had always quickly responded to treatment, and with the exception of a slight amount of anæmia, she was in her usual good health. I was called to attend her the last time, not for malaria but œdema under the eyes and of the right arm and wrist. The arm was somewhat painful. Although the eyes and arm were all she complained of, upon inquiry it was elicited that she had occasionally chilly feelings along the spine and vermicular movements and weakness of back and limbs, with head and back ache. Physical and urinary examinations were made and proved negative. As in case No. 1, I diagnosed malaria and ordered a thirty-grain dose of quinine on the first day, and nine grains with iron and arsenic daily for ten days. The œdema and all other symptoms disappeared in three days.

While I do not pretend to be able to explain how malarial poison acts on the organism to produce such exudations, I would suggest that it is due to the poison of the disease acting on the nerve centres, just as I have explained regarding urea in kidney diseases, and through the sympathetic ganglia paralyzing the vaso-motor nerves, thereby dilating the arterioles and thus causing an afflux of blood to one part. In other words it causes an inco-ordination on the part of the vaso-motor nervous system. This superabundance of blood, the veins of the part find it more than usually difficult to return to the circulatory centre, in consequence of the congestion existing in nearly all the important viscera and consequent pressure on and narrowing of the lumen of the veins and lymphatics passing into and through them. For these reasons stasis and transudation are encouraged and produced.

The points of interest, as it seems to me, in these cases are: the importance of keeping in mind the possibility of malarial disease as a causative factor in irregular œdema; its speedy yielding to anti-malarial treatment; and the advisability of resorting to such treatment in doubtful cases.

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[4] Rev mens des maladies de l'enfance, July, 1888.

[5] Loomis. Practical Medicine.

SURGICAL STUMPS AND ARTIFICIAL LEGS.

BY A. S. HUDSON, M.D., STOCKTON, CAL.

Nearly twenty years ago a prominent New York surgeon wrote on this subject and said:[1]—

"It must be remembered that the stump is to receive direct pressure in progression from the artificial limb, and hence the necessity of carefully securing such flaps and their adjustment as will render the face of the stump firm and resisting. No stump can be regarded as adapted to take direct support which is traversed by a cicatrix."

This statement shows that surgeon labored under the erroneous idea that the artificial leg sustained the weight of body through the end of the stump. Such is the way of thinking by the majority of people. But it is a mistake. Of a dozen or more leg-makers known to the writer, but two make any provision for such bearing. Palmer and Osborne claim patent or patents for a device to sustain such pressure. A few old calloused ends may endure more or less of such bearing, but the majority of the great army of disabled pedestrians find the abridged member continues tender and irritable under even slight pressure; and is often as sensitive as the eye. The severed end of the tibia and femur are each so small as to make a poor substitute for the foot of a plantigrade walker. At best, when the superimposed weight is directed upon the broad surface of the thigh integument, either by means of belts or a wood socket, the soft and delicate flesh is slow to adapt itself to the new function imposed upon it. Many breaks and repeated damage befall that part ere it performs its duty without grief or pain.

While the pedal prop does not sweat and groan under continuous exertion, the abated portion does. The normal strength which formally belonged to it is greatly diminished. With all the helps art can furnish, the bereft fragment is forever disabled beyond any compensation human genius can bestow. Therefore the artificial leg and arm are poor apologies for nature's product. But poor as they are, the pedal splice is better than none, and better than crutches.

Limbs of art are the therapia of lost members. They relieve but do not cure. They soften the long life of hard calamity, if they do not shorten it. They help to conceal misfortune's scars from the gaze of vulgar eyes. They console and oppose despair. They seem to clothe physical hurts in vestments of forgetfulness, and dull the edge of the chagrin accident entails.

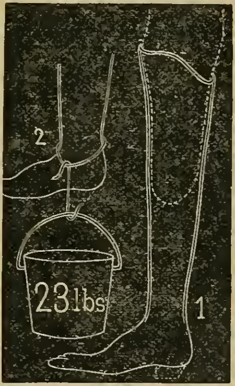
The efforts of the leg-maker are hampered by bungling surgery. Amputations below the knee and through the gastrocnemius are apt to leave a stump uneven, pouched, and puckered. There is now no need of this. A smooth, even, and symmetrical stump can be made as easily as a distorted or nodulated one.

It is now nearly a quarter of a century since Dr. A. T. Hudson, surgeon of the Twenty-sixth Iowa Regiment, made an important contribution to this department of surgery. While in field and camp he worked out a new method of amputation, which happily meets the ancient difficulty, and which fails not to secure the most desirable result. He calls it *"the combination plan."* It is specially adapted to the knee and sections below it. His operation was illustrated and published in the Boston Medical and Surgical Journal in 1870.

We observe those who still follow the old defective methods must in vain try to make the small anterior tibial flap meet and match the large posterior gastrocnemial flap.

The result is inevitable, that a seamed, unequal, or nodulated end is bequeathed the unlucky patient, which reminds one of a pouched and irregularly shaped tomato.

Fig. 1 of the cut herewith attending this paper, is a diminished sample accurately representing the disabled member and the end thereof which was made by "the combination plan." It is not in the least exaggerated. As is seen, the stump is in position, supported by the supplemental leg. The latter is carefully made to fit the former.



This leg is constructed on a different plan, and with different material, than has been hitherto employed. It is divested of hinges, straps, and belts. It is put on and off like a boot, but more quickly. By a simple device, not necessary here to describe, it is held in place without fear of its dropping off while on duty. Retaining, as far as possible, the spirit and tone of the normal extremity, the ponderable matter has been greatly eliminated. Hence this pedal substitute weighs but one pound instead of four to six pounds of those in general use.

Fig. 2 merely represents an experiment to test its trustworthiness to hold its place during the actuating function of walking. The tin bucket suspended to the ankle part was loaded with weights, and the leg found to resist the pull of twenty-three pounds.

A curious physiological fact heaves in sight concerning the use of artificial limbs, or especially with the one the cut portrays. The feeling of ease and sense of comfort incident to the proper fit between the stump and socket confer confidence upon the ability to perform its motor work. The wearer walks with an assuring tread. He stamps fearlessly. He alights from a vehicle upon the ground with a reckless thud. He is surprised to observe such a jolt seems to be better sustained by the brief member than by the sound one.

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[1] American Journal of Medical Sciences, Jan., 1870.

Why is this? It seems to me the explanation is to be found in the fact of dissolved continuity between the long bones and the ground. Almost every one has experienced the more or less profound concussion of the physical system when the foot strikes the ground stiff-legged, from a longer reach in the step than was expected.

The vertical bones of the inferior extremities, being posed end to end, one above the other, transmit the resulting impact from the base on to the encephalon.

As the factitious leg is attached to the stump through the outer surface of the elastic integument, the impact of the concussion is comparatively lost and rendered harmless.

It is therefore quite evident, if the stump end were to rest on a floor or partition in the leg, the concussive jar must be likewise felt as in the normal extremity.

Recently a prominent surgeon and professor in San Francisco consulted a man wearing an artificial leg with the inquiry, "How much of a stump should be left in view of adapting thereto a mechanic's substitute?" What answer he got we only know by the amount of human being left after the amputation. A diseased foot and ankle were to be removed: the result, as now seen, is a pouchy and puckered stump, six inches long below the patella, to the detriment of the victim. There is reason to believe the entire lower extremity between the knee and ankle could have been saved, and thus lessened the resulting disability. Such random and unscientific surgery is reprehensible. It is on a level with stupid meat-chopping. It sinks the chirurgical art below the grade of the nail-driving artisan. The longer the stump the better and the more power of command, ease, and facility of movement does the patient have over the supplemental member.

An essay devoted to the lame theme of artificial limbs may not be strictly medical, yet it is not foreign thereto. The article in the *Philadelphia Quarterly* from the pen of the New York surgeon mentioned in the outset of this paper, betraying as it did that surgeon's erroneous views on the vicarious-leg side of the subject, gave evidence that artificial legs and the medical and chirurgical arts were kindred topics. It indicated a prevailing lack of knowledge in that direction by the faculty. It seemed to justify, if it did not call for, light and discussion thereon.

However, it is hoped this narrative of a few limping facts as they run, like views a-foot, may not prove a bootless task. Its brevity makes it but little more than a foot-note.

— The "local" column of the country paper sometimes puts things a little awkwardly, as thus: "——— ———, M.D., is endeavoring to add to his professional skill at a hospital in New York City."

FIVE CONSECUTIVE SUCCESSFUL CASES OF VAGINAL HYSTERECTOMY FOR MALIGNANT DISEASE.[1]

BY DR. E. W. CUSHING.

I will not enter upon the subject of diagnosis, nor relate the histories of the cases at this time, but I wish to call the attention of the society to the facility with which the whole of the disease can be removed by hysterectomy, in suitable cases, and to point out the limits within which that operation is applicable, as I frequently receive letters requesting information on this subject, or see patients who have unnecessarily travelled long distances to seek for surgical aid, when the disease is too far advanced for any operation to afford more than temporary relief, although an earlier diagnosis, and a greater faith on the part of the family physician in the efficacy of operative treatment, would certainly have led them to seek aid at a time when an operation would have saved many of them.

These specimens of cancerous uteri removed by vaginal hysterectomy show very clearly how unsafe it is to trust merely to the ordinary operation of an amputation of the cervix, even if made through apparently healthy tissues. Besides the case in which the disease originated in the fundus, in one of the four other cases the cancerous degeneration had spread upwards along the mucous membrane, in a way which could not have been detected prior to the removal of the whole organ; in the other cases a "high" amputation of the cervix would have been necessary in order to have removed all the tissue which was clearly diseased. Now a high amputation of the cervix is both difficult and dangerous, fully as difficult and as dangerous as is a vaginal hysterectomy in cases where the corpus is not enlarged, and evidently useless where the latter is involved. In a high amputation the vagina must be separated from the cervix, all around, the bladder must be dissected away from the anterior part of the collum, and the latter amputated at the level of the internal os. The great danger here is hæmorrhage, and so skilful an operator as Schröder lost something over 7 per cent. of his cases of high amputation, although his later results were much better than his earlier ones. The modification which Prof. W. H. Baker has introduced into the operation of high amputation for cancer, consisting of the removal of a conical piece of the corpus, extending nearly to the fundus, followed by a thorough use of the actual cautery, lessens considerably the danger of hæmorrhage, and increases largely the probability that all the diseased tissue is destroyed. Unfortunately, however, it is very difficult for those who are less skilful than the author of this method to be sure just how far the action of the cautery extends, as the wall of the corpus is of variable thickness, not easily determined.

Whenever, however, the dissection and separation of the cervix, which is a necessary part of these operations, has been performed, it is easy to clamp the broad ligaments, and thus, by removing the whole of the diseased organ and by securing the whole vascular supply, the best chance for permanent immunity from relapse, as well as the surest guarantee against hemorrhage, is given, without material increase of the immediate danger.

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[1] Read before the Surgical Section of the Massachusetts Medical Society, March 6, 1889.

In general, it may be said that vaginal hysterectomy can be performed in all cases in which either the high amputation of the cervix, or Baker's operation, is indicated, and it may also be performed in cases where, by reason of implication of the corpus, the latter operations are useless. The limitations are that the uterus must be movable, the vagina and the region of the base of the bladder free from disease, and the broad ligaments not infiltrated, nor the glands infected If the corpus is enlarged, there must be a sufficient width of the vagina to permit of its extraction. The patient must also not be so anæmic and reduced by hæmorrhages as to be unable to endure the shock of the operation.

I have had five cases of vaginal hysterectomy, the first one for adenoma, which was reported to the Massachusetts Medical Society last June, and four subsequently for carcinoma originating in the cervix. All recovered from the operation without accident, and in fact by a remarkably painless and comfortable convalescence; none of them have had any relapse as yet, although of course the time is as yet too short to conclude that the disease will not recur.

In the first case the operation was commenced after the German method, and the broad ligaments were tied off with silk; as they did not seem quite secure, however, clamps were also applied, after the method which Dr. Doleris strongly recommended to me. The clamps gave rise to so little trouble, and so evidently controlled the vessels securely and favored drainage, that in all the subsequent operations clamps were employed; in the last two cases no ligatures or stitches whatever were employed. The clamps used were the ordinary Spencer Wells' pattern, such as are used in ovariotomy.

Instead of clamping the ligaments in one mass, as is done by Doleris, Greig Smith, and others, I was led from the necessities of the first cases, in which it was impossible to reach the upper border of the broad ligaments, to apply the clamps to the latter in sections. After thorough cleansing of the vagina, and sometimes after preliminary curetting and cautery of the decomposed tissues, the operation is performed under continuous sublimate irrigation, as follows: —

The uterus being well drawn downward and forward an incision is made in healthy tissue in the posterior vault of the vagina, about two inches long and curving around the cervix. With the fingers and blunt instruments an opening is then made to the peritoneum; this is incised and the finger introduced into the pouch of Douglas, as recommended by Martin, in order to examine the broad ligaments and to find out whether there is any foci of infection in the latter which would contraindicate further operation. The broad ligaments being found free, the incision is carried around the whole cervix, cutting merely the mucous membrane.

Next the bladder is dissected off from the uterus, using chiefly the fingers, until the finger in the pouch of Douglas can be made to feel the one in front, the thin part of the middle portion of the right broad ligament only intervening. Through this thin tissue the lower finger is gradually thrust thus isolating the whole fleshy portion of the ligament, including the uterine artery. This is then firmly compressed in a stout Wells' clamp and severed from the uterus, thus facilitating the repetition of the same performance on the left side.

The uterus can now be pulled down much farther than before, but is still held by some parts of the ligaments which have not been divided. To whatever is felt to retain the uterus on either side, a light pair of compression forceps is then applied, the clamped tissues are severed, and the corpus is delivered, either by simple traction, or by prying it out with hooks, after Martin's method. Attached to the cornua are the tubes, and beyond these the ovaries, which can be conveniently drawn down and the pedicle secured with clamps, or sewed off with the cobbler's stitch with catgut, as was done in three of the above cases.

No attempt at union of the wound in the roof of the vagina is necessary or desirable; the intestines do not prolapse, being retained by the omentum, and the vagina being occupied by the clamps. Iodoform gauze was used in two cases, but it only complicated the recovery, retarded the discharge of the secretions, and impeded the removal of the clamps. Of the latter the smaller pairs were removed after forty-eight hours and the larger pairs on the subsequent day.

As stated above, the convalescence after vaginal hysterectomy is remarkably easy and painless; the intestines, which are not at all disturbed by the operation, quickly shut off the region of the wound by an adhesive inflammation. The opening in the vault of the vagina contracts and heals without difficulty, leaving a smooth scar. The women rapidly recover their strength and return to their homes, rejoicing to be saved, even if only for a time. The happiness of a woman thus suddenly freed from the disgusting features of such a foul disease, restored to her home and her family, to hope and to usefulness, is something indescribable, and although it is known that many cases must suffer relapse, yet as a rule, the recurrence is internal and free from the peculiarly distressing features which make the sufferers from cancers of the uterus so profoundly unhappy and so loathsome to themselves and to all who are about them.

It is difficult to see why any one should oppose such an operation, and I think that the time is past when any defence of vaginal hysterectomy for cancer is necessary. The disease is originally local, the relapses are caused by infection of the neighboring parts; the principal factor in causing such infection is delay, and delay is most unjustifiable. The women thus afflicted are worse than dead already, they have everything to gain and nothing to lose, they are conquered by an enemy from which there is no other escape; and even were the operation a desperate one, which it is not, of them it might be truly said: —

"*Una salus victis nullam sperare salutem.*"

—Dr. C. E. Simmons, who is trying to secure $143,350 from the executors for medical advice to the late Samuel J. Tilden, figures up the sum by charging $50 a visit for 2,200 visits, and $50 a day for holding himself in readiness to devote his exclusive attention to Mr. Tilden.

REPORT OF PROGRESS ON DERMATOLOGY.

BY G. H. TILDEN, M.D.

HERPES ZOSTER GANGRENOSUS.[1]

At a meeting of the Association of Physicians in Vienna held February 15, 1889, Kaposi presented two instances of an uncommon type of cutaneous disease. The first case was that of a woman twenty-seven years of age, who came to the hospital a week previously. In the region of both breasts were rows of small sloughs, with irregular rounded edges and rather sunken below the level of the skin, and on the belly were scattered keloidal scars. Over the region of the stomach a portion of skin, several centimetres in width, was somewhat elevated, and through the reddened epidermis the greenish color of the necrotic corium could be seen. There were also situated upon the breasts small gangrenous and hæmorrhagic vesicles and spots. The malady began five days before entrance into hospital. About a year before, the same patient had been in the hospital suffering from a similar attack, the cutaneous lesions at that time being situated principally upon the right breast, the epigastrium, and also on the forehead, cheeks, and nose. This patient had suffered from seven or eight attacks of this disease during the course of her life, and the cutaneous manifestations had always been of the same character, varying only in their location. These lesions caused deep losses of cutaneous substance, which finally healed with the formation of dense cicatrices.

The second case was that of a woman who presented in the neighborhood of the left elbow a strip of necrotic skin two centimetres wide and from three to four centimetres long, sharply bordered and superficial; around it were isolated necrotic vesicles. The general effect was such as might be produced by cauterization of the skin with sulphuric acid or caustic potash. Over a year before, however, the same patient had been in the hospital, with an ulceration of the lower part of the cheek. She stated that it began as a bleb upon the cheek, and that she had applied an ointment given to her by a female quack. It was supposed, at the time, that the ulcer was caused by some caustic contained in the ointment which had been used. The quack was found and all her ointments confiscated and subjected to examination. None of them, however, were found to contain anything deleterious.

In the year 1882 Neuman exhibited another example of this malady: a woman, who presented large sloughs upon the arms and breasts, and the case was then regarded as an instance of spontaneous gangrene of the skin.

Doutrelopont also[2] has reported a case offering similar cutaneous manifestations, reddish maculæ which eventually became necrotic. In all of these cases, at certain stages of evolution of the cutaneous lesions, the greenish color of the necrotic corium could be seen shimmering through the unbroken epidermis, a phenomenon which is, of course, not present in cases where the cutaneous sloughs are due to the action of caustic. Kaposi is of the opinion that these cases are cases of herpes zoster following an atypical course, in that the disease occurs in cycles or repeated attacks. In view of the fact that all of these cases occurred in women, and that in one case there were very marked symptoms of hysteria, he suggests that possibly hysteria may be regarded as a cause in certain cases. That hysteria is competent to cause the changes in the nervous system which give rise to the lesions of the skin occurring in zoster he considers to be illustrated by certain cases of pemphigus, which are undoubtedly of hysterical origin.

ARSENIC KERATOSIS OF THE SKIN AND ARSENIC CANCER.

Hutchinson[3] advances in this article two propositions, first that the prolonged internal use of arsenic may seriously affect the nutrition of the skin, and among other changes may produce warty or corn-like indurations, and, secondly, that if under these conditions the internal administration of arsenic be continued, these "arsenic corns" may assume a tendency to grow downwards and develop into epithelial cancer. The evidence as to the truth of these assertions consists in the details of six cases.

The first is that of a gentleman, sixty years of age, who was affected with malignant disease of the right tonsil and of the cervical glands, to whom large doses of arsenic had been given with the intent of restraining the progress of the disease. For several months he had taken twelve minims of Fowler's solution of arsenic three times a day. While under this treatment, he became emaciated and suffered much from neuralgia of the stomach. The skin, which had up to this time been perfectly healthy, became everywhere of a brown, earthy tint and covered in part with scaly psoriatiform patches. This scaly condition of the skin was most marked upon the elbows and backs of the knuckles. The palms of the hands had become dry, slightly horny, and covered with little pits or depressions where the epidermis had broken down. In some spots the epidermal layers were thickened into small, hard corns.

The arsenic was at once discontinued and the pains in the stomach ceased, while the condition of the skin definitely improved. Upon resumption of arsenic, the skin became again affected in the same manner. The patient, who was affected with cancer before taking arsenic, did not develop any cancerous disease in connection with the "arsenic corns." He died of his original malady some time after being seen by Hutchinson, who regards the condition of the skin produced in this case by arsenic as being "exactly like that which in the next case proved to be introductory to cancer."

The next case mentioned by Hutchinson in support of his theory is that of a gentleman who, after being a sufferer from psoriasis for about twenty years, was attacked by epithelial disease of the hands, which occurred in regions previously occupied by horny outgrowths for several years. This gentleman eventually died from carcinoma of several internal organs, after undergoing amputation of the right hand and of the fore and middle fingers of the left hand for the removal of the epitheliomatous changes which had taken place in them.

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[1] Allgemeine Wiener Med. Zeit., No 8, 1889.

[2] *Vide* Dermatological Report in the Journal for October 28, 1886.

[3] Transactions of the Pathological Society of London, vol. xxxix., 1888.

This case is well known to many physicians in Boston, and is fully described by Dr. White in an article entitled "Psoriasis, Verruca, Epithelioma, a Sequence," published in the *American Journal of Medical Sciences* for January, 1885. After making copious extracts from this article, Hutchinson says he has nothing to add to Dr. White's account, except to suggest that the verrucæ or "corns" which preceded the development of epithelioma in this case were themselves caused by the long-continued use of arsenic for the cure of psoriasis.

The third case is that of a man aged thirty-four, who for a long time had been taking arsenic for the cure of psoriasis. His hands were covered with numerous whitish spots which were slightly raised, like soft corns. These corns were more especially marked upon the palms and where the fingers rubbed together. The soles of his feet were in a similar condition. He had noticed this condition of the skin for about eighteen months, and after he had been taking arsenic for some years. Arsenic was continued, and after being in the hospital for about six months, he developed an ulceration upon the scrotum, the appearance of which was preceded by the formation of a corn in the same spot. This ulcer presented an indurated border, was recognized as epithelial cancer, and was excised four months afterward. There was no recurrence of the disease seven months after excision.

The next case was that of a lady who, while being treated for a severe and recurrent type of pemphigus, acquired the habit of taking arsenic. The inner aspects of her hands and fingers became "very rough." When twenty-five years of age she came under the care of Dr. Albutt for a large open ulcer behind the crest of the ilium on the left side. There had been, previously to the development of this ulceration, a roughness of the skin at this spot and there was a secondary glandular swelling in the groin. Subsequently a tumor appeared in the skin over the inner aspect of the thigh. The glandular swelling eventually ulcerated and, together with the original ulceration, resembled in appearance a tomato, as to color and shape, with indurated and everted edges. The patient died, but no microscopical examination of the tumors was made.

Another case is that of a man aged fifty-five years, who for many years had been taking arsenic as treatment for psoriasis. During a long time he had been troubled with a tendency to the formation of corns upon the hands and feet, and the skin in general became dry and harsh. The skin of the sole of one foot was dry and rough, and over the ball of the great toe were two ulcers the size of sixpenny bits, and surrounded by thickened skin. These ulcers were preceded by the appearance of hard corns, and proved very rebellious to treatment of all kinds. They were eventually cured by free excision and cauterization with chloride of zinc. The microscopic appearances showed hypertrophy of the epithelium merely.

Two other cases mentioned in Dr. White's paper are quoted, and Hutchinson concludes by saying that the question to be considered is whether there be any real connection between the skin disease in these cases and the cancer following it, and if so, in what it consists. The reply suggested by the writer is that the bond of connection is to be found in the influence of arsenic given for the cure of the skin disease.

It seems highly improbable that psoriasis, however protracted, should in any number of cases result in cancer, and clinical experience does not support such a conclusion. The parts affected in the majority of these cases are precisely those which psoriasis does not attack. It is exceedingly rare for common psoriasis to show itself on the palmar surfaces, its favorite site being the extensor surfaces, and when the hand is involved it is generally the back. Yet in most of these cases which have been mentioned, the palmar surfaces were affected, and keratoses, which are unknown as a part of common psoriasis, occurred late in the disease, as a precursor of the cancerous process. The first case of all demonstrates the pernicious effect which arsenic may have upon the skin, and cases are often seen in which the integument has become dry, harsh, and muddy during the use of this drug, and, occasionally, instances occur where a great increase of cutaneous pigment is the result. It would appear that the influence of arsenic, when used to saturation during long periods of time, is to lower the nutrition of the skin and render it more susceptible to ordinary forms of irritation. Local pressure appears to cause the formation of corns upon the palms and soles in an unusual manner. The adjacent surfaces of the fingers also are affected in the same way. The writer considers that in all cases in which, during the use of arsenic for the treatment of any disease of the skin, the palms and the soles become rough and corneous, this is an indication that the use of the drug should be stopped.

EXPERIMENTAL RESEARCHES IN THE PATHOLOGY OF LUPUS.[4]

After giving the well-known arguments for and against the assumption that lupus is tuberculosis of the skin, Eve reports two instances in which he inoculated the ears of rabbits with lupus material taken from a human being. This inoculation produced a slowly spreading localized ulceration, in both instances unattended by general symptoms or signs of general infection. One of the statements made in connection with the problem as to whether lupus is tuberculosis of the skin, being that inoculation of lupus upon animals has never produced lupus, but merely generalized tuberculosis, the writer is of the opinion that the positive results of his experiments show the contrary. Unfortunately these local ulcerations were not examined microscopically, the diagnosis being purely clinical, so that the demonstration is not so complete as it might be, although the writer says that it can hardly be denied that the pathological process produced in the ears of the two rabbits by inoculation was true lupus.

RELATION OF ERYTHEMA MULTIFORME AND ERYTHEMA NODOSUM TO RHEUMATISM.[5]

After a general discussion of this subject and a statement of several cases bearing upon it, Garrod gives his conclusions as follows:—

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[4] Trans. Path. Soc. London, 1888, vol. xxxix.

[5] St. Bartholomew's Hospital Reports, vol. xxiv., 1888.

1. Both erythema multiforme and erythema nodosum occasionally appear in direct association with rheumatic fever.

2. They are usually attended by some degree of arthritis.

3. The arthritis which accompanies these erythemata may have any degree of intensity, from the severe joint lesions of acute rheumatism to the slightest joint pains.

4. Collateral evidence, such as the presence of chorea or old heart lesions, is sometimes obtained pointing to the rheumatic nature of the slighter joint lesions.

5. Active cardiac lesions may accompany erythema with the slightest arthritis and probably occur sometimes in the absence of joint symptoms.

6. Erythema without joint lesions is not uncommonly met with in patients who have previously suffered from rheumatism, but in some cases there is no indication of any association with rheumatism. In a word, it appears probable that erythema multiforme and erythema nodosum are often or even usually manifestations of the rheumatic process, and their appearance should always lead us to suspect such causation. We are not, however, justified in concluding that such eruptions have always this origin, nor in concluding from their presence alone that the patient is the subject of rheumatism.

Clinical Department.

ANTISEPTIC IRRIGATION OF THE KNEE-JOINT FOR CHRONIC SYNOVITIS.[1]

BY M. H. RICHARDSON, M.D.

THE following cases were treated at the Massachusetts General Hospital by Dr. J. Collins Warren and myself in the autumn and winter of 1888–9. The method employed was not a new one.

Many such operations had been done abroad, especially in Germany, with such marked success that I was led to employ the same means. Chronic effusions into the knee-joint have been, in my experience, very disabling to the patient, and liable to produce disorganization of the cartilages or other serious consequences. The ordinary treatment,—compression with or without aspiration, rest, splints, and so on, has rarely been productive of a cure or even of lasting benefit.

One of the first cases I ever treated was that of a woman of about middle age, whom I first saw in the dispensary in 1877. She had an enormous effusion into the knee-joint, which ordinary treatment at her house failed to relieve. I sent her into the Massachusetts General Hospital, where she was kept in bed for a long time and the usual methods of relief tried without any benefit. The joint was aspirated and compression with sponges and fixation on splints tried without any benefit whatever. She finally disappeared. Some few years ago she again appeared at the hospital with the joints in a very much impaired condition. The lateral ligaments were so much stretched that there was a flail-like motion to the joint. I was quite convinced by this case, among others, that a chronic effusion of any size into the knee was a very serious matter, and that more radical measures were called for if failure followed a reasonable employment of the simpler methods of treatment.

In the following case I made use of a 5 per cent. solution of carbolic acid. The same method employed by me was used by Dr. Warren in his cases. The result was extremely gratifying, and the usefulness of the joint fully restored.

CASE 1. August, 1888. Christina N., æt. twelve, had had for two years a chronic swelling of the knee which followed a blow. There was a distinct scrofulous history. When admitted the knee was greatly distended, with the usual signs of a large effusion. Under ether a large aspirating needle was introduced into the knee-joint above the patella, on the outer side. About five ounces of clear, straw-colored fluid was withdrawn, and the same amount of a 5 per cent. solution of carbolic acid introduced. After massaging the joint well, to be sure that the fluid had come in contact with every portion of the cavity, suction was again used and about eight ounces of milky fluid withdrawn. The action of the acid in coagulating the albumen contained in the effusion caused so much precipitation as to interfere quite seriously with the action of the aspirator, the fluid running slowly and with difficulty. After emptying the joint as completely as possible, the limb was placed upon a ham splint and pressure applied. On the following day there was some pain in the joint and the temperature was slightly higher. Careful examination of the urine showed that there was no absorption of carbolic acid. On the third day there was no pain, and very little fluid could be detected in the joint. At the end of two weeks she was discharged with a plaster bandage on. Two months later she was seen and examined. There was no return of the fluid, and good use of the joint.

CASE 2. Service of Dr. Warren. Irwin L. B., æt. seventeen. December, 1888. Family history good. For one year the left knee had been swollen. The joint was found to be full of fluid and there was some pain and inconvenience. Operation by Dr. Warren. One and a half pints of clear, yellow fluid withdrawn. Five ounces of 5 per cent. solution of carbolic acid injected and after a time withdrawn. Ham splint, antiseptic dressings, and elastic pressure bandage applied. The temperature rose to 102° on the third day. No evidence of absorption of carbolic acid. On the ninth day swelling of the joint much diminished. After a month there was no swelling. Good use of the limb. No signs of a return of the disease.

CASE 3. Service of Dr. Warren. Johanna A. M., æt. forty-two. January, 1889. For thirty years had had suppuration in the left knee, and for the last year and a half weakness and swelling of the right. No pain and no history of injury.

General condition of patient poor. Left knee greatly enlarged. Tibia increased in size. Ankle bent backwards. Right knee much enlarged. Bulging of the supra-patella pouches and floating patella. Operation by Dr. Warren. Needle introduced into the right knee joint on the outer side opposite upper edge of the patella, and six ounces of gelatinous fluid withdrawn. Three ounces of 5 per cent. solution of carbolic acid injected and withdrawn through needle. Ham splint, elastic pressure, and bandage. Very little pain or disturbance followed. Nine days later bandage removed. No fluid found. Fourteenth day discharged with knee in good condition.

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[1] Read before the Surgical Section of Suffolk District Medical Society, March 6th, 1889.

Although the immediate effects of this treatment are good it is too soon to be able to say that there has been a permanent cure. It is quite safe to say, however, that we may expect a permanent cure if we continue this treatment and make use of repeated aspirations should the fluid reappear. It is quite important to use a needle of considerable size because of the precipitation of the albumen in the joint-fluid by the carbolic acid. The best point to introduce the needle is just above the patella on the outer side through the fibres of the vastus externus.

Although this procedure is extremely simple, yet it ought not to be employed indiscriminately. I should never use it till the ordinary means had failed, and then only with the greatest care, especially as to cleanliness and asepsis.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

GEORGE H. MONKS, M.D., SECRETARY.

Meeting, Wednesday evening, March 6th, Dr. E. H. Bradford in the chair.

Dr. C. B. Porter showed a patient of his, a little girl, upon whom he had very successfully operated for

EXTROVERSION OF THE BLADDER.

Mr. Fisk (of the firm of Fisk & Arnold), introducing the subject of

AMPUTATIONS AND ARTIFICIAL LEGS,

showed, by invitation, specimens of artificial legs as made by them and explained their special features. He said that for the manufacture of artificial limbs he much preferred wood to rubber. He also gave his ideas as to the most satisfactory stumps for the attachment of these limbs.

He said that by far the best place for an amputation of the leg to be made, so far as the satisfactory attachment of a false limb was concerned, was at a point about six or seven inches below the patella. A satisfactory result, with a good, smooth gait, could be guaranteed in almost every case. If the stump is longer than this there is almost always some trouble with the circulation. (Mr. Fisk here introduced to the section an assistant of his, who wore two artificial legs upon stumps amputated about six inches below the patella. This man could walk, run, go up and down stairs, and with surprisingly little peculiarity in his gait.) Amputation at the knee-joint was satisfactory, if a good thick flap could be got for a pad; but this was difficult, and the usual result was great inconvenience from corns and excoriations. Amputations in the vicinity of the ankle-joint ought likewise to be made so as to ensure thick pads, else great discomfort would result. The tendo Achillis frequently gives trouble, also, by subsequent contraction, drawing the heel well up, stretching the cicatrix, and changing the point of pressure. While an amputation in the neighborhood of the ankle-joint is in certain cases the best for a patient of the poorer classes, who needs a useful limb only, a patient who can afford to pay for appearance and comfort would be best suited with an amputation performed at the point of election, six or seven inches below the patella. As for amputations of the thigh, an artificial limb can be satisfactorily fitted to almost any stump. Mr. Fisk has even fitted a limb satisfactorily to a thigh stump, where the amputation was made two inches below the perineum. As a rule three to five months must pass after an operation before the stump is in a condition for a false leg to be worn. Until the apparatus is adjusted it is well to keep down œdema and preserve circulation in the stump by bandaging.

Dr. J. C. Warren said that Mr. Fisk had several times kindly exhibited his collection of false legs before the class at the Medical School at the lecture on amputations. Dr. Warren said that it was his custom to show, on this occasion, many cases of stumps resulting from the various amputations of the lower extremity, from the foot up. He said that the examination of these cases had considerably influenced his views as to the desirability of the different amputations, and that he had now practically the same opinion as to ankle-joint amputations as that just expressed by Mr. Fisk, viz., that certain ankle-joint amputations were the best for the poor, whereas amputation at the point of election (*i.e.*, about seven inches below the patella) was much to be preferred for those who could afford to procure a good artificial limb.

Dr. M. H. Richardson reported several cases of

CHRONIC EFFUSION INTO THE KNEE-JOINT TREATED BY THE INJECTION OF A 5 PER CENT. SOLUTION OF CARBOLIC ACID.[1]

Dr. W. Ingalls related eight cases, in each of which aspiration followed by compression and absolute rest resulted in recovery. The amount of fluid withdrawn ranged from three to seven or eight ounces. Three of the cases were acute.

Dr. E. W. Cushing said: It may be of interest in this connection to state that about three years ago I had a case of distention of the hip-joint in a young boy, with well-marked symptoms. At that time I was associated with Dr. Marcy, who had had considerable experience in the injection of carbolic acid solution into the knee-joint.

I aspirated the hip-joint and drew off about one ounce of turbid serum, and then injected a 3 per cent. solution of carbolic acid and let it run out, and then again, and let it run out again. The immediate results of this were excellent, and the disease, to the best of my knowledge, was stayed. I think, however, that a $2\frac{1}{2}$ per cent. solution will accomplish as much as a stronger one, without the disadvantage of the coagulation. A coagulum protects bacteria rather than harms them.

The Chairman: This irrigation of joints, as Dr. Richardson has said, is not a new one, but I think he is one of the first to apply it here in Boston, though Dr. Marcy antedated him. It has been done quite extensively in Germany and to a certain extent in England, though not so much in France. Carbolic acid has given place in Germany, I think, to corrosive sublimate for these injections. The strength used is generally about 1 to 5000. A large number of very successful cases have been reported. In some cases, particularly when rice-bodies are present, the most satisfactory results are obtained by cutting into the joint and washing out in that way.

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[1] See page 488 of this Journal.

Dr. Richardson: I supposed in using the carbolic acid that the 5 per cent. solution had some special effect on the synovial membrane. I did not use it with any idea of killing germs, or for disinfection, but for the same reason and in the same way, that we inject carbolic acid in cases of hydrocele. I think it has some specific effect on the distended synovial surfaces.

The Chairman: I think that was the original idea for which it was used; the irritation of the membrane was intended to start up healing, and the reason it was discontinued was the danger of death from carbolic acid poisoning. Then corrosive sublimate was substituted, and so far as I know there have been fully as good results with that, showing that it is the injection of some irritating fluid to which the beneficial result is due. More recently injections of iodoform and glycerine have been used with the idea of attacking the tuberculosis.

Dr. E. W. Cushing presented a communication upon

FIVE CONSECUTIVE SUCCESSFUL CASES OF VAGINAL HYSTERECTOMY FOR MALIGNANT DISEASE,[2]

and exhibited several specimens.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

Ninety-first Annual Session, Baltimore, Md., April 23, 24, and 25, 1889.

Second and Fourth Days.[1]

Wednesday, April 24th. — Second Day.

THE ANNUAL ORATION

was then delivered by Professor William Osler, fellow of the Royal College of London, late of the University of Pennsylvania, and recently elected professor of practice and theory of medicine of Johns Hopkins University. He spoke principally of the need of State boards of examiners to decide on the fitness of medical graduates to practise. He said: "In this country a man can follow the vocation he pleases, subject only to such restrictions as may be necessary for the public welfare. The right to regulate the practice of medicine rests with the State, and I believe it is everywhere acknowledged that this right comes within that general public power which extends protection to the lives and limbs of the citizens. At present this power is very variously exercised in different States. In many no regulations whatever exist: any one who wishes, irrespective of qualifications, can practise. In a majority of States, however, there are restrictions which demand evidence on the part of the practitioner that he has studied for a longer or a shorter period at an incorporated school. Practically, the rule prevails that, with a diploma from a chartered school, he can begin at once, without any hindrance other than that relating to registration. The educational duties of the State generally do not here extend beyond the system of common and normal schools. Special education does not receive support from the public revenues. Schools of law, medicine, engineering, theology, all the special branches of study, are private enterprises, chartered by the State, and maintained by fees from pupils or by the munificence of private friends. Certain privileges are granted to these institutions by the State, the most important of which, in the medical school, is the recognition of the diploma as a qualification for practice. So unsatisfactory, however, has this system proved, that there is, on the part of the public and the profession, a growing sense of the necessity for a radical change, as shown by the number of States in which bills have either been already passed or have been before the legislatures dealing with the problem.

"It is universally conceded that the basis of legislation is the necessity of protecting the people against the depredations of ignorant graduates and of quacks. The aim is to provide a minimum standard of qualification to be required of all persons who desire to follow the calling of physician or surgeon.

"If we look around upon those engaged in the practice of medicine, we find that an overwhelming proportion belong to the regular or so-called old school; a second small division profess to follow Hahnemann; while a third, still smaller, neither one thing nor the other, but a little of both, and profess a judicious eclecticism. These three bodies have schools, medical journals, and in each State have a more or less complete organization. In the sight of the law all are equal. This unhappy division of the body medical is not limited to professional matters, but is complicated with ethical questions of the highest moment. The outcome of it all has been that there are hostile camps and bitter war.

"The homœopathists and the eclectics will, I think, concur in the necessity for a full and proper curriculum of study in the great branches of medicine, and know no 'isms.' The differences only become glaring when we touch the subject in which, among members of each of the so-called schools, the greatest individual differences of opinion exist. The divergence of opinion on this one branch separates absolutely the different classes of practitioners from each other. I do not say that this should not be so. Antiquated dogmas are professed in opposition to a rational and free science.

We cannot, however, escape from the important fact that, in the eyes of the law, we stand equal, and if we wish legislation for the protection of the public, we have to get it together, not singly. I know that this is gall and wormwood to many, but it is a question which has to be met squarely and fairly. When we think of the nine or ten subjects we have in common we may surely, in the interest of the public, bury animosities and agree to differ on the question of therapeutics. In connection with license to practise, there are it seems to me, three courses open: —

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[2] See page 481 of this Journal.

[1] Continued from page 458. Owing to the length of the report, portions of it are unavoidably omitted.

"First. A continuance in the plan at present prevailing, which makes the college the judge of the fitness of the candidate, and State supervision is only so far exercised that the diplomas are registered if from legally incorporated schools.

"Second. The appointment by the State or by parties so deputized of a board of examiners which shall, irrespective of diplomas, examine all candidates for the license.

"Third. The organization of the entire profession in each State into an electorate, which shall send representatives to a central parliament, having full control of all questions relating to medical education, examination, and registration. These various plans are at present in operation in different parts of the Continent. Colleges have practically had a monopoly for years, as the diploma has carried with it the privileges of registration. To all intents and purposes, the medical schools of the country are private organizations, and have direct pecuniary interests in the size of the classes. These chartered corporations are wholly irresponsible, without supervision by the State, the profession, or the public. It would not be difficult, without fear of just rebuke, to bring a railing accusation against them for persistently acting in their own interest, and not in the interest of the public; but the time has passed for this. Yet it is surprising to think that so many men, distinguished in every way in their profession, cultured and liberal, still cling to and even advocate the advantages of an irresponsibility which has made the American system of medical education a by-word among the nations."

Section on Practice of Medicine.

Dr. William B. Canfield, Chairman.

Dr. Canfield took up the following subject:—

I. THE RELATION OF DUSTY OCCUPATIONS TO PULMONARY PHTHISIS.

He began by saying that the pulmonary diseases caused by the different kinds of dust had received a variety of names according to the kind of dust inhaled, but collectively they were all covered by the name "pneumonoconiosis." Ever since Koch's discovery of the tubercle bacillus and the gradually improved classification of lung diseases, there seemed to be doubt whether these dust diseases were tuberculous or not. The dust particles inhaled by miners in badly ventilated mines gradually overcame the action of the ciliated epithelium, and penetrated to the alveoli of the lung, whence they found their way into the subepithelial layer, where, unless rendered harmless or devoured by the greedy phagocytes, they set up a fibroid condition of the lung. Most writers agree that the fibroid condition is a barrier to the growth and multiplication of the bacillus.

He then related the case of a miner, who had a fibrosis of the lungs, and in whose sputa bacilli were always found at every examination, and yet this man improved and is now well. His conclusions from this case were:—

1. Patient had no previous history of, or predisposition to, tuberculi.
2. He contracted a disease with which tuberculosis is supposed to be very rarely found.
3. He had tubercle bacilli in abundance in his sputa.
4. He is now entirely well.

DISCUSSION.

Dr. W. S. Forwood, of Darlington, Md., said that what was called "flint disease" by the workmen was very common in the quarries of Harford County. It begins insidiously with a cough, but not like consumption. It is generally fatal, and ends like consumption. In answer to Drs. R. Winslow and A. K. Bond, he said that at the end of one year the lungs were permanently affected.

Dr. J. T. Wrightson, of Newark, N.J., said that lung trouble was very common and fatal among the hat makers of his city, but it was attributed more to drinking than to the dust.

Friday, April 26th—Fourth Day.

Section on Anatomy, Physiology, and Pathology.

Dr. William H. Welch, Chairman.

The Chairman took for his subject—

HYDROPHOBIA.

He said that although, since Pasteur's first publications on this subject, it has received the widest ventilation in medical journals, no apology is needed for a fresh critical review, so rapid are the additions to our knowledge and to such an extent does the estimation of the value of much of Pasteur's work depend upon results which can be determined only by the lapse of time. Although Pasteur's preventive inoculations against hydrophobia constituted the central point about which controversy has waged, it is not to be forgotten that Pasteur's discoveries, and the investigations aroused by them, have shed much light in many directions upon one of the most mysterious and fatal diseases. We are better able now than ever before to estimate the value of the recent study of rabies, and to consider the efficacy of the Pasteurian inoculations against hydrophobia.

Dr. Welch reported the results of post-mortem examinations, which he had made in three cases of hydrophobia in human beings. In one case he had made serial sections of the medulla oblongata and pons from the second cervical nerve upward. The lesions in this situation were small hæmorrhages, accumulations of leucocytes in large number in the perivascular lymph-spaces and in scattered foci in the neuroglia, and thrombi composed of blood-plates and of leucocytes in small blood-vessels. These lesions were for the most part microscopical, and their extent and distribution could be determined only by the examination of a large number of sections from different parts. The lesions were especially well marked in and near the nuclei of origin of the spinal accessory, pneumogastric, and glosso-pharyngeal nerves, and in the motor nucleus of the trigeminus. Cases have been reported in which even more extensive lesions than these have been found, their severity depending apparently in large measure upon the duration of the disease. While it cannot be claimed that these lesions are peculiar to hydrophobia, or by themselves suffice for its anatomical diagnosis, it is incorrect to suppose that hydrophobia is a disease without demonstrable anatomical lesions, which have a manifest relation to the symptoms of the affection.

Far more important than the additions to our knowledge of the pathological anatomy of rabies following Pasteur's discoveries are the contributions to a better comprehension of the causation of the disease. Before Pasteur's publications of hydrophobia, dating from 1881, about all that we knew of the virus of rabies was that it is contained in the salivary glands and their secretion, and that infection often follows the bites of rabid animals. We now possess valuable information concerning the properties of the rabid virus, its distribution in the infected body, the manner of its transmission, the singular differences in its action according to the seat of its inoculation, and the means for producing immunity against its invasion.

Although there is no reason to doubt that the infectious agent in the virus of rabies is a micro-organism, no actual demonstration of this organism has yet been made. From material obtained from a series of rabbits, which were inoculated at the pathological laboratory of the Johns Hopkins University with hydrophobic virus obtained from the medulla oblongata of a man dead of the disease, and which served to confirm the statement of Pasteur as to the behavior of these animals when inoculated with the rabid virus, efforts were made to demonstrate both in the tissues and by means of cultures some specific micro-organism, but with entirely negative result. While we are not acquainted with the specific organism causing hydrophobia, we know many of its properties.

The virus of rabies is destroyed by comparatively low temperatures, exposure for one hour to a temperature of 50° C. sufficing for this purpose. It is killed in a short time by drying, certainly within four days when exposed in thin layers capable of rapid desiccation. It is destroyed by exposure to the direct rays of the sun even when surrounded by conditions preventing much elevation of temperature. According to Babes the virus is more resistant to the action of corrosive sublimate and of carbolic acid than most micro-organisms, but it usually loses its infectious properties after exposure three hours to the action of 0.1 per cent. sublimate or of 1 per cent. carbolic acid solution. Galtier has pointed out the important fact that the virus of rabies may be demonstrated after forty-four days and perhaps longer in the cadavers of buried animals. A practical means of preserving the virus is to place the brain or cord of the infected animal in pure glycerine, which may be diluted with water and should be occasionally changed.

It has been ascertained that the occurrence of infection with rabies depends largely upon the part of the body, and the character of the tissues, into which the virus is inoculated. The disease always develops after inoculation of the virus into the brain, or upon its surface, or into the eye, the period of incubation being shorter and more definite after subdural inoculations. Inoculation into the substance of nerve trunks appears to be equally successful in rabbits, but somewhat less certain in dogs, although even with the latter inoculation into the pneumogastric nerve does not fail. Intravenous injections do not produce the disease in ruminants unless very large quantities are used, and may fail in rabbits, and especially in dogs. Especial importance attaches to the behavior of subcutaneous injections of the virus of rabies. Dogs often resist infection from the injection of considerable quantities of even the most intense virus into the subcutaneous tissue. Ferran's superintensive method of producing immunity in human beings is to inject at once the strong virus into the subcutaneous tissue, and this has been done in over two hundred cases without injury. If the injection be made into muscular tissue, infection is more likely to follow. Di Vestea and Lagari have shown that while simple subcutaneous injections are often unsuccessful in producing rabies, the application of the virus to the divided ends of nerve filaments in a cutaneous wound is generally efficacious in causing the disease. Although deep and severe bites of rabid animals are the most dangerous, hydrophobia may result simply from a mad dog licking a scratch in the skin.

One of the most important discoveries of Pasteur is the demonstration of the fact that in animals or human beings, which have died of hydrophobia, the virus is contained most abundantly in the central nervous system, and especially in the medulla oblongata. It is found constantly also in the salivary and lachrymal glands, sometimes in the pancreas, but it is usually absent from the blood, kidneys, spleen, and liver. Only exceptionally is it present in the mammary glands and the milk. It is very rarely transmitted to the fœtus through the placenta.

There has been considerable discussion as to the manner in which the virus is conveyed from the seat of inoculation to the central nervous system. The evidence points to the transmission of the virus along the nerves; in fact, it is claimed by Helman and others that the virus is capable of multiplication only in nervous substance. Roux and others have found the virus present in the nerves of a bitten extremity when it has been absent in corresponding nerves of the opposite side. By killing animals at the proper period, it has been ascertained that after inoculation in the tail or posterior extremities the virus makes its appearance in the posterior part of the spinal cord sooner than in the medulla oblongata, while the reverse holds true when the inoculation is made in the head or anterior part of the body. These observations, taken together with the inefficacy of intra-venous injections, and the absence of the virus from the blood, lead to the conclusion that the virus passes along the nerve-trunks, although we have no information as to how this is accomplished.

It is a significant fact, which should be remembered in judging the results of Pasteur's treatment, that there is a period of so-called latent development of the virus in the central nervous system. In rabbits inoculated with the strongest virus (virus fixe) the period of incubation is six days, but as early as the fourth day the virus has been found in the medulla oblongata. Doubtless, therefore, in human beings the virus is present for a longer or shorter period in the central nervous system before any characteristic symptoms of rabies appear. Careful observation has shown that in rabbits this period is not really a latent one, but is accompanied by elevation of temperature, increased frequency of respiration, slowing of the pulse-rate, and loss of weight.

Dr. Welch said that there can no longer be any question that it is possible to render animals immune against rabies both before and after inoculations which would otherwise cause the disease. The independent and careful experiments of Ernst in this country are free from all partisan bias, and have amply confirmed the statements of Pasteur on this point. The methods employed by Pasteur for protective inoculation against hydrophobia have been so often and so fully described in medical and other journals that Dr. Welch did not consider it necessary to repeat the description on this occasion. Those inoculations are the most effective in preventing the disease which are undertaken soon after the reception of the poison with a large quantity of virus, and with the speedy employment of material containing the strongest virus (virus fixe). Animals may be rendered immune by single injections into the blood or the subcutaneous tissue of a large quantity of strong virus, whereas dogs which are bitten by mad dogs, and which do not develop the disease, as often happens, are not left immune. Dogs which have once been rendered immune against rabies may preserve this immunity for at least two years, and doubtless for a longer period.

Pasteur attributes the immunity to the action of some substance which he calls "matière vaccinale," contained in the virulent material, but not identical with the micro-organism causing rabies. That immunity against infectious diseases may be secured by the injection of chemical substances produced by the growth of specific bacteria was first demonstrated by Salmon and Smith in the case of hog cholera, and has been subsequently demonstrated by Roux and Chamberland for malignant œdema, and by Wooldridge for anthrax. It has not yet been found possible to prove conclusively the correctness of Pasteur's supposition in the case of rabies, but there is much which speaks in its favor.

Encouraged by the results of his experiments upon animals, Pasteur, in July, 1885, first applied to a human being his method of preventing hydrophobia by successive inoculations of the virus contained in the rabbit's medulla subjected to drying for different periods. During the years 1886, 1887, and the first half of 1888, there have been treated under Pasteur's supervision, either by the simple or the intensive method of inoculation, 5,374 persons who have been bitten by animals either proven or suspected to be rabid. The mortality from hydrophobia, including even the cases which developed within a day after the cessation of treatment, was in 1886 1.34%; in 1887, 1.12%; in 1888, 0.77%. If the fatal cases which developed within a fortnight after the end of treatment, and in which there is reason to believe that the inception of treatment was too late, be excluded, the mortality of 1886 falls to 0.93%, for 1887 to 0.67%, and for 1888 to 0.55%.

Dr. Welch considered the various objections which have been made to Pasteur's methods and to the value of his statistics. Some of these objections are of a purely hypothetical nature. Much force has been attached to Von Frisch's experiments, which seemed to some to invalidate the scientific basis of Pasteur's method of treatment. Von Frisch claimed that it is impossible to render animals immune after the reception of the virus of rabies in a manner certain to produce the disease. In opposition to Von Frisch it has been demonstrated by Pasteur and others that in a large proportion of cases the development of rabies may be prevented in dogs which have been inoculated beneath the dura mater with the strongest virus. The treatment, however, must not be deferred under these circumstances later than the second day, and must be by the intensive vaccinations. Bardach succeeded in this way in saving 60% of the dogs inoculated beneath the dura mater. This test is evidently the most severe one to which Pasteur's preventive treatment can be subjected; one far more severe than is required to meet the ordinary channels of infection with rabies. It must be admitted, therefore, that Pasteur's treatment rests upon a satisfactory experimental basis.

The criticisms raised against drawing favorable conclusions from the large mass of statistics published by Pasteur have been many, but the most important are, that we are ignorant of the mortality following the bites of rabid animals, and that there are included in Pasteur's statistics an indeterminate number of persons bitten by animals that are not rabid. As regards the first point, there are various careful collections of statistics which show an average mortality of about 15 per cent. (Leblanc, Dujardin-Beaumetz, Horsley). All admit that bites by rabid animals on the head and face furnish a much higher death-rate than this, it being given as 88 per cent. by Brouardel. To meet the second criticism, Pasteur's statistics, which are published monthly, are arranged in tables which embrace (*a*) persons bitten by animals proven experimentally to be rabid, (*b*) cases in which the existence of rabies is certified by a veterinarian, (*c*) cases in which there is reason to suspect rabies in the animal. Pasteur's statistics for class *a*, that is, for persons bitten by animals found experimentally to be rabid, for the years 1886 and 1887, and the first half of 1888, yield a mortality from rabies of 1.36 per cent., or, if those who died within a fortnight after treatment be excluded, of 1.09 per cent.

Dr. Welch collected from Pasteur's reports for the year 1887 and the first half of 1888 those bitten on the head and face by animals proven experimentally to be rabid. There were fifty-nine cases with four deaths from rabies during treatment and two following treatment. Of the latter one was seized three days after the cessation of treatment, and it is reasonable to suppose that in this case the treatment was begun too late. If this case, and those dying during treatment, be excluded, there remain fifty-four cases, with one death, a mortality of 1.85%.

In view of the universally conceded high death-rate following bites on the head and face by rabid animals, this result leaves no room for doubt as to the efficacy of Pasteur's treatment, although it is not unfailing.

It is a sufficient answer to the assertion that has been made that Pasteur's intensive inoculations are dangerous in that they may actually produce the disease, that the mortality from rabies is strikingly smaller after the application of the intensive method than after the simple treatment.

DISCUSSION.

Dr. J. D. Blake, in referring to Dr. Welch's paper, asked how the poison could be transmitted by the nerves alone. If injection into the blood does not kill, but makes the animal proof against future attacks, why not inject the substance directly into the blood of man to prevent hydrophobia?

Dr. W. C. Van Bibber said if the temperature stated would kill the organism of rabies this should give a valuable idea as to treatment.

Dr. William H. Welch remarked in conclusion that many facts about rabies were known which could not be explained. It was not understood how the virus was transmitted along the nerves, but the fact remains; and still further, this did not seem to disturb the function of the nerve. It might extend along the lymph vessel of the nerves; we know little of the composition of the lymph. He did not mean to be understood as saying that the virus did not extend through the blood lymphatics, etc., but that we have no evidence of this. In reply to Dr. Van Bibber, he said the method of cauterization is a good one, but it does not prevent rabies. The virus must penetrate into the nerve to be transmitted by it, and the chance of piercing a nerve in the skin by puncture is very small.

Recent Literature.

Home Gymnastics for the Well and Sick. Edited by E. Augerstein, M.D., and by G. Eckler. With many woodcuts and a figure plate. Translated from the eighth German edition. Boston and New York: Houghton, Mifflin & Co. 1889.

During the past few years constantly increasing attention has been paid to physical development. At first a renewed interest in athletic sports showed itself. Then indoor sports attracted interest, and finally physical training by gymnastics was undertaken with a greater degree of system than at any previous time.

Though Dio Lewis some years ago taught gymnastics, and even had a school where special study was given to the subject, it cannot be said that the physical training of women and children had ever been organized on a definite plan until Miss Mary E. Allen began her classes, and laid the foundation of her graded system, now so successfully applied in practice at the Allen Gymnasium, undoubtedly the most perfect building of the kind in this country.

We have still felt, however, that we were laboring under a serious disadvantage in having no text-books to teach gymnastics, and while results were obvious, the scientific demonstration of these results we had no means of studying.

While the book before us does not set out to be a text-book for purposes of general instruction, it gives a large number of exercises which can be taught either at home, at school, or in the gymnasium, and gives a clear explanation of everything. We can be both pupil and teacher at the same time, and if we forget the form of exercise needed, or how applied, we can at once find it explained, and illustrated by a figure.

The book is arranged in three divisions. The first division explains the effects of bodily exercises and gives explicit rules for the practice of home gymnastics.

The second division gives the movements for all parts of the body as well as composite exercises, and it should be stated here that these exercises can be done anywhere, as most of them require no apparatus. Dumb-bells and wands are the only kinds employed.

Division three, part first, gives the application of the exercises to individuals in health. Part second details how they may be applied for the benefit of invalids in a variety of diseases, but it is expressly stated that the physician should be consulted where there is any doubt as to the advisability of the exercises.

Altogether the book, without being pretentious, is a safe and simple teacher and guide for the practical and scientific application of gymnastics in our own households. To the physician interested in developing physical training among his patients it will be invaluable.

The translation is both exact and clear, and the type, paper, and illustrations are a credit to the publishers. The figures with which the book is illustrated are collected together on a large single sheet kept in a convenient pocket in the back cover of the book, but also suitable to be hung on the wall for ready reference.

— There are now eight important systems of railroads which have established hospitals to care for their sick and injured employés.

— The annual meeting of the Berkshire District Medical Society was held in Pittsfield Wednesday afternoon and these officers were elected: president, C. W. Burton, of Adams; vice-president, W. P. Small, of Great Barrington; secretary, Henry Colt, of Pittsfield; librarian, W. W. Leavitt, of Pittsfield; committee on trials, Abner M. Smith, of Pittsfield.

— The Police Commissioners of New Haven, Connecticut, have rendered a decision on the matter of payment of physicians' bills for attendance on two police-officers injured while in discharge of their duty, and also of a physician summoned by a policeman to attend a woman who had been assaulted by a drunken husband. In all three cases the responsibility of the municipality for paying the physicians is denied.

— At the annual meeting of the Worcester District Medical Society the following officers were elected: —

President, Dr. J. Marcus Rice; vice-president Dr. George Brown; secretary, Dr. W. C. Stevens; treasurer, Dr. S. B. Woodward; librarian, Dr. A. C. Getchell; orator, Dr. G. E. Francis; committee on funds, Dr. T. H. Gage, Dr. J. G. Park, Dr. G. E. Francis; commissioner on trials, Dr. J. Wilmarth.

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ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION.

The twenty-second annual meeting of the Canadian Medical Association will be held at Banff, N. W. T., on the 12th, 13th, and 14th of August next.

We are requested by the secretary-general of the association, Dr. James Bell, whose address is 53 Union Avenue, Montreal, to state that the Canadian Pacific Railway Company has agreed to carry members and delegates with their wives or members of their families at the following rates: From points in Ontario or Quebec, to Banff and return, at $95.00 each, including a double berth in sleeping car for each person, and meals in the dining cars on the way west from Montreal or Toronto and back, and four days living at the Banff Hotel. The passage tickets will be made good from and to any points on the Canadian Pacific Railway, in either Ontario or Quebec, to Montreal or Toronto, but berths and meals will begin at these two places only.

Owing to the provisions of the Interstate Commerce Law, it will be impossible to get reduced rates from points in the United States, with the exception of St. Paul, Minn., from which the following rate is offered: $60.00 to Banff and return, including meals and sleeping-car accommodation *between Winnipeg and Banff only.* Delegates from the United States are therefore requested to make their own arrangements between their homes and Montreal, Toronto, St. Thomas, or other points on the Canadian Pacific Railway.

It is intended that the party shall leave Montreal on the evening of the 6th of August, by the regular Pacific express and arrive in Winnipeg on the 9th, and stop over one day there; leaving Winnipeg on the 10th of August, they will arrive at Banff early on the morning of Monday, August 12th. The meeting of the association will then be held in the hotel (*accommodation being provided by the Canadian Pacific Railway Company*) on the 12th, 13th, and 14th, after which the members of the party can either return at their convenience or take a trip to the coast, leaving early the following morning (August 16th), for which special terms have been arranged as follows: from Banff to Victoria and return, not including meals or berths, $20.00, or $30.00 including meals in the dining car and berths. The tickets for this excursion will be on sale at Banff to members and delegates and their families only.

The special tickets issued by the Canadian Pacific Railway to Banff and return will be good for sixty days, and the holders will be allowed stop-over privileges on the Canadian Pacific line in either direction at pleasure. They will also be exchangeable at Port Arthur and Owen Sound, so as to enable members to travel in either direction by steamer between these points. Meal and berth coupons will be issued in connection with these tickets and will be available as part payment of expense of any who wish to make additional stops and spend longer time on the line. It is considered desirable, however, by the executive officers of the association, that as far as possible the party should travel together by the all-rail route as far as Banff, so that all may be present at the opening of the meeting.

In addition to the members of the Canadian Medical Association, to whom this circular is specially addressed, a cordial invitation is hereby extended to all members of the regular profession in good standing in the Dominion of Canada, the United States, and Great Britain, to whom the necessary certificates will be sent on application to the secretary.

Members and delegates are requested to notify the secretary of the points on the Canadian Pacific Railway from which they intend to start, at a sufficiently early date to enable the railway company to forward special tickets to the aforesaid points. It will also be necessary to present a certificate from the general or provincial secretary to enable members or delegates to secure the above-mentioned special tickets.

We take much pleasure in bringing the friendly invitation of the Canadian Medical Association to the attention of our readers. To physicians able to take a vacation in the month of August it offers many attractions. Such as might avail themselves of the facilities which this occasion affords would make many pleasant professional acquaintances whilst enlarging their medical horizon, and, whilst travelling through a recently opened and interesting region in great comfort at comparatively little expense, would see some of the grandest scenery to be found on the North American Continent.

ON THE TREATMENT OF WHOOPING-COUGH BY ANTIPYRINE.

COINCIDENTLY with the progress which has been effected of late years in the etiology of the infectious diseases, there has been progress in therapeutics, but not equal progress. It might have been expected that of all these diseases among the first to profit by the new etiological acquisitions would have been pertussis and diphtheria, diseases in which, according to the microbiologists, the infectious germs have a primary localization in parts fairly accessible; it cannot, however, be said that the antiseptic treatment of these diseases has yet achieved brilliant success. Hippocrate Callias, it is true, claims remarkable results in diphtheria from sprays of resorcine,[1] while Gaucher and Dubousquet think they have saved nearly all their patients by local applications of very strong solutions of phenic acid.[2] But the communications of all these gentlemen were received with no little incredulity when read before the learned societies, and certainly many other excellent authorities who have thoroughly tried the local germicide treatment, while awarding to antisepsis in diphtheria high praise, speak guardedly and by no means boastfully of the results which they have attained.

So with regard to whooping-cough, Ollivier, physician to the Enfants Malades, in the *Bulletin Général de Thérapeutique* (March 30, 1889), testifies to the generally unsatisfactory results of the germicide therapy of this disease. Tar vapors and turpentine vapors have been tried, and fumes of sulphurous acid, while phenic acid sprays have been used day and night; so, also, creoline, resorcine, petroleum, quinine, and benzoate of soda in pulverizations; but this topical medication, however faithfully carried out, has never, says Ollivier, shortened the duration of whooping-cough by one day, nor has it ever markedly alleviated the paroxysms of coughing, or prevented any of the complications. It is impossible, he asserts, to charge the air of inspiration with a sufficient quantity of any antiseptic agent to destroy the pertussoid germs burrowing in or beneath the epithelium of the laryngeal mucosa. Better than all antiseptics, he says, is change of air; oxygen is itself a parasiticide.

Despairing of successfully meeting the causal indication, Ollivier would content himself by treating symptoms and complications, and especially by quieting the hyperexcitability of the vagus centre by means of nerve sedatives. He has nothing very new to offer for the accomplishment of this end. He speaks favorably of antipyrine.

At a recent meeting of the *Société de Thérapeutique*, Dubousquet-Laborderie read an interesting paper[3] on the treatment of whooping-cough by antipyrine. He has treated ninety-four cases with general success; he claims that the duration of the disease in the majority of these patients was markedly shortened. The sedative effects of the medicine on the cough-paroxysms were perceptible from the very first. In seventy-one of Dubousquet's cases, the average duration of the disease was twenty-four days, instead of forty-four to fifty, which is the ordinary duration. He accepts Trousseau's definition of pertussis — "a specific pulmonary catarrh with neurosis," — and believes that antipyrine benefits this disease by addressing itself to the two elements: *specificity* and *neurosis*. As the nervous or convulsive element predominates in pertussis, it is probably chiefly by allaying hyperexcitation and spasm that it does good. One remarkable effect of the antipyrine treatment was the diminution in the number of pertussoid paroxysms, *i.e.*, from twenty-five or thirty fits of coughing a day to half that number, or even less. The intensity of the paroxysms was also greatly abated.

The doses prescribed by Dubousquet vary from five to fifteen grains per day to children under three years of age, and from twenty to sixty grains a day to older children and adults. To a child of five years of age, a five-grain dose may be given after each fit of coughing till three or four doses have been taken. To an adult, the dose may be twice as great. The medicine may be given in raspberry syrup and Vichy water. He prefers to begin with full doses, which may be increased or diminished, according to the indications.

MEDICAL NOTES.

— The Augusta, Georgia, *Chronicle* describes the important and wonderful operation performed on a "respectable white woman," of that city as the removal of an "ovariotomy tumor," and very properly adds that it "is the first operation of the kind ever performed in this part of the State."

— The Plymouth District Medical Society has elected the following officers for the ensuing year: president, J. B. Brewster, of Plymouth; vice-president, A. E. Paine, of Brockton; secretary and treasurer, A. V. Lyon, of Brockton; librarian, W.

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[1] Société de Medecine Pratique Seance, Feb 28, 1889.

[2] *Loc. cit.*, 1889, p. 36

[3] Bull et Mem. de la Soc. de Thér., 1889, p. 37; Bull. Gén. de Thérapeutique, May 15, 1888.

P. Chisholm, of Brockton; committee on trials, H. N. Jones, of Kingston; reporter, A. V. Lyon, of Brockton.

— A claim interesting to doctors among other professional men was heard before the county commissioners, at Brockton, Mass., April 29. The law provides that a person shall be taxed on his income, if it is in excess of $2000 for the year preceding the one in which the tax is levied. It is a provision of which little is heard, but it is law. Last year Dr. G. E. Freeman, of Brockton, filed a statement of his property in which he gave his income as $5000. The assessors accordingly taxed him for the excess over $2000, although a large part of that excess had been invested in property which was also assessed, making virtually double taxation. The doctor demurred and has not paid that part of the tax. He appealed to the county commissioners.

— Sir Edwin Chadwick, in an address on sanitary science, says: "Physicians are beginning to declare that a large amount of the crime for which punishment is inflicted is due to insanity, and that insanity is due to low physical condition which sanitation by early physical training would remove. There are experiences to show that this is the fact. Dr. Ashe and others conversant with the lunatic asylum declare that, as a class, lunatics are of low physical condition, and that that low condition is reducible by sanitation and early physical training, Of 30,000 blind persons, the late Dr. Rolph declared that two-thirds might have been saved by early sanitation."

— The supreme court of Wisconsin has rendered a very important decision, says the New Haven *News*, that a clairvoyant physician is liable for failure to exercise the ordinary skill and knowledge of a physician in good standing, practising in the vicinity, and not merely to the ordinary skill and knowledge of clairvoyants. It is held by the court that if any one holds himself out as a medical expert and accepts employment as a healer of diseases, but relies for diagnosis and remedies upon some occult influence exerted upon him, or some mental intuition received by him when in an abnormal condition, he takes the risk of the quality of accuracy of such influence or intuition.

— The Iowa State Board of Health has decided that Iowa medical colleges, after 1891, should be required to give a four years' course to secure their graduates admission to practice in the State.

— An addition to the Newton (Mass.) cottage hospital has been completed through the generosity of Mr. J. R. Leeson, as a memorial of his wife and daughter. It is a wooden building containing ten beds for female patients, and three private rooms. It cost about $6,000.

BOSTON.

— A hearing has been given by a legislative committee at the State House in regard to the petition of the city of Boston to take a portion of the unoccupied land of the Harvard Medical School to be kept open for the benefit of the public library building now in process of erection easterly of the Medical School.

— At the annual meeting of the Adams Nervine Asylum, May 8, the following officers were elected: — President, Henry Parkman; vice-president, Joseph W. Balch; treasurer, George A. Goddard; managers, the trustees, president, vice-president, and treasurer, *ex-officio*, and Henry P. Bowditch, Charles F. Dole, Charles E. Guild, Alpheus H. Hardy, James Longley, William L. Richardson, A. Davis Weld, Henry Woods; secretary, James C. Davis; physician, Samuel G. Webber; supervisors, Charles F. Atkinson, Harold C. Ernst, George Wigglesworth.

The aggregate value of the property held is $555,257, invested in bank, railroad, municipal, and mortgage securities. The income during the year has been $30,239. The treasurer has in his possession $7,986, after investments made and expenses paid during the year, out of total receipts of $77,058. The number of patients during the year was seventy-nine, and there were no deaths.

NEW YORK.

— The semi-annual meeting of the Pathological Society April 25th, was favored with an address by Prof. Roswell Park, of the University of Buffalo, entitled "A Study of Acute Infectious Processes in Bone." This was followed by a reception to Prof. Park. At the first meeting of the County Medical Society in May, Dr. Robert Abbey, of New York, will speak on "Lateral Anastomoses of the Intestine."

— The annual May meeting of the State Board of Health was held in New York May 8th. The reports received showed an improved service in the collection of vital statistics by local boards throughout the State. During the first quarter of 1887 there were about 26,000 deaths, a less number than was recorded in the corresponding period of last year. Zymotic diseases caused 17 per cent. of the deaths. Small-pox was reported in only two places in the State. The enforcement of the rules formulated by the board for the protection of the purity of the water supply of New York City was reported to have greatly improved the quality of Croton water.

— Gen. Austin Lathrop, superintendent of State prisons, has purchased the electrical apparatus to be used in the execution of criminals in the three prisons situated at Sing Sing, Auburn, and Clinton. It consists in each instance of a Westinghouse dynamo, with an auxiliary "excitor," a strong oaken chair in which the convict is to sit, and an electrical cap and electrical shoes to be worn by the condemned. The cost of the apparatus was $8,000, or $2,000 less than the State appropriated for the purpose. The first death sentence under the new law has been pronounced and the criminal will be executed by electricity in Auburn.

— Henry Matthieu, a Frenchman who served under the first Napoleon, and was wounded at the battle of Waterloo, died in a tenement house on May 9th, at the advanced age of one hundred and one years and one month. He is said to have been born near Blois, in Vendome, and Dr. Matthew Beattie, who was his physician for several years and did much to make the last days of the old man comfortable, states that there can be little doubt of the correctness of his age as given.

— In a lecture on the public school question delivered at the Berkeley Lyceum May 10th, under the auspices of the Public Education Society, the Rev. Edward Everett Hale, of Boston, said he believed that the mechanism of the public schools was bad, and that he was much afraid that as regards this the fact was lost sight of that the business of the school was to make men and women. The prevailing system fixed the responsibility for the intellectual, moral, and physical education of the child upon the public school, and he expressed himself as a firm believer in half-time schools.

PHILADELPHIA.

— Dr. Harrison Allen, of Philadelphia, is to deliver the next Toner lecture at the National Museum in Washington on the evening of the 29th inst. The subject is "The Clinical Study of the Skull, Especially Undertaken in Connection with the Morbid Conditions of the Jaws and Nasal Chambers."

— The trustees of the Jefferson Medical College of Philadelphia have elected Dr. Hunter McGuire, of Richmond, Va., professor of surgery. Dr. McGuire graduated at this institution and was demonstrator of anatomy there when the war broke out. The institution was then liberally patronized by the South, and when the news of Sumter reached them Dr. McGuire made an appeal to all Southerners to leave, and he and two hundred others went South. Dr. McGuire was Stonewall Jackson's chief surgeon, and amputated Jackson's arm when the Confederate general was so badly wounded. After the war Dr. McGuire established himself in Richmond and built up a large practice. He established a private hospital which is one of the largest institutions of the kind in the South.

— A contest which has assumed large proportions is going on in Philadelphia between Mayor Fitler and Dr. James W. White, late president of the department of charities and correction. The mayor has removed Dr. White because the latter opposed the former's attempts to appoint Dr. Waugh to be attending physician at Blockley Hospital. It is claimed by friends of the latter that unjust discrimination has been made heretofore in favor of the University of Pennsylvania in all hospital appointments. Dr. Waugh represents the Medico-Chirurgical College, and says that his reason for being an applicant for the position is to secure fair treatment for such graduates of that institution as come up for examination as resident physicians. The other side repudiate any idea of unfairness, and claim that the preponderance of university men in prominent medical positions generally is due to the superior attainments of their men.

Miscellany.

CONTRAINDICATIONS FOR THE USE OF ANTIPYRIN DURING THE MENSTRUAL PERIOD.

Cases of toxic accidents from the use of antipyrin have been frequently reported, says the *Therapeutic Gazette* (March, 1889), but the conditions under which these results are produced have not been sufficiently studied. Without doubt in some cases the poisonous effect is to be attributed to the poor quality of the drug, but the condition of the patient also deserves consideration. In the *Revue Générale de Clinique et de Thérapeutique* for January 24, 1889, it adds, Dr. W. Huchard states that a year ago he administered fifteen grains of antipyrin to a woman suffering from violent dysmenorrhœa. As the result of the administration of this drug, the menstrual flow was suddenly arrested. The patient was seized with violent chill, chattering of the teeth, face became cyanosed, and there were frequent attacks of syncope; the pulse was small and weak, and the patient complained of great headache. The condition was such as to cause great anxiety for nearly an hour, when the effects gradually passed off. Dr. Huchard thinks that he has in two other cases observed similar symptoms, although less marked, and he now regards the presence of the catamenial flow as a positive contraindication to the use of antipyrin.

THE NEW YORK ACADEMY OF MEDICINE.

The New York *Evening Post* contains the following description of the new building of the New York Academy of Medicine, which is to be erected immediately upon property lately purchased in Forty-third street, near Fifth avenue. The lot upon which it will stand is seventy-five feet wide and one hundred feet deep, and when the new home of the academy is finished, it will be one of the most complete structures of its kind in the city. The building will be five stories in height, and will also have a gable story. The material used in the construction of the front will be a brownish-red Kibbe stone, both rock-faced and dressed and brick. The style of architecture is Romanesque.

The basement of the building will contain the kitchen, lavatories, a room for unpacking books, and machinery. The first story is in itself a well-appointed club-house. The two doors from the street open into a spacious, tiled vestibule, from which a door leads into an inner vestibule, opening into a large hall. On the right are a reception room, a coat room, an elevator, and stairs. On the left of the hall are the committee or reading-room and the smoking room; the latter being thirty-six by twenty-six feet. These rooms are lighted by the big windows in the front of the building. The rear half of the floor is devoted to a large assembly room, fifty-seven by forty-two feet, and a dining room thirty-one by twenty-eight feet. These two rooms are separated by a rolling partition, and they can be thrown into one at any time when required for large meetings or a largely attended dinner. One and a half stories are taken for this part of the house, and the rooms are twenty-six feet high. On each side are air shafts, and by means of a glass arch a flood of light is let in at each end of the rooms. The dining-room is treated with a peaked ceiling, which will be very effective. The half-story in front of the building, which is eleven feet high, is to be used for committee rooms, etc.

The third story will contain the library. The academy has long wanted room for its many valuable books, and the accommodations provided in its new house will be entirely adequate. On this floor, taking up the whole rear and part of the front, are the reference library and the "stock" room. These two rooms run through one story and a half. In the rest of the front is a reading room one story high, and above it is another. In the front of the fourth story will be the pathological section and two specimen rooms; and in the rear will be three large section rooms and an apparatus room. On the top floor will be the librarian's apartments, the janitors' quarters, and a microscopy room. The building, when completed, will cost about $140,000

REPORTED MORTALITY FOR THE WEEK ENDING MAY 4, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhœal Diseases.	Diph. and Croup.	Measles.
New York	1,571,558	731	293	21.70	18.34	1.68	9.80	4.96
Philadelphia	1,040,245	402	141	11.50	20.00	1.00	4.00	2.25
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	333	144	18.60	17.70	1.20	10.50	2.40
Baltimore	500,343	152	43	5.28	11.22	.66	1.32	.66
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	193	70	12.42	24.46	2.70	5.94	—
New Orleans	250,000	104	29	12.48	5.76	1.92	2.88	—
Cincinnati	225,000	85	—	14.16	14.16	2.36	5.90	1.18
Washington	225,000	67	13	8.88	8.88	—	2.96	1.48
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	13	4	15.38	15.38	7.69	—	—
Charleston	60,145	26	10	19.25	3.85	15.40	—	—
Portland	40,000	14	—	—	28.56	—	—	—
Worcester	78,292	26	9	7.70	35.97	—	7.70	—
Lowell	71,518	34	9	5.88	11.76	2.94	2.94	—
Cambridge	65,552	16	3	6.25	6.25	—	6.25	—
Fall River	62,647	27	16	29.60	11.11	7.40	7.40	7.40
Lynn	53,334	19	—	21.04	15.78	—	15.78	—
Springfield	40,731	13	4	38.45	—	7.69	30.76	—
Lawrence	40,619	20	8	5.00	5.00	—	5.00	—
New Bedford	37.253	10	5	—	20.00	—	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	13	4	—	—	—	—	—
Salem	29,011	8	—	—	12.50	—	—	—
Brockton	28,813	11	2	—	9.09	—	—	—
Chelsea	28,167	8	3	50.00	—	12.50	—	—
Haverhill	26,058	6	2	33.33	—	—	33.33	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	5	3	—	20.00	—	—	—
Newton	21,553	2	—	50.00	—	—	—	—
Malden	19,774	2	—	50.00	—	—	50.00	—
Fitchburg	17,534	7	5	14.28	—	—	—	—
Waltham	17,332	5	1	—	20.00	—	—	—
Newburyport	13,875	6	1	—	—	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	1	—	—	—	—	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2359; under five years of age 812; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 367, acute lung diseases 357, consumption 327, diphtheria and croup 166, scarlet fever 56, diarrhœal diseases 10, whooping-cough 27, typhoid fever 24, measles 20, malarial fever 13, cerebro-spinal meningitis 11, erysipelas 10. From whooping-cough, New York 20, Brooklyn 3, Boston 2, Chelsea and Fitchburg 1 each. From typhoid fever, Philadelphia 10, Boston 3, New York, Cincinnati, and Fall River 2 each, Brooklyn, Baltimore, Washington, Chelsea, and Newton 1 each. From measles, New York 8, Philadelphia 5, Brooklyn 3, Boston, Cincinnati, Charleston, and Lynn 1 each. From malarial fever, Brooklyn 6, New Orleans 3, New York 2 Baltimore and Nashville 1 each. From cerebro-spinal meningitis, New York 3, Philadelphia, Baltimore, and Washington 2 each, Cincinnati and Somerville 1 each. From erysipelas, New York 4, Brooklyn and New Orleans 2 each, Boston and Chelsea 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending April 20th the death-rate was 19.4. Deaths reported 3547, infants under one year 817. Measles 177, whooping-cough 133, diphtheria 42, scarlet fever 36, diarrhœa 33, fever 19.

The death-rates ranged from 12.0 in Brighton to 37.6 in Preston, Birmingham 19.4; Bradford 20.4; Hull 18.3; Leeds 23.6; Leicester 13.9, Liverpool 21.0; London 17.1; Manchester 28.6; Newcastle-on-Tyne 25.6; Nottingham 19.7; Portsmouth 19.9; Sheffield 19.3; Sunderland 17.1.

In Edinburgh 20.1; Glasgow 29.5; Dublin 23.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MAY 4, 1889, TO MAY 10, 1889.

By direction of the Acting Secretary of War Captain F. C. **AINSWORTH**, Assistant Surgeon, U. S. Army, will proceed to Albany, N. Y., on business connected with the Medical Department. Par. 7, S. O. 105, A. G. O., May 7, 1889.

By direction of the Secretary of War Captain **PAUL R. BROWN**, Assistant Surgeon, is relieved from further duty in the Department of the Platte, and will proceed to Fort Thomas, Arizona, and report in person to the commanding officer of that post for duty, and by letter to the commanding officer Department of Arizona. Par. 10, S. O. 105, A. G. O., May 7, 1889.

APPEL, Capt. D. M., Assistant Surgeon, relieved from duty at Fort Sill, Ind. Terr., and ordered to Fort Bliss, Texas.

COWDNEY, Capt. S. G., Assistant Surgeon, relieved from duty at Fort Bliss, Tex., and ordered to Fort Marcy, N. M.

FINLEY, Capt. JAS. A., Assistant Surgeon, relieved from duty at Fort Assiniboine, M. T., and ordered to Fort Tatten, Dak.

DELAFFUE, Capt. AUG. A., Assistant Surgeon, relieved from duty at Fort Tatten, Dak., and ordered to Columbus Bks., Ohio.

TAYLOR, Capt. B. D., Assistant Surgeon, relieved from duty at Columbus Bks., Ohio, and ordered to Fort Sill, I. T. Par 25, S. O. 104, A. G. O., Washington, May 6, 1889.

Leave of absence for one month is hereby granted Captain **WALTER W. R. FISHER**, Assistant Surgeon U. S. Army. Par. 1, S. O. 30, Hdqrs. Dept. of Cal. San Francisco, Cal., April 27, 1889.

By direction of the Acting Secretary of War First Lieutenant **WILLIAM F. KENDALL**, Assistant Surgeon, will be relieved from duty in the Department of California after he shall have complied with the requirements of Par. 2, S. O. 29, April 24, 1889, from these headquarters, and will then proceed to Fort D. A. Russell, Wyo., for duty at that station. Par. 28, S. O. 104, A. G. O., May 6, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 11, 1889.

BEARDSLEY, GROVE S., Medical Inspector, detached from the "Brooklyn," proceed home and wait orders.

LOVERING, P. A., Passed Assistant Surgeon, detached from the "Brooklyn," proceed home and wait orders.

NORTON, OLIVER D., Assistant Surgeon, detached from the "Brooklyn," proceed home and wait orders.

HAWKE, J. A., Surgeon, detached from the "Essex," proceed home and wait orders.

STOKES, C. F., Assistant Surgeon, detached from the "Minnesota," and to the "Iroquois."

BRANSFORD, JOHN F., Surgeon, orders to the "Iroquois" revoked. resignation accepted, to take effect May 4, 1890, with leave of absence granted to that date, with permission to leave the United States.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE FOUR WEEKS ENDED MAY 11, 1889.

PURVIANCE, GEORGE, Surgeon, detailed as chairman of Board for the physical examination of candidates for appointment as cadets, Revenue Marine Service, May 8, 1889. Detailed as chairman of Board for the physical examination of officers, Revenue Marine Service, May 11, 1889.

IRWIN, FAIRFAX, Surgeon, to proceed to Bath, Wiscasset, Rockland, Belfast, Bangor, Ellsworth, Machias, and Eastport, Maine, as inspector, April 22, 1889.

MEAD, F. W., Passed Assistant Surgeon, detailed as recorder of Board for the physical examination of candidates for appointment as cadets, Revenue Marine Service, May 3, 1889. Detailed as recorder of Board for the physical examination of officers, Revenue Marine Service, May 11, 1889.

WHEELER, W. A., Passed Assistant Surgeon, granted leave of absence for thirty days, April 16, 1889.

BRATTON, W. D., Passed Assistant Surgeon, relieved from duty at San Francisco, Cal.; to assume charge of the Service at Portland, Oregon, May 8, 1889.

MARGRUDER, G. M., Assistant Surgeon, to proceed to Baltimore, Md., for duty, May 8, 1889.

PERRY, T. B., Assistant Surgeon, when relieved at Portland, Ore., to proceed to San Francisco, Cal., and await orders, May 8, 1889. To report to the commanding officer, Revenue Steamer "Rush" for special duty, May 11, 1889.

CONDICT, A. W., Assistant Surgeon, when relieved from duty at Boston, Mass., to await orders, May 8, 1889. To report to the commanding officer, Revenue Steamer "Chase" for special duty, May 11, 1889.

HUSSEY, S. H., Assistant Surgeon, when relieved from duty at Baltimore, Md., to proceed to Boston, Mass., for duty, May 8, 1889.

GEDDINGS, H. D., Assistant Surgeon, to proceed to Baltimore, Md., for temporary duty, May 8, 1889.

SOCIETY NOTICES.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS. — The third annual meeting of this association will be held at the Aquidneck House, Newport, R. I., May 21 and 22, 1889. Members desiring rooms can engage them by writing to the Aquidneck House.

A. T. CABOT, M.D., *Secretary.*

AMERICAN INTERNATIONAL CONGRESS OF MEDICO-LEGAL JURISPRUDENCE. — will hold a meeting under the auspices of the Medico-Legal Society of New York, at Steinway Hall, New York City, June 4, 5, 6 and 7, 1889.

APPOINTMENT.

A Department for Diseases of the Throat has been established in the Out-patient Department of the Carney Hospital, under the charge of Dr. J. W. Farlow.

OBITUARY.

WILLIAM READ, M.D.

Dr. William Read, of Boston, died May 6th aged sixty-nine years. He was born at Amherst, N. H., graduated at Dartmouth College in 1839 and at the Harvard Medical School in 1842. For a few years immediately after leaving the Medical School he practised at Lynn, since which time he has lived and practised his profession in Boston. About twenty years ago he was city physician for a term of four or five years and he was twice a member of the school board. A wife and three sons survive him.

Dr. Read was known widely in Boston as a generous and public-spirited citizen, actively interested in many good objects.

BOOKS AND PAMPHLETS RECEIVED.

Schlusskapitel aus der III. vermehrten u. vorbesserten Auflage von Güntz, Dr J. E., Die Chromwasserbehandlung der Syphilis. xxvii. Kapitel: Vorschriften für die ärztliche Praxis bei der Anwendung der Chromwasser-Behandlung unter Berücksichtigung anderer Kurmethoden, sowie der pathologischen Anatomie und physiologischen Chemie.

A Case of Tumor of the Cervical Region of the Spine Operation and Death. By James Hendrie Lloyd, M.D., and John B. Deaver, M.D. Reprint.

The Insanity of Oscar Hugo Webber. By J. Hendrie Lloyd, M.D. Reprint.

Ninth Annual Report of the State Board of Health of Illinois, with an appendix including Report on the State Sanitary Survey. Vital Statistics of Illinois and Coroners' Inquests. Meteorological Table. Report on State Medicine in 1886.

Transactions of the American Association of Obstetricians and Gynæcologists, vol. I. for the year 1888. Phila. 1889.

Surgical Bacteriology, by Nicholas Senn, M.D., Ph.D., Professor of Principles of Surgery and Surgical Pathology, Rush Medical College, Chicago, Ill. Phila.. Lea Brothers & Co. 1889.

A Compendium of Dentistry for the use of Students and Practitioners. By Jul. Parreidt, Dental Surgeon to the Surgical Polyclinic at the Institute of the University of Leipsig, etc. Authorized Translation. By Louis Ottopy, D.D.S., etc., with notes and additions by G. V. Black, M.D., D.D.S., with numerous illustrations. Chicago: W. T. Keener. 1889.

Address.

THE FUTURE OF SURGERY WITHOUT LIMIT.[1]

BY DAVID W. CHEEVER, M.D., OF BOSTON,
President of the American Surgical Association.

Fellows of the American Surgical Association:

I believe that we are warranted in saying that the future of surgery is without limit. I deduce this conclusion, first, from considering what the mind of man has already done; second, from the future possibilities of fields hitherto unknown and unexplored, but now opening up to science. There can be but two limitations, either in the mind of man or in the subject.

Since the time when, in the anthropoid, the cerebral lobes first began to creep over and cover the cerebellum, what a growth has taken place in the penetrating power of the human senses. The brain has progressed from the rude hammer of the prognathous cave dweller to the telescope and the microscope. Originally of vision far less acute than the eagle's, the eye of man now ranges from the fixed star to the 20,000th of an inch bacteria. We analyze the sun's gases with the spectrum; we follow the magnet unerringly on the sea; we utilize the lightning; we count the vibrations of sound; we measure light; we speak across the ocean; we estimate the age of our planet; we analyze atoms; we compose new substances; we make pictures from light; we photograph and map the stars; we explore the pole and test the glacial history of the world; we find subterranean springs, and light our homes from old volcanic sources; we measure the crevasses in the glaciers of Mars; we count tides by the moon; we defy the wind with steam; we foretell storms by the barometer; we construct isothermal lines; we inspect the bottom of the sea; we demonstrate eclipses; we measure space by the transit of Venus; we predict comets; we find a solar and a stellar unit of time; we unravel Egyptian chronology; we trace man downward through the stages of evolution. Man invents the wheel; the ship; the pendulum; the siphon. Under the water, in and on the earth; in the air; in the infinity of space; in the infinity of micro-organisms,— the mind finds no limit, but is ever restless, ever searching; and now in medicine averting pestilence; annulling pain; destroying sepsis; shall we stop?

In gradual development the brain of man has gone on step by step, investigating itself, until we localize disease by the tracings on cerebral surfaces, and condense in that wonderful cortical substance a palimpsest of impressions, mental and material. The brain studies itself. "Know thyself," said the Greek; and in searching the crypts of the human brain we may well echo the description of the greatest of the sons of men, "How noble in reason! How infinite in faculties! In apprehension, how like a God!"

We pass now to the second limitation, in the subject itself. Long since was it said that all was found out in anatomy, and that surgery had nearly reached its limit. Far from this, the microscope has created a new anatomy and a new pathology; physiology changes yearly; the lower animals yield light by the Baconian test of experiment. Anæsthesia enlarged surgery; antisepsis emboldens surgery; and we can set no limits to the advance.

The three sacred cavities; the abdomen, which means hidden; the thorax, which holds two feet of the tripod of life; the skull, which conceals the nerve force, the vital principle, all are explored.

Medicine, always obscure, is growing clearer; and instruments of precision have been applied to our art. The clinical thermometer is the tell-tale of internal changes, inflammatory or septic. What have we to fear? We advance haltingly, but we advance.

Specialism exhausts minute localities; by its occasional discoveries enlightens medicine; by its failure calls sometimes a halt. Specialism, tempered by general medicine, becomes a safe companion in our march onward.

It becomes us soberly to inquire how to study the new seats of surgical exploration. What new methods are needed? Where must we be conservative? Where can we be bold? Since medicine is composed of a science and an art, we must study the science to develop the art. The four pure sciences are Anatomy, Physiology, Chemistry, Pathology. These purely scientific portions of our profession are the only ones that can yield positive knowledge, and this only by dissections, experiments, and analyses.

Modern surgery deals with anatomical regions hitherto insufficiently studied. First, the *fasciæ*; the linings and bindings of the muscles, vessels, and nerves, have great influence in determining the course of suppuration and the size and locality of abscesses. A perfect dissection and preparation of the fasciæ does not exist. It is, perhaps, impossible to make it. Frozen sections and their photographs give the best idea of the relations of the fasciæ. Familiar instances of the importance of the arrangement of the fasciæ are to be found in the psoas sheath; the saphenous opening; the triangular ligament of the perineum; the deep cervical fascia; the fascia lata; the fascia of the forearm and the annular ligament; the posterior ligament or fascia of Winslow in the popliteal space.

Next, the topographical anatomy of the viscera, especially in the abdomen; not only the variations in the reflexion of the peritoneum, but the mobility of the organs; the rhythmic changes produced by respiration on the veins, on the diaphragm as an agent of displacement, and on the pelvic diaphragm, the perineum; the incessant movements of peristalsis and its power to change the locality of organs, — all these have not been sufficiently considered by the diagnostician and by the operator. Normal splanchnology and frozen sections of the abdominal cavity are of more worth to the student than the mnemonics of the origin of all the muscles and the twigs of all the arteries. The exact relations of the mediastina to the œsophagus, aorta, pericardium, and pleural cavities are of great importance also.

No less directly useful is an exhaustive and minute topography of the brain; the bearings of the falx tentorium, corpus callosum, ventricles, the centre of decussating fibres; the ultimate origin of the fibres of the cranial nerves; the sinuses; the relations of the middle ear; the petrosal sinuses; the mastoid cells and their variations; the fissures of Sylvius and Rolando.

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[1] Delivered at Washington May 14, 1889.

When we consider physiology we are struck both by its great progress and by its imperfections. The older physiology is obsolete and discarded; but in the newer physiology the functions of some large and important organs are still undetermined. The ductless glands, for instance; the spleen, the thyroid, the thymus, the supra-renal capsules. An ignorance of their functions renders the surgeon unable to predict the consequences of their removal. Of what avail the brilliant operation to excise a double goitre, if it is to be followed by an obscure degeneration of the nervous or glandular systems? Again, in organs of known function, the limit of the digestive power of different portions of the alimentary canal is not yet definitely learned. How can we get along without a gall-bladder? How important is the pancreas? Can the duodenum supplant the stomach in nutrition? How much ileum can be removed without starvation? What will the rectum digest? All these are pertinent questions for the physiologist, and have a direct bearing on modern surgery.

In chemistry, the whole study of sepsis, antisepsis, fermentation, germicides, the viability of spores, is in its infancy; and as certainly as it already has reversed surgical practice, will do so again and again.

The great desideratum of surgery now, if chemistry can supply it, is a new, constant, local anæsthetic. This would enable us to banish a chief cause of secondary shock from our operations.

Finally, in pathology we have much to learn and to influence our surgical practice. Diseased organs change appearance and they change place. A double puzzle is thus presented to the operator. On opening the abdominal cavity we are sometimes at a loss to locate an organ; and even fail to recognize it, so changed is its look and its surroundings. One part is mistaken for another; a sac for intestine; intestine for sac; adhesions for peritoneum; and so in many other instances. It is of the last importance that the operating surgeon should be so familiar with pathological changes that he can distinguish the false from the true at a glance.

The future destiny of coarse pathological changes of organs: whether they are hopelessly diseased; whether they can recover; whether the affection is organic or inflammatory; is also to be decided, rightly or wrongly by the surgical expert on a brief inspection.

Having considered how much we may learn or hope from the pure sciences, we pass to the other limitation of the subject, the arrest or the cure of morbid processes. All surgical disease is inflammatory or organic; we must advance by checking the inflammatory process, or by preventing morbid growths: the first, by averting suppuration; the second, by discovering the causes of cell change and cell proliferation. Through surgical pathology lies the only path. True conservative surgery would then be limited to averting the consequences of traumatism. The earlier labors of Paget, and the later ones of Virchow, Pasteur, and Koch, give us some hope of being able to abort suppuration; to inoculate for tubercle; or to eliminate the cancer cell. The abortion of inflammation is now much advanced by the progressing knowledge of asepsis. Pyæmia, the opprobrium of surgery, has been enormously reduced in frequency. When suppuration has occurred, evacuation, drainage, and antiseptics have been equally successful in shortening the pyogenic process and in promoting repair. In tubercle we see the best results follow the *évidement* of Sedillot, both in cancellous bone and in suppurating lymphatics.

As in variola, may we not hope that a modified germ may jugulate the tubercle bacillus, by inoculation? or if we meet not the success which the modification of rabies is slowly attaining, that chemistry may give us a reagent to devitalize the germ of tuberculosis.

Cancer, to include under that term all recurrent tumors, is, by Virchow's nomenclature, a misplaced cell-growth. Modern research now gives us hope of finding the cause of this mal-development; and if a germ should be discovered here, a germicide will be finally found.

The manual part of our art, chirurgery — handcraft — requires also to be perfected in connection with the advancing boldness with which we open cavities and feel the pulse of life in its central shrine. New operations demand a new technique; new modes; new instruments; a new code of rules; all to be learned by experiment. Nowhere, perhaps, could the French saying, "jeun chirurgien, vieux médecin," be more applicable. It is to the young surgeon, born and bred in asepsis, that the older physician must look for progress in our art.

In estimating, then, the limitations of surgery, we find none except they be set by ourselves. How should they be set? By conservative judgment opposed to rashness. In the list of modern and useful operations, as distinguished from those barely justifiable, are the following: —

(1) To remove growths or foreign bodies from the cavities of the body: opening the brain; opening the spinal cord; displacement of the upper jaw or of the nose for naso-pharyngeal polypi; cutting into the pharynx from outside the neck, to remove tumors of the tonsil; œsophagotomy for foreign bodies; thyrotomy for growths; gastrotomy for foreign bodies; opening the gall-bladder for the removal of stones; opening the pelvis of the kidney for calculi; supra-pubic cystotomy for calculi and tumors of the bladder; ovariotomy; removal of the diseased uterus or its appendages; laparotomy for gun-shot wounds and for extra-uterine fœtation; excision of the lower part of the rectum for growths.

(2) To reach and evacuate inflammatory products: opening the chest and resecting the ribs for empyæma; opening the abdomen for appendicitis; or for chronic peritonitis; opening and drainage of pelvic abscesses; of abscess of the vertebræ; opening of deep abscess of the neck; evacuation and draining abscesses of joints; peri-nephritic abscess and removal of one kidney.

(3) To relieve obstruction: intubation and tracheotomy; gastrotomy and enterostomy; colotomy; perineal section; herniotomy.

(4) To restore continuity: resection and suture of bowel; resection and union of bone; resection

and reunion of nerves; nerve grafting; reunion of tendons and of muscles.

(5) Unclassified procedures: plastic and osteoplastic surgery; modifications of orthopedics, including bone sections and excisions; litholapaxy; reduction of dislocation of the hip, and of the shoulder, by applied anatomy; endoscopy; rhinoscopy and removal of turbinated outgrowths; pathology and removal of adenoids; aseptic wiring of fractures; local anæsthesia in setting fractures; closing of skull wounds by the insertion of buttons of bone.

(6) Operations as yet *sub judice*, or on trial: resection of the pylorus; resection of cancerous intestine or omentum; removal of the spleen; of large bronchoceles; of the larynx; the pancreas; the prostate gland; the normal ovary; fixation of the kidney or of the uterus; puncture of the pericardium; opening gangrenous abscesses in the lung; tapping the ventricles of the brain.

Rash statements are to be discounted; rash operations are to be discouraged. The wisdom of our earliest Greek master in analyzing the imperfections of our art holds true to-day: "Ars longa, vita brevis est; occasio fugax; experientia fallax; judicium difficile." Yet with Bacon came the new light of experiment. In his immortal words: "Recte veritas temporis filia dicitur, non auctoritatis" Lean not on authority; the test of truth is time.

Original Articles.

THE REACTION OF THE BLOOD.[1]

BY JOHN A. JEFFRIES, M.D.

While much attention has been paid to the formed elements of the blood, but little comparatively has been given to its chemistry. The first question to suggest itself from this side has received but a sparing amount of attention in Europe and none at all in America. I refer to the reaction of the blood. We read that the blood is alkaline and that is about all. To be sure, we hear much about an acid diathesis in rheumatism and gout, unsupported in the first case by any evidence. In gout Garrod has clearly showed the part played by uric acid, that is, its prevalence in the system and especially in the affected parts.

While working in the Pathological Institute of Vienna from the winter of 1884 to 1886, I was struck by the peculiar general distribution of the tubercle bacillus, as represented by tubercular products found at autopsies.

One or another of the products of tuberculosis were to be found in the majority of the subjects which came to the table, and this in spite of the fact that those known to be dead of phthisis mostly went to the anatomical department. Yet tuberculosis of the muscles is relatively rare; it is by no means easy to procure examples of tuberculosis in muscular tissue for microscopic preparations. Pathological changes are to be found, due, as E. Fränkel points out, to the general effects of the disease, but the bacillus is not so easily found. The same is true of the stomach and to a less but distinct degree of the genito-urinary tract. In any case of acute miliary tuberculosis the little glistening, transparent tubercles are to be found scattered along the blood-vessels throughout the rest of the body.

Why this difference? Why are organs of such diverse structure as the mucosa of the stomach, the muscles, and the genito-urinary organs comparatively exempt? It might be said that the histology of the muscles was very distinct from that of other parts, and so not adapted to the development of tuberculosis; but the same cannot be said of the stomach, while the mucosa of the intestines is so often radically affected.

These parts have, nevertheless, one character in common which separates them broadly from the rest of the body. They are exposed to an acid reaction. During a good part of the time the mucosa of the stomach is bathed in an acid juice secreted by itself; the same is true of the urinary tract and of the muscles. The urine is mostly acid in reaction, the muscles change during action from an alkaline to an acid reaction. This is easily shown by inserting bits of litmus paper in any relaxed muscle; the red bits become blue. Now cause sharp contractions by applying a faradic current to the nerve above, and the blue paper will shortly turn back to red.

As opposed to this, all know that as a general law bacteria grow poorly or not at all on media of animal origin with an acid reaction, and any one who has grown the tubercle bacillus knows that it forms no exception to the rule. The bacteriologist who neglects the reaction of his media will soon have cause to rue.

Putting these two together the question, Is the reaction of the tissues one of the leading causes of the distribution of tuberculosis, naturally presents itself and may in a general way be extended to the whole group of infectious disease.

To investigate this, naturally brought up the question as to the reaction of the blood: could it be changed and does it vary in different kinds of animals?

On returning from Europe during the latter part of 1886 and first part of 1887 I took up the subject in co-operation with Dr. James J. Putnam. Later, by pressure of more urgent work and the difficulties inherent to all scientific work in this country we were both of us driven from the subject. At this time we stood alone in the question, and Dr. Putnam was inclined to believe, in view of Meyer's work, that our methods could not give any reliable results. As, however, the subject has been since taken up by Jaksch,[2] it seems to me that a report of our methods and results on testing the reaction of blood may not be without interest.

Of the chemical composition of the blood little if anything is known. We have analyses of the ash of the corpuscles and serum, and the elements in them, but how these are combined is a matter of speculation. We are therefore dealing in reality with an unknown mixture.

To test the reaction of the blood two different methods have been pursued, one by the direct use of litmus or other indicator, the other by inference from the amount of carbon dioxide that can be extracted by the air-pump, either alone or with the addition of a certain amount of acid, usually phosphoric. We pursued the direct method.

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[1] Read before Boston Society of Medical Sciences, March 19, 1889.

[2] Jaksch. Ueber die Alkalescenz des Blutes bei Krankheiten Zeitschrf. f. klin. Med., 1887, p. 350.

A moment must be given to what this method gives us. All reagents as to reaction are merely indices, and do not run, as many seem to suppose, parallel to each other and chemical composition. The parallelism is only general, not absolute. Of these indices litmus seemed to be the best adapted to our purposes. It shows both actions, acid and alkaline, distinctly, can be used on paper, and is fairly sensitive.

Alkaline bases turn the color blue, and acids red, if they act. Some, as uric acid, act as neutral bodies — have no effect on the color. Salts follow more or less closely after their composition: thus most acid salts turn the paper red, alkaline ones blue, while still other are neutral, have no effect. But this is not invariably the case: bicarbonate of soda is an acid salt, that is, the acid element is not satisfied, is capable of joining with more base, yet its reaction is that of an alkali to litmus, which it blues strongly.

In this paper, therefore, in common with all others who have written on the subject, by alkaline is meant the property to blue litmus.

Owing to the hæmoglobin and the coagulation of the blood when drawn from the body, testing the reaction offers peculiar difficulties, and various expedients have been resorted to. Thus Kuhne[3] tried to separate the fluid by means of dialyzation; Liebreich[4] and others used a very thin plate of pure gypsum, through which the serum of the blood passed, and could be tested either by litmus paper or directly by previously soaking the tablets in a neutral solution of litmus. Lassar,[5] Canard,[6] Mya and Tassinari,[7] Landois,[8] and von Jaksch all used litmus paper, some noting reaction from the part soaked beyond the clot, others washing the blood off. At times the paper was previously moistened with a salt solution to keep the hæmoglobin off.

To prevent coagulation the blood has by most recent observers been mixed with a neutral 10% solution of sulphate of soda.

As an acid for titration phosphoric,[9] tartaric, and oxalic have been used in very weak solution. Phosphoric is ill adapted, since in small quantities it gives but a poor reaction with litmus; the salts are often amphoteric. Oxalic I have distrusted on account of its strong affinity for lime.

The blood has been drawn in various ways, either in considerable quantities from the arteries of animals, or a few cubic centimetres from the finger in man by means of a lancet, or a drop from a needle prick, as practised by Landois.

Landois and von Jaksch used a large number of solutions of sulphate of soda *plus* a given amount of acid, and added a definite amount of blood by means of a pipette, and then noted, after stirring, which was neutral; read off the acid strength. The other authors slowly added the acid solution and tested from time to time. This is inadmissible, since the blood diminishes in alkalinity very rapidly after being drawn. All have used a small amount of blood, but agree that the results are the same as with larger quantities.

The method used by us, worked out in the rough by Dr. Putnam before I joined him, is as follows:[10] A small drop, .02 c.cm., of blood taken from a drop produced by a prick of the back of the finger is mixed with a given quantity of a standard dilute solution of tartaric acid and all then placed on a piece of very smooth-painted, dry litmus paper. This is then washed off in neutral water, and the color, where the drop has been, noted. As a rule both colors of litmus papers were used. The whole process takes from fifty to ninety seconds. If the first test does not come out right, a second, with more or less acid as indicated, is to be made.

As our experience increased the method was perfected and various sources of error eliminated. It may therefore be well to give the whole in detail.

Our pipettes are made from a piece of thermometer tubing of rather coarse bore, ground to a point at one end, from which marks at definite intervals, each equal to about .01 c.c., run, up to twenty. On the other end is slipped a piece of rubber tubing about three inches long and stopped by a solid, glass rod. By means of this rubber tube any desired amount of fluid can be drawn up into the tube and the end then dried with a bit of absorbent cotton.

The acid solution is made by taking a $\frac{1}{5000}$ solution of corrosive sublimate and adding sufficient pure crystalline tartaric acid, so that fifteen parts of the acid solution exactly neutralized eight parts of the volumetric solution of soda of the United States Pharmacopœia diluted with thirty-nine times its bulk of water. The acid salt of mercury is added to prevent the growth of the lower plants, which otherwise quickly occurs.

From six to seven measures of this acid solution are drawn into the tube and well up, the lower six being left empty, and the tip of the pipette dried.

Around the second joint of the finger, carefully cleaned, a light rubber band is passed, and a prick with a surgical needle made in the back of the last phalanx behind the quick of the nail. From the drop of blood which quickly comes two measures are drawn into the pipette, and the tip wiped with cotton. Then blood and acid are squirted into a small vial and mixed by rapid alternate sucking and squirting of the pipette. Lastly, the mixture is drawn up and deposited on bits of the litmus paper previously pinned into corks. At the end of five seconds the corks and paper are plunged into water and the color noted.

The whole is to be done in much less time than it takes to describe it, and is quite accurate. The acid can be measured off at leisure: haste only comes after the blood is drawn. Any slight surplus of blood can be quickly removed by a pledget of absorbent cotton. Some sources of confusion are to be noted. The blood is bright red; therefore if the observer gazes intently at it while on the paper, he will after washing it off see the complementary color, irrespective of the color of the paper. This is really nothing but an experiment on negative after-images which is out of place. Again the observer must be careful, especially if near-sighted, not to breathe upon the paper, as it will quickly become affected by the carbonic acid expired by the lungs. The test paper must be handled with clean forceps, not touched by the fingers, which are acid and will affect it; the same is true of almost any moist vegetable product, such as wood.

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[3] Kuhne. Die einfaches Verfahren die Reaction hämaglobinhaltiger Flüssigkeiten zu prüfen. Virchow's Archiv, xxxiii. p. 95, 1865.

[4] Liebreich. Eine Method zur Prüfung der Reaction thierische Gewebe. Berichte der deutsch. chim. Gesellsch. zu Berlin, 1868, p. 48.

[5] Lassar. Zur Alkalescenz des Blutes. Pflüger's Archiv, ix. p. 44, 1874.

[6] Canard. Essaie sur l'alcalinité du Sang dans l'etat du santé et dans quelques maladies. Paris, 1878.

[7] Mya, Tassinari. Sulle variazioni della reazione alcalina del sangue venoso. Archiv per le scienze mediche, ix. p. 378, 1886.

[8] Landois, Real-Encyclopädie der gesammten Heilkunde, 2 Aufl. iii. p. 161, 1885.

[9] Zuntz. Zur Kenntniss des Stoffwechsels im Blute. Centralb. f. med. Wiss., 1867, p. 801

[10] This method is similar yet distinct from that of Landois, and more portable.

The color of the paper must be promptly noted, since it fades on standing.

This method is accurate, and I believe gives us about all that is to be gathered concerning the direct reaction of the blood. Over the older methods it has the advantage of being applicable time and time again to anybody, as the writer knows by personal experience, and portable.

It gives about fifteen different degrees of alkalinity between a neutral reaction and the higher alkaline reactions noted. From the known ratio of blood and acid used the amount of acid required to neutralize 100 c.cm. of blood can be quickly counted. Thus, if two parts of blood and seven of acid are used we have 100 c.cm. of blood = 350 c.cm. of acid = $\frac{350\times8}{15\times4.0}$ of volumetric solution of soda = 4.6 = .186 gramme of pure NaOH. As the blood can be made a fixed quantity, two parts working table as given below can be made, where the first number is the number of acid parts taken and the last the amount of alkalinity measured by NaOH. in 100 c.cm. of blood.

Parts of Acid. Sol.	Parts of Na. Sol.	Na in mg. to 100 ccm of Blood	Parts of Acid. Sol.	Parts of Na. Sol.	Na. in mg to 100 ccm of Blood
7	$.5\dot{3}$	$2\dot{6}$	7	$37\dot{3}$	$18\dot{6}$
2	$1.0\dot{6}$	$5\dot{3}$	8	426	$21\dot{3}$
3	1.60	$7\dot{9}$	9	4.80	240
4	2.13	$10\dot{6}$	10	$53\dot{3}$	$26\dot{6}$
5	$26\dot{6}$	$13\dot{3}$	11	586	293
6	320	160	12	640	320

It is to be noted here that Meyer,[11] a strong advocate of the CO_2 method of determining the alkalinity, has strongly attacked all efforts to determine the reaction by direct testing. He points out that the blood is of unknown composition, hence we do not know what we are dealing with; and, second, that many complex substances do not act on litmus as indicated by their chemical affinities.

While not claiming that any direct method gives an absolute measure of the bases, it seems to the writer, in common with von Jaksch and others, that the measure of alkalinity as directly observed is of value from both clinical and physiological standpoints.

We do not know just what the blood is composed of, but we do know that it is pretty much the same thing all through air-breathing vertebrates, and is therefore fairly comparable.

The other objection, as pointed out by Mya and Tassinari, is a play on words. Nobody for an instant supposes that in measuring the reaction of a complex mixture he is obtaining an absolute measure of the alkaline or acid bases, as defined by chemical philosophy, which remain unsatisfied, but knows he is making an empirical observation of the degree of reaction as indicated by the index used.

The true objection rests in the fact that the blood begins to lose its alkaline reaction very shortly after being drawn. Empirically, however, it can also be shown that but little diminution occurs in the first ninety seconds, when mixed with the acid mixture used. The corrosive sublimate tends to hold the blood unaltered.

As for the CO_2 method, it is for general application utterly out of the question. It does not give any idea of the quantity of unsatisfied bases, and is based on a whole train of suppositions. Reducible to the facts that no other explanation of the retention of the CO_2 in the blood has been given than a grip exerted by the unsatisfied bases, and the fact that acids fed to animals reduce the CO_2 in the blood, presumably by satisfying the bases.

In defects the method is rich, among them the fact that the CO_2 in the blood is much influenced by the respiration, entirely independent of the alkaline bases present, as shown by Minkowski.[12]

In spite of this the method is of value, and to the writer's thinking both methods are increased in value by the fact that the results obtained by careful observers by the two methods closely coincide.

In studying the alkalinity of the blood we have but varying degrees of reaction to compare,—possibly at times a change to acidity just before death,—that is, changes in quantity only. Qualitative changes are only to be got in changes of condition of the animal observed. Thus poisons, complete change from natural diet, and the like, may be made. Again the urine requires careful attention as being the chief scape-vent for the blood, and therefore influenced by the varying conditions of the blood. But the first step is to acquire an idea of the normal conditions of the blood, and its relations to the urine and food, time of day, age, and sex.

In determining normal conditions the CO_2 method is of very little value: continuous observations cannot be made, and the operation of bleeding throws the animal at once out of normal conditions. This is not true of our method: a simple prick does no harm, and the experiments can be conducted upon man.

The figures of Meyer, Feitelberg,[13] and Minkowski run, for each kind of animal tested, within a 30% limit of variation, and making due allowances for differences in the complex technique, justify their assumption of a normal standard of CO_2 in the blood. By the direct method Lassar, Mya and Tassinari, and Canard have endeavored to find standards,—the first in rabbits and cats, the last two authors in man. Reduced to a common standard Lassar found —

German rabbits, 100 c.cm. of blood =	....	.188 NaOH.
French " " " "	....	.212 "
Cats, " " "	....	.241 "

the variations being within 15 per cent. from the mean. Mya and Tassinari place the average in man at .4, a figure much higher than those of any other observer. Canard gives .228 as the average, .272 as the maximum, and .203 as the minimum of fourteen healthy adults. My own figures run constantly much lower: thus rabbits at .160; frogs at .70; hens at .200; man, from 5 healthy individuals and one hundred observations, at about .200. max. .250; min. .160. Von Jaksch figures in disease from .036 to .350.

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[11] Meyer. Studien über die Alkalescenz des Blutes. Archiv f. exper. Path. u. Pharm., xvii. p. 304, 1883.

[12] Minkowski. Ueber den Kohlensäuregehalt des arteriellen Blutes beim Fieber. Archiv f. exper. Path. u. Pharm.

[13] Feitelberg. Ueber den Einfluss einige Gifte auf die Alkalescenz des Blutes. Diss. Inaug. Dorpat, 1883.

These figures, it will be seen, are very different from one another, and preclude all deductions as to quantity. They, however, in the case of each observer, give relatively similar results. These differences are doubtless due to the different acids used, the nature of the blood, arterial or capillary, the time the blood had been drawn, and the quality of the litmus paper. Ordinary litmus paper, such as most of the authors used, contains a good deal of acid or alkali, which tends, when using small quantities of blood, to greatly increase the reading.

My own observations have so far been directed to ascertaining the normal standard, and especially any variations, diurnal or from day to day. Below is given a set of figures, taken from one person, reduced to milligrammes of NaOH to 100 c.cm. of blood. B, L, and D denote the last meal. Breakfast at 7 A.M., lunch at 1 P.M., when taken. The regular dinner hour was 7 P.M., too late for observations to be made after it. On the two occasions where D is put down it was taken earlier in the afternoon.

9.30	a m.	8/8	86	B	175
2.	p m.			B	226
6	p m			D	175
8	a m	9/8		B	175
11 30				B	175
3 30	p m			B	245
2 30	p m	10/8		B	245
3.30	p m	11/8		L	210
3	p m	13/8		B	245
12	Noon	15/8		B	280
3	p m	17/8		L	199
2	p m	30/8		L	173
8.30	a m	31/8		Fast	160
8 30	a m	2/9		"	160
2.	p m	8/9		L	186
5	p m	8/9		L	213
2	p m	9/9		L	186
2	p m	10/9		L	213
11.30	a m.	11/9		B	160
1	p m	14/9		B	226
3	p m	11/9		B	250
4.30	p m	11/9		D	200
8 30	a m	12/9		B	250
1.45	p m	13/9		L	240
11	a m	1/10		B	213
9.30	a m	3/10		B	200
2	p m	2/10		B	213
9	a m	3/10		B	173
12	m	3/10	86	B	186
11.30	a m	4/10		B	186
2.	p m.	4/10		B	226

9.30	a m	5/10	B	250
2.30	p m	5/10	B	213
9.20	a m	6/10	B	186
2	p m	6/10	B	186
9 20	a m	7/10	B	213
2	p m	7/10	B	200
10	a m	8/10	B	186
2	p m	8/10	B	213
11	a m	9/10	B	213
2	p m	9/10	B	186
9	a m	10/10	B	186
10	a m	10/10	B	186
0.15	p m	10/10	B	160
2.50	p m	10/10	L	160
9.15	a m	11/10	B	186
2	p m	11/10	B	200
9.30	a m	12/10	B	186
2,10	p m	12/10	L	186
11.	a m	13/10	B	186
2	p m	13/10	B	186
1.20	p m	14/10	B	213
2	p m	15/10	B	213
11	a m	16/10	B	186
2 15	a m	16/10	B	213
9 15	a m	17/10	B	186
2.	p m	17/10	B	130
9	a m	18/10	B	213
2	p m	18/10	B	213
9	a m	19/10	B	240
7	a m	28/10		146
9 30	a m	25/10	B	173

11.	a m	24/10		B	186
2.15	p m	25/10		L	200
7.20	a m	5/11		Rest	160
10.	a m	5/11		B	213
2	p m	5/11			226
10	a m	10/11		B	186
2	p m	8/11			213
2.30	p m	10/12		L	186
10.45	a m	30/1	87	B	186
12,	Noon	30/1		B	146
1.30	p m	30/1		B	146
10	a m	5/2		B	173
0.30	p m	5/2		B	146
0.10	p m	11/2		B	186
2.	p m	11/2		L	146
4	p m	11/2		L	120
10	a m	22/2		B	200
1.	p m	23/2		B	186
1.45	p m	22/2		B	173
2.45	p m	23/2		L	173
3,40	p m	22/2		L	186
8 45	a m	1/3	87	B	186
11.20	a m	1/3		B	186
1.	p m	1/3		B	186
5	p m	1/3		L	160
				Rabbit.	
11	a m	14/2			160
10.30	a m	20/2			160
11 30	a m	4/2			133
1 20	a m	20/2			120

The above figures look rather formidable, but with a knowledge of the life of the observer seem to clearly show one general rule, namely, a gradual rise in the reaction from rising to before dinner. Thus the average on rising is .155; between 9 and 11 A.M. .189; between 1 and 3.30 P.M., with lunch, .191; without lunch, .212. These averages include all the figures where a regular life was being led, including about five miles of walking and the ordinary work of an out-patient service. The fact that the reaction was higher in the early afternoon of days when no lunch was taken than when lunch was taken is of interest; also the two measurements taken after dinner, which show a lower reaction than before dinner. These two facts seem to stand in direct opposition to Canard's and Sticker and Heuber's[14] observations, who found that the alkalinity rose after meals. The rise they attribute to the loss of the hydrochloric acid poured into the stomach.

Canard's figures I cannot explain; those of Sticker and Heuber were done by Zuntz' method with phosphoric acid, which is unreliable, and the time of day is not given; they may therefore have been dealing with the early morning rise, which is clearly due to the more active life. As the reaction of the chyme in the intestines is alkaline, it is just as reasonable to assume that the blood should be reduced in reaction during digestion, especially as absorption is rapid and the result of ordinary food on the acid side.

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[14] Sticker u. Heuber Ueber Wechselbeziehungen zwischen Secreten und Excreten des Organismus. Zeit. f. klin. Med., Bd. 12, p. 136, foot-note.

The reaction of the blood the writer believes to be of considerable importance to the economy, and therefore not very variable in perfect health.

Noting the fact that the alkalinity was very apt to be high at times when headache over one or both eyes, with tenderness of the nerves, existed, tests were made with two of the drugs found to relieve the pain. Sulphate of quinine in ten-grain doses was found in three trials to depress the reaction as noted. The same was true of antifebrin in five trials. As the normal tendency of the reaction was to rise during the time of these experiments, it seems highly probable that the observation is correct. Perhaps the headaches were gouty in nature.

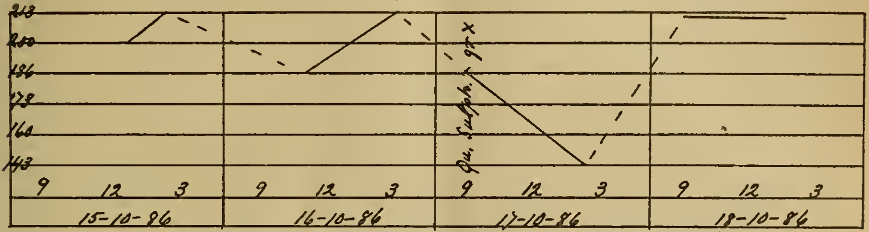

Chart showing effect of quinine

The reaction of the blood in poisoned animals, as indicated by the amount of CO_2, has been studied by several observers, and found to be diminished in septic fever, iodin, mercury, nitrite of soda, toluylendiamin, oxalate of soda, and strychnine poisoning. Alcohol and salicylate of soda apparently increase it.

In disease the writer regrets that he has been unable to procure sufficient material. Several writers, however, have turned their attention in this direction. There are many old records of the blood being acid in cholera and leukæmia, but most have been taken from the corpse and so are worthless. Cantani claims to have found the blood acid in advanced cholera cases during life, and Mya and Tassinari state that this was found to be the case in Naples during the last epidemic. The method of determining the reaction is not given in either case.

Canard found the reaction increased in acute and subacute articular rheumatism (it is not clear if salicylate of soda was given), and diminished in arthritis deformans. Diabetes mellitus and cancer of the stomach also showed a diminution.

Mya and Tassinari found the reaction increased in pneumonia, treated by baths and stimulants, diminished in typhoid, cancer, phthisis, Bright's, diabetes, oligæmia, and chlorosis.

Jaksch has made by far the most extensive study of the subject, and found a distinct diminution in the reaction during fever, quickly recovering after it. The most marked changes were found in uræmic poisoning, destructive diseases of the liver, and leukæmia where the blood becomes almost neutral. The other blood diseases offer a less marked diminution.

How the standard is maintained in the blood is not thoroughly known. But in normal conditions animals maintain an alkaline reaction against the final result of the ingesta, which result in an acid surplus. The acid is thrown off by the lungs (CO_2) and in the urine. The weight of evidence seems to be that the acid does not go through the blood as such, but combines and is separated in the kidneys in part, in part goes out as a whole. Therefore by feeding with sulphuric acid it is possible to materially reduce the alkali in the blood; that is, rob the system, of course with disastrous results. Under these conditions much ammonia appears in the urine of carnivora but not in the urine of herbivora. Reasoning from this, Minkowski concluded that the blood should diminish in alkalinity in the latter, and has found this to be true of septic fever.

Scattered as the above is, it seems to the writer to offer a field for productive investigation. We know the reaction does change, has a normal value, cannot be without effect on the system, and have a ready means of determining the reaction.

ON THE USE OF BELLADONNA AND CANNABIS INDICA BY THE RECTUM IN GYNECOLOGICAL PRACTICE.

BY JOHN W. FARLOW, M.D.

It has seemed to me that, while the direct application of medicinal substances to the uterus and vagina has received the attention it merits, the absorbing power of the rectum and its intimate relation to the different pelvic organs have been somewhat neglected. Whoever is in the habit of examining many patients by the rectum is aware how the cervix, the posterior and lateral portions of the uterus, the broad ligaments, tubes, ovaries, Douglas's fossa, the utero-sacral ligaments, in fact, nearly the whole pelvic contents, are within easy reach.

The vaginal entrance in most gynecological patients is more or less gaping, and whatever medicines are left in the vagina cannot be so readily and surely retained as by the rectum, where the firm closure of the anus renders their escape impossible. The patient can go about by day and go to bed at night with the assurance that the medicine once put into place will stay in place. In unmarried women it is very desirable to avoid vaginal interference, provided the requisite treatment can be carried out *per rectum.* To women who travel, or are away from home and conveniences, the douche pan and syringe are great nuisances, whereas a small box of suppositories is certainly not objectionable.

It is proverbial that most women are constipated, and this is doubly true of those with uterine or other pelvic disease, so that the rectum nearly always demands attention. Another very common condition is frequent and more or less painful micturition.

The drugs of which I wish to speak to-night, and which I have used for several years, are belladonna and cannabis indica. Belladonna has a sedative action on the uterus and pelvic contents, and relaxes rather than constipates the bowels. Its value in irritable conditions of the bladder and urethra is well known. This combination of qualities is called for in a very large number of women. Cannabis indica has somewhat similar properties, and especially for sensitive ovaries and in the various painful affections of those organs its use is often productive of much good. It has few equals in its power over nervous headaches such as women with pelvic trouble are subject to. It has seemed to me that these two drugs were capable of performing excellent service in gynecological practice.

In what cases should these suppositories be used? Let us begin with the youngest patients we are likely to have for medical gynecological treatment, from the age of puberty up to the usual time of marriage. The common complaints of these young women are those due to painful menstruation, or where there is perhaps not much real pain but a considerable degree of pelvic and even general excitement, making it advisable for them to be very quiet and possibly stay in bed, not only during the flow but also the few days preceding; and often the weakness resulting from this nervous excitement lasts for several days after the flow has entirely ceased. Frequent micturition and headache are also very common. If the excitement can be moderated, if the pelvic organs can be made less irritable, there will be less pain, less hæmorrhage, less weakness, and consequently a much longer period of health between the catamenia. This, I feel sure, can often be very successfully done by the rectal use of belladonna and cannabis indica, beginning a few days before the menstrual symptoms or prodromes appear. I am not referring to cases of marked uterine disease or defects, such as imperfectly developed or misplaced uteri or ovaries, where vaginal examinations and treatment, possibly surgical, are necessary.

After marriage and before childbirth has taken place, the uterus and pelvis, especially the left ovary, are very liable to be tender and irritable, even when there is no evident organic disease. The backache, bearing down, pain in the side, groin, and legs, the frequent micturition, painful coitus, constipation and headache are often much relieved by the suppositories.

At the menopause the well-known symptoms, the various reflexes, the excitement, the irritability and pain in the neck of the bladder, flashes of heat and cold, according to my experience, can frequently be much mitigated by the suppositories.

A common cause of backache, dragging sensation, and painful coitus is the existence of tender bands in Douglas's pouch or tender utero-sacral ligaments. These are often the cause of and are made worse by constipation, but can be much helped by the suppositories.

There are many other conditions which might be mentioned, but the above will serve to point out for what conditions the drugs enumerated are of especial service. I will refer briefly to one case as an illustration of the qualities I wish to refer to in this paper. Mrs. A., thirty years of age, married three years, without children, had had backache, a tired feeling, frequent micturition and leucorrhœa for several days before menstruation, so that she was obliged to lie down. The catamenia were not painful, but were somewhat profuse, and at the end of the time she was nervous and weak, not from pain or loss of blood, but from the long continuance of the nervous irritation. She had been under the care of several very good physicians, but local and internal treatment of various kinds had failed to give her relief unless she lay down most of the time from the few days before the menstruation to nearly the end of the flow, so that she was of the opinion (and I think she was right) that to the recumbent position was due more credit than to the physicians. I ordered her to use at night, beginning a week before her menstrual discomfort, a rectal suppository containing a quarter grain each of extract of belladonna and extract of cannabis indica. This she continued during the menstruation. The relief obtained was very great, as she did not have to keep her bed before or during the flow, and at the end of the time she was in much better condition than for a long time at a similar period.

It may be said that we have other and better means at our command for the same purpose. Let us consider, for example, the hot douche. In young, unmarried women it is generally inadvisable to use it. There are also many women who dislike it or who have not the convenience for its proper use. There is no doubt that, in inflammatory diseases or where products of inflammation are to be absorbed, the hot water is one of the very best of remedies. But it has seemed to me, in many instances where the conditions just mentioned do not exist, and where the pelvic organs are not organically diseased that the continued use of the hot douche has brought about a flabbiness and relaxed condition of the parts and a more or less susceptibility to the very symptoms it was intended to overcome. Vaginæ which are constantly flooded with hot water become relaxed, have less tone than normal, and the frequent washing out of the lubricating vaginal mucus can hardly be an advantage. I remember hearing an eminent medical man in another country say that he thought that women who used frequent injections of hot water were less likely to conceive than if they did not use the water. The almost classical likening of the effects of the hot douche to the shrivelled hands of the washwoman will perhaps serve as an illustration of my meaning. If there is any disease of the hand indicating the frequent use of hot water it is well to use it, but to hold up the shrivelled and sensitive hands of a washwoman as an illustration of what the hot douche can do to the vagina and uterus is to me evidence that discrimination should be used even in the use of hot water. These remarks, as I have said, I do not wish to apply to the well-known and inestimable value of the hot douche in proper cases.

With reference to the bromides, which are often prescribed with benefit, when we take into account the usual combination of symptoms on the part of the bladder, rectum, uterus, and ovaries, and bear in mind that the suppositories can be placed directly at the seat of disease, it appears to me that there is a manifest advantage on the side of the suppositories.

As regards dosage and manner of administration, I do not think there is anything to be gained by pushing the drugs to their physiological action. I have generally ordered a quarter grain each of extract of belladonna and extract of cannabis indica in a rectal suppository, to be used at night, and sometimes it is well to use one also in the morning after the bowels have moved. There are some patients who can tolerate only one-eighth grain of extract of belladonna, even by the rectum. To such smaller amounts should be given.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting, March 9th, 1889.

Dr. Farlow read by invitation a paper

ON THE USE OF BELLADONNA AND CANNABIS INDICA BY THE RECTUM IN GYNÆCOLOGICAL PRACTICE.[1]

In reply to questions Dr. Farlow stated that he had found belladonna and cannabis indica, given in the manner described, of great use in cases of frequent micturition occurring after the menopause and interfering with sleep; that he believed that the action by the rectum was largely a local one on the neighboring uterine organs, and therefore much more efficacious than when the drugs were given by the mouth.

Constipation, so frequent in this class of cases, he had often found to yield to the same treatment of suppositories containing belladonna. He thought that the indications for this method of treatment occurred more frequently among the upper than the lower classes.

Dr. C. E. Stedman had given up the use of cannabis indica some years ago on account of the difficulty of obtaining reliable specimens of the drug.

Dr. J. P. Reynolds spoke of the great accessibility of the uterine organs from the rectum and of the advantages of examining by the rectum in the case of unmarried women.

Dr. Sinclair said that Sir James Simpson of Edinburgh was the first to use suppositories some thirty-five years ago, and that Dr. Storer and himself shortly afterwards were the first to use them in Boston. The earlier suppositories were very insoluble, being made sometimes with wax, and would often remain inert in the rectum; but twenty-five years ago Dr. Ellis, of Kent, England, suggested cocoa butter as an excipient, since which time their use has rapidly spread.

Dr. Cotting said that before the introduction of suppositories the drug was introduced in solution into the rectum by means of a syringe.

Dr. Sinclair agreed with the reader that hot-water douches are ordered too frequently and indiscriminately, and that a temperature below 115° in the douche was of very little use.

Dr. J. P. Reynolds read a paper on

THE TREATMENT OF ABORTIONS.[2]

Dr. Sinclair said he used both the tampon, which acts in the same way as the colpeurynter, and the immediate method of emptying the uterus. In only one case had he seen death from lack of treatment, death occurring from hæmorrhage caused by a bit of placenta in the neck of the womb.

Dr. C. E. Stedman had experienced the greatest difficulty in those cases where a portion only of the ovum was retained. In those cases he had emptied the uterus, but as he had never seen a death from hæmorrhage he was not in such a hurry to perform this operation now as formerly. The distance of the physician's office from the patient should be taken into consideration in deciding on this operation.

Dr. Hodgdon for many years had used the tampon, finding the ovum in the vagina after about twelve hours; but in many other cases portions of the ovum remained under this treatment and hæmorrhage occurred at intervals. To avoid the invalidism caused by this state of things his practice for some years was always to empty the uterus at once, and he had never regretted this course.

Dr. Chadwick had used the tampon in the early years of his practice, but thought that the hæmorrhage was often merely concealed, the blood distending the upper part of the vagina. Of late years he had always emptied the uterus, using the finger or dressing forceps, and occasionally the curette. In one case it was necessary to plug the cavity of the uterus with tampons soaked in perchloride of iron. Acetic acid or vinegar he considered very efficacious for controlling hæmorrhage. In one case he removed the retained portion of ovum at the Dispensary with his fingers.

Dr. Farlow, a guest, said there were two classes of abortions, one of which, where there was much hæmorrhage, required prompt treatment in emptying the uterus. The other class was very common and required no treatment, as these cases frequently occur and are recovered from without the attendance of a physician. Considering the frequency of miscarriages the world would soon be depopulated if they all needed energetic treatment to ensure recovery, as this energetic treatment was often not at hand. The formation of polypi where portions of the ovum were retained he considered doubtful.

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[1] See page 507 of this Journal.

[2] Publication reserved.

Dr. J. B. Ayer, a guest, had generally followed the expectant line of treatment. He recently saw a case where septicæmia occurred three months after miscarriage. Dr. Elliot curetted and the temperature rapidly fell from 103° to normal.

Dr. Davenport said that the cases of abortion in which he feared trouble were those occurring between the second and fourth month. Before the second month the ovum was usually expelled entire, and after the fourth month there was complete separation of the placenta, and no subsequent trouble.

In miscarriages occurring between those periods there was a liability of a retention of some part of the placenta. His practice was, if the miscarriage was, in his opinion, sure to occur, to tampon. Within twelve hours the fœtus would probably be found lying on top of the tampon. If the placenta did not follow within a few hours, to remove it under ether with finger, curette, or Emmet's polypus forceps.

Sometimes a portion of tissue could be felt, apparently lying loosely in the cervix, and it was a temptation to leave it with the hope that it would be expelled. Often, however, such pieces were attached high up and had to be forcibly removed.

Portions of the after-birth may be retained a long time without symptoms, but he had seen a temperature of 103° develop within forty-eight hours after a miscarriage, from a retained placenta.

Dr. Green said that in early abortions, where there was much hæmorrhage, he tamponed the vagina, partly to control the bleeding, and partly to excite or intensify uterine contractions; on removing the tampon, the ovum would usually be found to have been expelled from the uterus. Then after the third month, he would not hesitate to use the tampon, if the membranes were unruptured; of course, the colpeurynter could be used in place of the tampon. With tampon or colpeurynter hæmorrhage could be controlled and dilatation of the os uteri accomplished; and in the majority of cases the uterine contents are then expelled without further interference. If, however, the placenta or membranes are retained, he would remove them by using two fingers within the uterus (the half hand being introduced into the vagina), rather than to use placenta forceps. With the fingers one is better enabled, in his judgment, to remove the fœtal envelopes intact. He thought that the fear of septic trouble arising from the retention of bits of the placenta or membranes was without foundation, provided that fingers and instruments (if used) were aseptic; the retained parts could only be infected by the introduction of germs from without. If, however, septic trouble should arise, or subsequent hæmorrhages should occur, the offending bits of retained secundines should be removed with the dull curette and the uterus treated antiseptically.

Dr. Townsend had always emptied the uterus when the abortion was inevitable and when the ovum did not come away soon, using the finger in ten cases and in one case the curette, and had always had uninterrupted recoveries without hæmorrhage or rise of temperature. In a recent case removal with the finger of portions of ovum from the cervix was not followed by cessation of the hæmorrhage, and under ether he had curetted off closely adherent fragments of chorionic tissue which he was unable to remove with his finger. Bleeding at once ceased and a good recovery followed. He questioned the use of a colpeurynter in such a case, and thought that without the curette detachment of the remaining fragments of the ovum would have come about only by a slow process of maceration or suppuration, with the risk of hæmorrhage and sepsis.

Dr. Chadwick, in reply to a criticism by Dr. Green, said that he had often removed the ovum through the undilated os by means of a curette or forceps, and that those cases had done as well as others where the os was sufficiently dilated to admit the finger.

Dr. Vickery, a guest, spoke of the feeling of the uterine wall when imparted to the fingers holding the curette showing when all the retained tissue was removed.

Dr. J. P. Reynolds, in closing the discussion, spoke of the very prevalent idea that all cases of abortion should be at once treated energetically, and that he believed this way in some cases very injurious, and he would repeat that a proper expectant treatment had never under his observation resulted badly. But where the physician simply gives a suppository of morphine and leaves the patient still bleeding this he considered to be criminal neglect. Such a case he cited. With the use of the colpeurynter he had found that bleeding ceased in twenty-four or thirty-six hours. A case where, after five weeks from the miscarriage, the retained portion of ovum stuck out of the uterus, in shape like a cauliflower, with a blackened vaginal portion, illustrated well the tolerance of the uterus. There was no sepsis in this case.

Dr. C. E. Stedman moved that the thanks of the society be expressed to Dr. Jules Rouvier, who presented to the society a work entitled, "Hygiene de la Première Enfance."

THE AMERICAN SURGICAL ASSOCIATION.

Annual Meeting held in the new Army Medical Museum, Washington, May 14, 15, and 16, 1889.

TUESDAY, FIRST DAY, MORNING SESSION.

The association was called to order by the President, Dr. David W. Cheever, of Boston, at 11 a.m. The first paper was the

PRESIDENT'S ADDRESS.[1]

The death of Dr. S. W. Gross, Philadelphia, was reported, and Drs. D. W. Yandell, J. Ewing Mears, and P. S. Conner were appointed a committee to prepare appropriate resolutions.

The committee on nomination was announced as consisting of Drs. D. Hayes Agnew, William T. Briggs, Hunter McGuire, John S. Billings, and J. R. Weist.

On motion of Dr. L. McLane Tiffany, the secretary was requested to wire to Dr. T. G. Richardson, of New Orleans, the senior vice-president, who was prevented by illness from attending the meeting, the regrets of the association at his absence.

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[1] See page 501 of this Journal.

Dr. David W. Cheever, of Boston, read a paper on

SARCOMA OF THE TONSIL: EXCISION.

The patient, a male æt. fifty-seven, single, for one year had to breathe through the mouth on account of enlargement of the left tonsil. No pain was experienced until November 1, 1888, when he "caught cold," and the tonsil swelled considerably and became sore and tender, and discharged spontaneously a few days later. At the same time he noticed some enlarged glands in the left neck. The glands gradually increased in size. The tonsil caused no more pain, but there was an increasing sense of fullness behind it, increasing dysphagia and difficulty in articulation. There was loss of appetite and weight. When he came under observation, January, 14, 1889, the left tonsil was found to project nearly to the uvula and was as large as a pullet's egg. There were two glands in the left neck, each as large as a horse-chestnut.

The operation was performed January 17, 1889, ether being given, and the patient being in the sitting posture. A gland in front and one behind the sterno-cleido-mastoid muscle were removed. The first incision was semilunar, concave upwards, marking the boundaries of the digastric triangle. A second incision over the lower jaw, at right angles to the middle of the first incision, was then made. The mylo-hyoid muscle was now divided, and the other tissues pushed to one side. The lower jaw was then sawed in two in front of masseter muscle. The tumor was pressed out by finger in the mouth, and was found to be covered with a delicate capsule. On puncture a soft material exuded. The tumor and capsule were removed without great difficulty. There was no hæmorrhage, and the facial artery and external jugular veins the only vessels ligatured. The wound in pharynx was not sewed; the jaw was wired; the external wound in the skin was partially approximated and washed with 2 per cent. boracic acid solution and dressed with boracic gauze. The wound was dressed daily. Healing took place rapidly with no unfavorable symptoms. On the thirtieth day the wire was removed and the jaw found to be firmly united. Microscopical examination showed the growth to be round-cell sarcoma.

April 27, a second operation was performed for a tumor on the same side of the neck. The throat, however, remains healthy. A large glandular mass was removed from anterior carotid triangle. This also proved to be a round-cell sarcoma.

DISCUSSION.

Dr. D. Hayes Agnew, Philadelphia: There are several points of interest in connection with sarcoma of the tonsil. I think that, including the case of Dr. Cheever's, there are only ten or eleven on record. A second point is the fact of constant recurrence. I believe that there is only one case on record where return has not taken place. In that case the thermo-cautery was employed. Various operations have been employed, — enucleation, the écraseur, the galvano-cautery, the thermo-cautery, and the external method first used by Dr. Cheever. The operation, when undertaken, should be done simply with the view of palliation. The operation from without is confessedly a difficult operation, and while in the hands of experts it probably affords the best opportunity for the removal of all diseased structure, for the general operator some other method would no doubt be better. I have been much struck with the exposure gained by simply slitting the cheek in operations on tumors far back in the throat, as far back as the soft palate. This would probably give as good a chance of success as any other plan of procedure.

Dr. A. Vanderveer, Albany: The first well-marked case of sarcoma of the tonsil that has come under my observation was in a man aged seventy-two years. The tumor had been discovered four months before I saw him. There was a full, round tumor of the tonsil, interfering seriously with deglutition and somewhat with breathing. The patient selected enucleation in preference to the operation from the outside. My intention was to remove all that I could with the tonsilotome, cutting from behind forward, then enucleate with a blunt instrument and use the thermo-cautery. After cutting through the capsule the tonsilotome slipped behind the tonsil and it was completely enucleated. I did not apply the thermo-cautery. The patient had no return of the disease for eight months. The growth then reappeared and rapidly increased in size. Two months later the patient was taken with pneumonia and died in a few days.

Dr. P. S. Conner, Cincinnati: I think that the statements in reference to the infrequency of sarcoma of the tonsil are hardly correct. I know of several unreported cases, two of which came under my own observation. One was in a girl aged twenty-six years. The disease was so far advanced that I thought no operation justifiable, and she died a few days later. The second case was a man aged forty years. The tumor was as large as the fist. I operated by slitting the cheek, and was able to readily separate the tumor from the capsule with the finger. The operation was done in June. In July he was apparently in excellent condition. The disease began to recur in the latter part of August, and grew rapidly, and in October he was found dead in bed, supposed to have committed suicide.

Dr. M. H. Richardson, Boston: Some time ago I removed a sarcoma of the tonsil by external incision. The enucleation was accomplished with ease and without opening the pharynx. A year after the operation there had been no return of the disease. This was two years ago, and as far as I know the patient is still living.

Dr. Cheever, Boston: The operation through the cheek is probably easier and more desirable in some cases, but the operation from the outside leaves less paralysis and less scar. The great dread of these operations opening the upper part of the alimentary canal, was formerly the danger of fistula. This has now been proven to be without foundation. I am inclined to think that the use of sutures in the pharynx or œsophagus would be more dangerous than their omission. The object of these operations is to permit the patients to die easier. It is more comfortable to die with an external tumor than with one pressing upon the larynx or throat, causing starvation or choking. Adjourned.

Afternoon Session.

Claudius H. Mastin, M.D., of Mobile, read a paper entitled

HERNIA: A COMPARISON OF THE VARIOUS METHODS ADOPTED FOR ITS RADICAL CURE; INVITING DISCUSSION OF THEIR RESPECTIVE MERITS.

Reference was first made to the great frequency of this condition. The census reports of 1880 show that of the total number of deaths, one in every six hundred was due to hernia, and out of twelve hundred and thirty-six deaths from hernia, one hundred and forty-one occurred in children under one year of age. A historical review of the various operations proposed for the radical cure of hernia, from the earliest times down to the present, was then given.

The paper concluded with the following remarks: —

The ligature of the sac at its neck, with suture of the pillars, of canal, and ring may be considered an established surgical procedure; still, being a comparatively new operation, a discussion of its merits will be of practical value in leading to further improvements and, with them, permanent success of the operation. With the present lights before us, the most important point in the operation appears to be the closing of the neck of the sac as high up as possible, so as to effectually seal up the opening into the abdominal cavity. To do this completely it is necessary that the sac should be carefully separated from the adjacent tissues, and this is not always an easy matter, since oftentimes the true sac is obliterated and a new sac formed in the fibrous tissue with the vascular and nervous distribution blended in such a manner as to render the dissection most difficult if not impossible. In such a case Macewen's operation could not be performed, and it would be impossible to twist the sac as recommended by Mr. Ball. This objection does not obtain in crural and umbilical herniæ; still, since inguinal is the most frequent of the herniæ, it is of importance in them. In the congenital cases, it is much easier to separate the sac and hence more possible to do a complete operation; but since in young children the truss, properly applied and long continued, until the abdominal parietes have been so developed as to increase the obliquity of the canal, will in most instances produce a permanent cure, all operative procedures in children should be considered unwarrantable. In those cases, however, where an imprisoned testicle complicates the condition, the operation is unquestionably proper, and the removal of the testicle justifiable, and for the simple reason that the presence of the gland in the canal predisposes to the descent of the hernia.

Since the main point in the success of the operation appears to have been the proper disposal of the sac, it is not astonishing that operators who have given it their attention should have adopted diverse methods, each one of which has the same end in view. Whilst Ball twists it, Macewen tucks it up; Hardee insists upon the importance of inclosing the transversalis fascia with the sac in the ligature; J. D. Bryant splits the pillars on either side and weaves in the sac; Annandale opens the canal, ties the sac, cuts it away, and stitches the opening; on the other hand, Stokes opens the sac, and then, stitching the neck, the canal, and the pillars together, he leaves the sac in position; Banks opens the sac, ligates the neck, cuts away the fundus and sutures the pillars; Alexander, of Liverpool, opens the canal, ligatures the sac flush with the peritoneum internally, then divides the neck below the ligature, leaving the sac in the canal without suturing the ring; MacCormac advocates this plan, while Buchanan cuts down to the sac, slits it up longitudinally on each side of the cord, divides the front part horizontally, rolls up the upper part, with which he plugs the internal ring, and turns down the lower half to form the tunica vaginalis.

From a comparison of all the methods, it is apparent that no fixed rule of procedure is established; and although the radical operation is a marked improvement in the treatment of hernia, whether free or strangulated, we cannot consider it perfected, because the methods hitherto resorted to have not proved radical in results. The operation is ideally correct, but the question arises whether, with the uncertainty of success, the risk justifies the operation, especially so if the circumstances of the individual are such that he can content himself with the use of a properly adjusted truss.

DISCUSSION.

Dr. M. H. Richardson, Boston: My experience with the operation for the radical cure of hernia has been small. Sufficient time has not elapsed to permit us to say what the ultimate result will be. My preference has been for the invagination of the sac as proposed by Macewen. I do not advocate the operation in trivial cases of hernia. Here I believe that the application of a well-fitting truss is the more conservative and better plan.

Dr. D. Hayes Agnew, Philadelphia: We have to speak yet with a good deal of reserve as to which is the most successful operation. Sufficient time has not elapsed to enable us to speak positively upon this subject. The operation which seems to me most applicable is that in which the sac is ligated, pushed into the internal ring, stitched there, and transverse sutures passed across the canal. I think that the omentum will constitute an important element in the radical cure of hernia. I believe that in all cases of strangulated hernia we are justified in attempting the radical cure. The same is true in those cases of herniæ which cannot be controlled by a truss, leaving the patient exposed to great risk.

Dr. W. W. Dawson, Cincinnati: In cases where life is not in jeopardy we should approach the operation with a great deal of consideration. I have seen very different results from the same operation performed with equal care in cases apparently similar. Where life is in danger, duty impels us to operate, but where the question is one of æsthetics or abridged usefulness, the operation should be approached cautiously.

Dr. L. McLane Tiffany, Baltimore: My operations for radical cure in cases of strangulated hernia are more successful than formerly, and I attribute this to the fact that I operate now in a more cleanly manner. I think that no operation for strangulated hernia is complete unless an attempt at radical cure is made. When the hernia is not strangulated, the question arises as to the kind of hernia, the inconvenience that it causes, and the circumstances of the individual. I do not believe that the operation, *per se*, is likely to be followed by much trouble. The method to be employed must be determined by the peculiarities of the case.

In regard to children, I think in congenital hernia, especially where it is probable that the child will have to work for its living, that it is the duty of the surgeon to operate. Here it is not necessary to open the peritoneum. A ligature is thrown around the sac above and another lower down, and the intervening portion excised, forming a tunica vaginalis below and a peritoneal sac above.

Dr. D. W. Yandell, Louisville: I believe that in strangulated hernia the surgeon should attempt the radical cure. This has been my practice and I have used various methods. It is difficult for any one man to decide which is the best operation, but in the course of ten years we shall be able to arrive at some opinion. At present it is simply historical, and no one can say which is the best method.

Dr. J. Ford Thompson, Washington: So far as my experience has gone, I think that there is very little difference in the operations. The main point is to get rid of the sac. I think that suture of the pillars is useless. The operation that I have employed is practically that of McBurney. In strangulated hernia it seems to me that there must be danger in inverting the sac as in Macewen's operation. I have seen many cases of hernia in children, but I have never been able to adopt the view of Dr. Tiffany. As a rule, if we can keep the intestine reduced, the hernia is cured in a comparatively short time. In some cases of large hernia in children, the radical operation is probably justifiable.

Dr. W. W. Keen, Philadelphia: We doubtless all agree that in strangulated hernia no operation is complete without an attempt at radical cure. We also agree that in those cases where the hernia is not controlled by a truss and the patient is unable to labor, radical operation is advisable. The tendency at the present time is to extend the limits of the operation beyond these two classes. The presence of hernia is always attended with risks, hence the tendency at present is to operate on a larger number of cases. In children, if the retentive measures, after a thorough trial for a few years, fail to effect a cure, I should be inclined to operate.

In very large hernia I should not be inclined to use Macewen's method. The life of the sac is imperilled by separating it. In large hernia a certain amount of preparatory treatment is desirable to accustom the abdominal cavity to the presence of the intestine and thus prevent undue pressure upon the diaphragm and strain upon the sutures.

In the more ordinary cases, I think that the operation of McBurney is the best. I should place the operations in the following order: McBurney's, Macewen's, and Ball's.

Dr. C. H. Mastin, Mobile: I have little to add. The object of my paper was to elicit discussion as to the best method of operating. I have performed thirty-four operations for hernia, with three deaths. Two of these may be excluded, as the patients were *in extremis* at the time of the operation. This leaves thirty-two cases, with one death. Of this number there have been eight radical cures. One of these cases I have watched for seventeen years. The method employed was, after the sac was opened to pass a deep pin through the pillars, with an ordinary twisted suture over it, close the incision, and place the leg on a double inclined plane. Thirty-one cases have recovered with primary union. I believe that the cure is produced by the dense cicatricial tissue found in the canal.

Dr. J. R. Weist, Richmond, Md.: I have operated on strangulated hernia forty-one times. In thirty cases I have attempted to make a radical cure, using a variety of methods. In only four cases have I succeeded in keeping the hernia in. A number have remained well for six months to two years, and then the hernia has reappeared as bad as ever.

(To be continued.)

NEW YORK ACADEMY OF MEDICINE.

Stated meeting, May 2, 1889, the President, Alfred L. Loomis, M.D., in the chair.

DISCUSSION OF PHTHISIS PULMONALIS.

Dr. W. B. James read a paper on

THE RELATION OF THE TUBERCLE BACILLUS TO ITS ETIOLOGY.

In the seven years that had elapsed since the discovery of the tubercle bacillus in 1882, he said that an enormous number of original investigations had been carried on, and their result had been to completely confirm and establish the correctness of Koch's conclusions. It was also fairly well established now that the tuberculous process is capable of setting up inflammatory action in adjacent tissues which may be either acute or chronic in character. By pulmonary phthisis he understood a tuberculous inflammation of the lungs, and he therefore considered any secondary and contributing cause or causes as unnecessary.

Clinical experience taught that different individuals respond very differently to tuberculous infection, and also that the same individual responds differently to it at different times. In this connection he referred to Dr. Trudeau's experiments with animals inoculated with tuberculous virus and exposed to different kinds of environments; the results being very different in those closely confined in quarters with bad hygienic conditions from the results in those allowed free exercise in the open air. In the dead-house of the New York Hospital he had been struck with the large number of individuals whose lungs presented lesions which showed that they had at one time been the subjects of phthisis and had recovered from it.

Whether or not any previous lesion of the lungs was necessary for the development of tuberculosis he did not think was established. The sum of clinical experience seemed to indicate that tuberculosis develops more readily where there has been such a previous lesion, but that in many instances there is no previous lesion whatever. The conditions on which tuberculous infection seemed to depend in any given case were, *first*, the number of germs, and, *second*, the condition of the germs. Other things being equal, therefore, the greater the number of bacilli and the greater the activity of the virus, the stronger would be the chance of infection.

Another point of interest was in regard to the channel of infection. Our knowledge of the lymphatic system of the lungs was unfortunately very limited; and the question whether the infection was contracted by inhalation or in other ways he felt compelled to leave untouched. To sum up, he said, the only factor necessary for the production of pulmonary phthisis is the bacillus tuberculosis or its spores.

Dr. J. West Roosevelt read a paper on

THE RELATION OF THE TUBERCLE BACILLUS TO THE EARLY DIAGNOSIS AND PROGNOSIS OF PHTHISIS.

He said that not infrequently physicians were consulted by young men actively engaged in business who were beginning to lose flesh and had a cough, with perhaps slight expectoration, and who desired to know whether they had phthisis or not. Now, in such a case, should the physician answer yes, and recommend a change of residence, it meant that the patient's business prospects were ruined. He might have to commence life again. If the opinion was correct, all was well, but if wrong, a grave injury would have been done. On the other hand, if the physician should say that he did not have phthisis his life might be forfeited. If the bacillus were found in the sputum, all doubt would, of course, be removed.

But, suppose we do not find the bacillus, continued Dr. Roosevelt, can we say that phthisis does not exist? Decidedly not. It must be remembered that in phthisis we often have no tubercle which is so situated as to be connected with the air-passages; and it is quite possible for extensive tuberculous deposit to occur, and yet no bacilli be discharged. It is also possible for so much bronchial discharge to exist that the bacillus may be overlooked in the large quantity of expectoration. No one would therefore deny the existence of phthisis because the bacillus could not be found. Even though very many careful examinations be made and no bacilli be discovered, this evidence against the diagnosis of phthisis is slight; though, of course, the presence of bacilli would render such a diagnosis positive.

As seen in New York, there were a number of cases of phthisis in which the lesion until near the end seemed to consist of the deposit of tubercles beginning in the upper lobes and gradually spreading and involving the lower. There were also some pleurisy and some bronchitis. Now, in these cases there was not much tendency for the tubercles to break down early in the disease. There being practically no pulmonary consolidation in these cases (nothing at first but a few scattered tubercular nodules) the physical signs were of little value. It was possible for this form of phthisis to progress very far, and yet give no distinctive signs. Unfortunately, for the reason that scattered tubercles constituted the lesion and that these did not break down early and empty their bacilli into the bronchial secretion, the detection of the latter was frequently impossible at the very time that this would be of most value.

In another form of phthisis we had, with the tubercle deposit, pneumonia, coagulation necrosis, marked bronchitis, etc. Practically, this form gave signs, owing to the consolidation, earlier than the other. It also broke down over a greater extent of the lungs, and the bacilli were frequently and abundantly discharged. It might be said that those cases presenting the greatest difficulties for diagnosis without regard to the bacillus, presented also the greatest difficulties in finding the bacillus. In many of them it was not to be found, and the diagnosis had to be made from the physical signs.

As to the prognostic value of the bacillus, it could hardly be said to have any. Patients going rapidly down hill would be found whose expectoration contained but few bacilli: and, on the other hand, larger numbers of these might be found in the sputa of those whose disease was advancing but slowly, if at all. It was only a question of the freedom with which cheesy matter was emptied into the bronchi. Strangely enough, there was a decided tendency for many to regard the bacilli discharged as a measure of the disease; as if they, and not the ones growing in the patient, did the harm. Hence we read of "diminution in the number of the bacilli" under varied treatments as a symptom of improvement. It might or might not be such a symptom. At best, it was a most delusive one.

Watching for it, and laying stress on it, had done one great harm. It had given a longer life to the various so-called antiseptic methods of treatment. Of course the word "antiseptic" was here used as meaning destructive to bacillary life. "A strong solution of carbolic acid kills bacilli after some hours: therefore, give very small doses of that agent" (doses so small as to be, when diluted with a bulk of fluid equal to that of the blood, entirely harmless to the microbes), "and thus cure the phthisis." This was the real basis of reasoning for all such treatment; and how often had we heard in regard to each of the new antiseptic methods that "the cough, expectoration, and night-sweats improved, and the bacilli were reduced in numbers." To this should usually be added, "the patients died." Now, the fact that the bacilli vary greatly in numbers from time to time had added somewhat to the apparent value of many different kinds of treatment. The time has come, he thought, for a protest to be made against the administration of poisons to unfortunate people in the so-called antiseptic treatment of phthisis. To do this, and to call the methods by which the particular poisons had so far been chosen, "scientific," was possibly to injure the patient, but certainly to exhibit a peculiar idea of what constitutes science.

He would not for a moment be understood as objecting to the trial of any non-injurious treatment for phthisis, but he certainly wished to protest against the giving of antiseptics as now, and calling it rational. While the complex body cells were easier to kill than the more simply constructed bacilli, it did not seem very encouraging to try to kill the latter while leaving the former untouched. It was probable that nourishing the phagocytes was better than trying to kill the bacilli. It was possible that empirically something might be found capable of acting as a specific bacillary poison; but no evidence had yet been obtained that such a substance exists, nor was it likely to be obtained by the present crude methods. The propositions set forth in the paper, Dr. Roosevelt said in conclusion, were these: —

(1) The bacillus tuberculosis is of great positive value, but no negative value, in diagnosis.

(2) In prognosis the bacillus is of but little value.

(3) In both diagnosis and prognosis quite as much depends upon the careful study of the case as a whole as if there were no bacilli concerned in producing the disease, except that a diagnosis is sometimes rendered positive, which would otherwise be doubtful, by finding the bacillus.

He wished it understood that he said nothing about any phthisis not of bacillary origin. What he referred to was the so-called "catarrhal phthisis" and "tubercular phthisis," both diseases caused by the bacillus of Koch.

Dr. James Tyson, of Philadelphia, said that the conditions on which are based the belief that the bacillus is the cause of tuberculosis were exceedingly difficult to establish. So difficult, indeed, had they seemed to him that for a long time he could not regard them as possible. He believed now, however, that they had been placed on a firm basis. The conditions generally regarded as essential to establish that any vegetable organism is the cause of a given infectious disease were as follows: —

(1) The organism must be found in the blood or tissues of the infected animal, or in both.

(2) It must be obtained from the blood or tissues in a state of absolute purity.

(3) The organism, thus pure, must be capable of producing the same disease when introduced into the blood or tissues of an animal susceptible of it.

(4) The same organism must be found in the blood or tissues of the second animal in which the disease has been produced.

In the case of the tubercle bacillus the second of these conditions, the steps to the securing of which were by far the most difficult to carry out, had been established by the culture processes now brought to a state of such high perfection.

Having referred to the contest over the question whether the bacillus is the sole cause of tuberculosis, he stated that the last obstacle to this doctrine had now been removed. Cohnheim was the first to retract, and he had been followed by Wilson Fox. Finally, Sternberg's experiments, consisting of the injection of ultramarine blue and powdered glass into the peritoneal cavities of rabbits, seemed to have settled the question; and even Formad, who had been one of the last to yield, admitted that the products resulting from the injection of such substances were non-specific, inflammatory nodules. Accordingly attention could now be directed most profitably to the corollaries which grew out of the causal relation of the bacillus to tuberculosis; and the first evident deduction was that tuberculosis must be contagious. The contagiousness was so comparatively slight, however, that some explanation seemed necessary, and this explanation he thought would be found in the work of dissemination of the contagion, as shown by some recent observations by Comet. This observer inoculated animals with sponge scrapings from the walls of rooms occupied by phthisical patients. Large numbers of animals thus inoculated were found to be tuberculous, while the control experiments, with sponge scrapings from houses not inhabited by tuberculous patients, gave negative results. But in no case was the dust of the walls infectious where sputum-cups were exclusively used to receive the expectorated matter, although such sputum abounded in bacilli. We thus learned that it is through the dried sputum, whose bacilli-containing particles are disseminated in the air, that the disease is spread; as was, indeed, originally suggested by Koch. Tuberculosis might be characterized as feebly or slightly contagious in the same way and for the same reason that typhoid fever was slightly contagious, because ordinarily the excreta are promptly removed, even if not disinfected, and it is only when they dry upon the linen, and thence become scattered through the air, that they enter the lungs or alimentary canal.

The same conditions also which intensified the contagion of diseases acknowledged to be contagious increased the operation of that of phthisis. Thus, for instance, the disease was always most frequent where people were crowded together, as in prisons, etc. Married couples infected each other, and the members of healthy families might become infected one after another after removal to a house previously occupied by a tuberculous patient. In the same direction pointed some most valuable and laborious observations by Dr. Lawrence L. Flick, of Philadelphia, illustrated by a series of maps locating every death from tuberculosis in a single ward for twenty-five years, in which he showed that of the infected houses scarcely 10 per cent. are isolated; that is, have not an infected house next to them. About 23 per cent. of the infected houses, moreover, had had more than one case. Finally, through diagrams showing the distribution of small-pox, typhoid fever, diphtheria, and scarlet fever, he showed that the groupings of phthisis are identical with those of these contagious diseases.

That tuberculosis is also communicated through the alimentary canal was likewise well attested; the chief medium being food, and especially milk. Gerlach first fed young animals on milk from tuberculous cows with results sufficiently successful to justify the conclusion that by such milk tuberculosis of the alimentary canal or mesenteric glands could be produced. Simms Woodward, in conjunction with Prof. McFadyeon, during the examination of over six hundred cows in the Edinburgh dairies, found thirty-seven in which there was mammitis, but in the milk of only six, or 16 per cent. of cases, could be demonstrated tubercle bacilli, and these in small numbers. While the general expression of the Paris Congress for the Study of Tuberculosis held in 1888 was against the use of tubercular flesh, and especially tubercular milk, no absolute demonstration of the harmful effects of meat from tuberculous cattle seemed to have been presented there. Cagny, however, related a case in which tuberculous disease was caused in chickens by the swallowing of the sputa of a patient suffering from phthisis. In like manner Mosler had reported the case of a patient who swallowed his own sputum in large quantities. Ten days after his first attack of cough diarrhœa and colic set in, and ten days later he died. The autopsy revealed tuberculosis of the lungs and intestine, but nowhere else in the body, and hence Mosler was inclined to refer tuberculosis of the intestine to swallowed sputum rather than to general infection, although he failed to produce intestinal tuberculosis in animals by feeding them with tuberculous sputum and lung tubercle.

Having spoken of the possible transmission of tuberculosis by flies, as shown by the observations of Spellman, Haushalter, and E. H. Hoffman, Dr. Tyson said that the relation of the bacillus to heredity had as yet failed of a satisfactory explanation, and more particularly as regards congenital tuberculosis. The most probable explanation of the latter was that it is passed from the blood of the mother to that of the fœtus through the placenta. Such transfer, however, presupposed, of course, the presence of bacilli in the blood of the mother; and while Weichselbaum had succeeded in demonstrating tubercle bacilli in the blood, it had been very infrequent. It had to be admitted, too, that although Landouzy and Martin have obtained positive results after the inoculation of animals with the placentæ of phthisical patients, no tubercle bacilli are found in the products; which might have been therefore pseudo-tuberculosis.

Another important corollary to the proposition that the tubercle bacillus is the essential cause of tuberculosis related to the tenacity of the life of the bacillus. Cadere and Malles found that tubercular matter, dried and pulverized, is capable of transmitting tuberculosis a hundred and two days after such preparation; but they concluded that virulence does not persist after from thirty to seventy days, unless special care is taken to preserve it. Schule and Fisher claimed that tuberculous matter may remain active at least six months, while Pietro asserted that well-dried sputa may retain infectious properties for nine or ten months at a mean temperature of 77° F.

The evident practical deductions to be drawn from these facts, he said in conclusion, he would leave to those who spoke on the important matter of treatment.

Dr. H. M. Biggs said that we had now in our possession absolute proof of the causal relation of the bacillus of Koch to tuberculosis. No fact in medicine, with the possible exception of the essential cause of anthrax, was better established than this. The evidence answered very nearly, indeed, to the exactness of mathematical demonstration. It seemed to him that the profession could not too soon do away with the notion, held by many even yet, that heredity and other causes were prime factors in the etiology of phthisis. There was one, and only one, cause, and that was the tubercle bacillus. That these other factors had an influence no one could deny, but this influence had simply the effect of reducing the normal power of resistance in the tissues. In order that infection should result it was necessary that a dose of bacilli should be taken into the system and that this should have the effect of overcoming the tissue-resistance. Depressed vitality from any cause and antecedent pathological processes existing in the lungs would naturally facilitate this action of the bacilli.

He believed that the tubercle bacilli were capable of causing the disease without the assistance of any other factor, provided that a sufficiently large number of them were admitted to the system. Heredity, then, meant, not the transmission of a predisposition to tuberculosis, but that tuberculous parents transmitted to their offspring organs which were easily acted on by such agents as the tubecler bacillus; in other words, organs which had a less resisting power than those of robust individuals. In such organs there was simply an absence of strength, and not the positive possession of unfavorable qualities. This, it seemed to him, was a most important point.

If these points were accepted, it followed, first, that phthisis pulmonalis is distinctly contagious, and, secondly, that it is a distinctly preventable disease. The great question that lay before us, therefore, was the prevention of tuberculosis; and he thought that in trying to solve this problem we could not too strongly insist upon the origin of the disease from a single cause. In the work of prevention all discharges from tuberculous patients should be disinfected, and all tuberculous animals should be destroyed; and we could only hope to carry out such a work by educating the profession and the public in this belief that the disease is due to a single cause. Whenever tuberculosis occurred in animal or man, the fact ought to be absolutely recognized that it was invariably the result of tuberculous disease existing in some antecedent case.

Dr. H. P. Loomis said that in the subjects of phthisis there might be what may be called a pre-bacillary condition of the system. It was a condition of depressed vitality, about which very little was known, and he thought it offered an excellent field for useful investigation by competent observers. As contributing to this condition we might have heredity, alcoholism, or other depressing influences; but in addition, in order that tuberculosis should occur, we must have the spark to kindle the flame, and that spark was the specific bacillus. In confirmation of Dr. James's observations at the dead-house of the New York Hospital, he said he could state that he had found that in no less than 60 per cent. of all patients who died at Bellevue Hospital there were old tubercular changes recognizable in the lungs.

EXHIBITION OF SPECIMENS.

Dr. Trudeau, of Saranac Lake in the Adirondack Mountains, exhibited some interesting specimens, among which was a copious growth of tubercle bacilli on a piece of potato; illustrating the fact that the bacillus could be cultivated on vegetable, independent of any animal, structures. He also exhibited the lungs of a number of rabbits which were the seat of well-marked tuberculosis resulting from inoculation. He stated that he had found it possible to produce in animals any kind of phthisis that was known in the human subject by properly regulating, first, the quantity of virus employed, second, the site of the injection, and, third, the environment of the animal. Acute miliary tuberculosis, for instance, could be caused by inoculating the vein of the ear. The animal would die of the infectious disease in about twenty-five days, and an examination would show the presence of tubercles everywhere in the body. By injecting the virus into the apex of the lung a condition would be produced in which fibrous tissue would be found to predominate over the tubercular.

Dr. W. H. Thomson read a paper on

THE INFLUENCE OF THE MICROBE THEORY ON THE TREATMENT OF PHTHISIS.

Having referred to the various germicidal remedies that had been tried before and since the discovery of Koch, he said that personally he had never expected any specific treatment to be of permanent value in phthisis on account of the organic character of the tubercle bacillus. He had never seen a case of small-pox, measles, or other specific disease that was shortened a single day by the administration of an antiseptic or any other agent whatever. We did not know of anything that the farmer could employ which would kill the weeds, but not the potatoes, in his field; and in like manner we could not expect to find any agent that would kill the tubercle bacillus in the body, and yet not do injury.

But, at the same time, Koch's great discovery was not barren of practical results. There was an apparent interdependence of bacterial growths upon each other, and Dr. Döllinger had shown that no less than thirteen different forms of bacteria, which acted rather successively than simultaneously, were concerned in the putrefaction of meat. Dr. Thomson spoke of the wide prevalence of the streptococcus pyogenes, and said that it only needed an entrance into the body to infect the whole system. It seemed to him that this organism might perhaps pave the way, as it were, for the tubercle bacillus, which without its aid possibly would not find a suitable soil for its development. If this were so, it was of the greatest importance, first, to check all suppurative processes in the lungs; second, to remove the pus; and, third, to prevent putrefaction of pus. One of the best agents against suppuration was creosote, and it might be employed both internally and by inhalation. He related two cases of phthisis, with well-marked cavities, in which permanent recovery followed the use of creosote, and said that while he had, of course, met with many cases in which this remedy did no good, he believed that on the whole it was of more efficacy than any other. One important indication was to cause as far as possible a limitation of the tuberculous process by promoting the power of resistance in the tissues.

Dr. L. Waldstein related the case of a young German whose general condition was poor and who suffered from cough and profuse expectoration. He had been treated for bronchitis, and the examination of the sputum was attended with negative results. The examination of the chest also failed to develop any positive evidence of phthisis. At length, however, after several examinations of the sputum, some tubercle bacilli were detected. The patient was then sent to Davos, and the climatic treatment had proved in a measure successful. He had met with other cases where not a single bacillus could ever be found in the sputum, and yet where all the other symptoms presented positive evidence of grave pulmonary trouble. Relative to the subject of prognosis, he mentioned the case of a young man of twenty-one, who, while apparently perfectly well, was seized with a copious hæmorrhage from the lungs. It so happened that only three or four weeks before this occurrence Dr. Waldstein had made a careful physical examination of the patient, who desired to take out a life insurance policy; and the results of this were entirely negative as regards the presence of any disease. Other hæmorrhages quickly followed the first, and after these the sputum presented almost a pure culture of the tubercle bacillus. The patient was then sent away, and afterwards made an apparently complete recovery. Cough and expectoration ceased, and repeated examinations of the sputa failed to detect any bacilli. Yet no competent physician would pronounce this patient cured, for it could not be known what might occur in the future. He agreed, therefore, with Dr. Roosevelt as to the valuelessness of the bacillus as regards prognosis.

Dr. B. F. Westbrook, of Brooklyn, thought that as a rule a skilful physical examiner could make the diagnosis of phthisis in any case where the microscopist could do so by means of the sputa. In cases of pleurisy at the apex of the lungs, however, where it was not known whether tuberculosis originally existed or not, he believed the examination of the sputum would often prove of diagnostic value. A few cases were also met with in which patients with weak chests have some crackling at the apex, which may be due either to tuberculous trouble or to emphysema; and here too he thought the presence or absence of the bacillus might be of considerable diagnostic value. As to the matter of prognosis, if in any case repeated examinations failed to reveal the presence of bacilli in the sputum, he would conclude that there was no tuberculosis present, and that the trouble was probably due to chronic interstitial pneumonia. The mere numerical quantity of bacilli found in any case was, in his opinion, of no value.

As regards the matter of treatment, he believed that the only influence which the discovery of Koch had thus far had upon this was pernicious, since it had resulted in the introduction of all sorts of mischievous methods. There could be no specific treatment unless we could discover a specific antidote. Antiseptic agents, however, might be of great service in the treatment of fetid bronchitis, in cleansing and disinfecting cavities and the bronchial tubes, and in fortifying the constitution of the patient.

Dr. F. P. Kinnicutt said that some of the antiseptic remedies had an undoubted value in removing foci of irritation and rendering the tissues in a measure aseptic. They arrested fermentation and had a stimulating effect upon the vital processes; and it was no doubt to such effects that the benefit noticed from the use of creosote was due.

NEW YORA.

— On May 15th thirty-one nurses were graduated from the Training School of the Charity, Maternity, and Infants' Hospitals on Blackwell's Island, and twelve from the Training School of Mount Sinai Hospital.

— Dr. Clement Cleaveland, who for a number of years has been one of the assistant surgeons of the Woman's Hospital, has been appointed full surgeon.

Recent Literature.

Electro-therapeutics. By Wilhelm Erb, M.D. Translated by A. De Watteville, M.D., with the assistance of J. Cagney, M.D., and A. J. S. Ker, M.D. With 39 illustrations. 8vo. pp. xxii, 732. Wm. Wood & Co., New York. 1887.

The present volume forms the sixth in Wood's translation of Von Ziemssen's Handbook of General Therapeutics, and is translated from the second edition of the German work. A translation of the first edition by Putzel was published in Wood's Library for 1883, and was reviewed in these columns.[1] Among the more important additions to the new edition are a section on the newly discovered myotonic reaction in Thomson's disease, and the practical application of the theories as to the density of the current in the use of electrodes of a definite area, especially the normal electrode, with a surface of ten square centimetres for testing reactions. More stress, too, is laid upon the necessity of using an accurate galvanometer. Too elaborate and exhaustive to be used as a manual, it nevertheless holds the highest place as a work of reference, and its value is enhanced by the report of a hundred and seventy-one cases of nervous disease in which electricity was used. At present the value of electricity as a therapeutic agent is at times called in question, but the evidence in its favor as given by Erb is hard to dispute; many of the methods given in a work of this sort are in most cases useless, and many forms of disease where electricity is used are benefited little if at all by it, but the evidence has all been carefully weighed, and if, to some, the author should seem like an enthusiast in the cause of electricity, it is an enthusiasm based on wide experience.

Although De Watteville has written the best manual of electro-therapeutics that we have in English, he certainly has not the skill in the use of the English language which is essential for a translator. His English is often inelegant, the construction of his sentences more awkward than that of the original, and the choice of words is sometimes misleading: thus, on page 20, "to secure for static electricity a certain position" is not a good rendering of "gesicherten Platz." In more than one place, too, tetany is called tetanus. Finally, we must criticise the change of the formulæ: KaSZ is certainly as clear as and far less confusing than KCC. The mechanical execution of the book is very good.

— Dr. William Keen has been elected to fill the chair of principles of surgery and clinical surgery at the Jefferson College, Philadelphia, vice Dr. Samuel W. Gross, dead.

The *British Medical Journal* quotes from official statistics which show that there are only 118 homœopathists in Austria out of the whole number of medical men, 7,183, and that only 44 of those profess to practise homœopathy exclusively. There are none at all in the Italian districts, and but 19 in Vienna. The number, also, is said to be decreasing.

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23 School Street, Boston, Mass.

AUTOPSY OR VIVISECTION?

Washington Irving Bishop, well known to those interested in psychological research as a professed "mind reader," came to his death recently in New York at a special séance which he was giving at a private club to illustrate his peculiar powers. Without ascribing to Mr. Bishop any powers more miraculous than those of muscle-reading, we must admit that the attention required in the performances of his feats was at times by no means inconsiderable. Add to this that he was a man of somewhat peculiar mental and physical make-up. He belonged to a cataleptic family. His mother states that her son has been in trances since he was six and a half years old. The first time he went off in a trance, she says, was while lying in her arms, and she thought he was dead. She called in a physician, who at first said the child was dead, but on a closer examination stated that he was in a trance. Ten years ago, according to Madame Bishop, when her son was in Scotland, he lay to all appearance dead for three whole weeks. The affliction is hereditary in the family. An aunt of the deceased has had several trances, on one occasion lying in an apparently lifeless condition for one week. The mother herself has been troubled in the same way, lying in a state of insensibility for various lengths of time from a few hours up to three days.

The family physician of Mr. Bishop is reported to have said that three days before Bishop's death the latter called upon him to have an operation performed. Several times during the operation Bishop went off into a cataleptic fit. While in this condition the doctor noticed that Bishop had every appearance of being dead, such as a livid complexion an apparent, stoppage of the heart, the pulse beats, and the respiration.

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[1] See this Journal, vol. cix. 425.

With so marked a family and personal history of catalepsy it was natural and proper that the apparent sudden death of Mr. Bishop should have been most carefully scrutinized and that all the tests of actual death should have been applied, before such death was taken irretrievably for granted.

It is therefore most unfortunate that an autopsy was performed within five hours of the time of the supposed death. It is of course to be admitted that the attending physicians were perfectly satisfied in their own mind of the fact of death before undertaking the autopsy and were probably right. But the possible resemblance of cadaveric to cataleptic rigidity, and the admitted difficulty in the diagnosis of death from any sign short of actual decomposition, have caused most agonizing suspicions to the family, which they have not been slow to proclaim, have called forth the protests of the public generally, and have placed the physicians in a false position. Even if, as is probably the case, the subject was really dead, the subjection of any portion of the community to such a panic is unjustifiable.

Moreover, independently of the unseemly haste of the autopsy, its performance at all without the consent of the nearest friends of the deceased is not to be defended. Section 309 of the Penal Code of New York provides as follows: — " A person who makes or causes or procures to be made any dissection of the body of a human being, except by authority of law or in pursuance of a permission given by the deceased, is guilty of a misdemeanor."

Under this law the aggrieved friends are taking up the matter, and they may make it unpleasant for the doctors unless these can prove permission given by the deceased. A preliminary hearing was held by the coroner on Saturday, and an inquest was to be held on Tuesday, the three physicians concerned in the autopsy having been meantime held in $2500 bail each.

Such cases as this have a deplorable effect on the interests of the profession, inasmuch as they increase the prejudice, already but too rife in the community, against post-mortem examinations. The manifest rights of the community in such matters must be respected if we are to expect the public to further medical science (and their own possible future interest) by allowing autopsies to be performed at all.

It may be hoped that the result of this case will be to direct professional attention anew to the important subject of the diagnosis of actual death. It would be well if physicians generally (as is certainly not the case now) made it a point to see the bodies of their patients before signing the certificates. They would thus become more familiar with the tests which are now recognized by authorities on legal medicine, would recognize their imperfections, and would perhaps be more likely to discover new tests, — some new and certain test, — a great desideratum. If such study of the cadaver should tend to postpone the beginning of the undertaker's "embalming" operations, it might not be amiss. At present, to wait for evident signs of decomposition before making an autopsy in a case of extraordinary suspiciousness is a reasonable safeguard.

ETIOLOGICAL CONDITIONS OF SUMMER DIARRHŒA.

Medical Inspector Ballard has addressed to the " Local Government Board " a report on the diarrhœas of summer, in which some new etiological data are presented.

The inspector recognizes the influence of a high temperature and dietetic errors in the production of these diarrhœas, but he declares that the temperature of the soil is a more important factor, for the summer mortality by diarrhœa does not begin to rise till the average temperature of the soil, taken at a depth of four feet, remains at 56° F., whatever may be the thermic conditions of the air above ground, or even of the earth at a depth of one foot. Thus it is that the diarrhœas may continue to prevail when the weather is cool, because it takes longer for the temperature of the ground at the depth of four feet to fall than at the surface. Abundant or prolonged rains diminish the number of cases of diarrhœa by preventing or combating the heating of the subsoil. Houses built on rock present, according to this medical authority, an insignificant mortality from diarrhœa, while houses built on a permeable soil are especially likely to be visited by diarrhœa in hot weather, and sandy ground is worse than clay.

A mean humidity of the soil is necessary for the appearance of sporadic diarrhœa; excessive dryness or dampness, on the other hand, are unfavorable for the development of this affection.

ANEMONE PULSATILLA IN THE TREATMENT OF UTERINE AFFECTIONS.

Charles Bovet, of Pogues, has made the above the subject of a paper before the *Société de Médecine pratique.*

After alluding to the benefits of pulsatilla in blennorrhagic orchitis, relieving the pain and dispersing the swelling in a very few days, he affirmed the same remedy to be of singular efficacy in certain painful uterine affections. Thus, the pains which accompany difficult menstruation are often speedily mitigated by the pulsatilla; also those which result from metritis, ovaritis, salpingitis.

Bovet thinks that pulsatilla has an action on the nervous system similar to that of aconitina in certain neuralgias; this action becomes elective in manifesting itself particularly on the nervous filaments of the uterine apparatus.

The tincture made from the dried plant is, he says, a poor preparation; nothing is trustworthy but the alcoholic tincture, made by macerating the fresh leaves in strong alcohol. The plant should be gathered for this purpose about the middle of June.

The directions for the administration of this medicament are as follows: Five days before the expected menstrual period, give ten drops of the tincture four times a day in a tablespoonful of wine; suppress the medicine during the three or four days of the menstrual flux, then resume it in the same doses during the five days which follow. In cases of ovarialgia, caused by a chronic phlegmasia of the uterus or its annexes, the medicine is continued in the same doses until the pain disappears.

MEDICAL NOTES.

— The Missouri Pacific Railway Hospital at Independence will soon be removed to Kansas City. Temporary quarters have been secured at the corner of Sixteenth and Penn streets; but it is the intention of the road, as soon as a suitable site can be secured, to erect a $40,000 building for the hospital.

—The new plans for buildings at the Baldwinville, Mass., Cottage Hospital have been approved and accepted by the governor and council; the money appropriated by the last legislature can now be drawn, and the new buildings will very soon be commenced. Fifty applicants are already waiting for admission.

— According to a Washington correspondent to the Cincinnati *Commercial Gazette*, an interesting, not to say valuable, discovery has been made by Captain Weedin, in charge of the animals at the Zoo. The building is infested by rats, and how to get rid of them has long been a perplexing question. Traps were used, but nothing would tempt the rodents to enter. In a storeroom drawer was placed a quantity of sunflower seeds, used as food for some of the birds. Into this drawer the rats gnawed their way, a fact which led the Captain to experiment with them for bait in the traps. The result was that the rats can't be kept out. A trap which appears crowded with six or eight rats is found some mornings to hold fifteen. They are turned into the cages containing weasels and minks. The latter will kill a rat absolutely almost before one can see it, so rapid are its movements. The weasels are a little slower, but none of the rats escape them. — *Scientific American.*

BOSTON.

— At the annual meeting of the Boston Home for Incurables the following officers were elected for the ensuing year: President, Frederick L. Ames; vice-president, Francis C. Lowell; clerk, Godfrey Morse; treasurer, J. Arthur Beebe. A board of twenty-nine trustees was also selected.

— At the annual meeting of the Norfolk District Medical Society the following officers were elected: President, Dr. Joseph Stedman, Jamaica Plain; vice-president, Dr. Joel Seaverns, Roxbury; secretary and librarian, Dr. S. Allen Potter, Roxbury; treasurer, Dr. Edward G. Morse, Roxbury; commissioner of trials, Dr. Charles C. Hayes, Hyde Park; nominating councillor, Dr. John W. Chase, Dedham.

— The following rule has just been embodied in the regulations relative to the admission of visitors to the City Hospital: "The trustees, among other new regulations, have directed that patients admitted to the hospital with scarlet fever or diphtheria cannot receive visits from friends unless such patients are dangerously ill, or have sufficiently convalesced to be transferred to a common ward. Inquiries concerning such patients may be made at the lodge, and their condition will be made known there."

NEW YORK.

— The first sentence to death by electricity ever pronounced in this country was given at Buffalo by Judge Childs on the 14th of May. The criminal, William Kemmler, was convicted of the murder of a young woman whom he had betrayed, and he was sentenced to be executed at Auburn. The warrant to the warden of the prison directs that the sentence be carried out "upon some day within the week commencing Monday, the 24th day of June, 1889, and within the walls of the Auburn State Prison, by then and there causing to pass through the body of the said William Kemmler a current of electricity of sufficient intensity to cause death, and that the application of such current of electricity be continued until said William Kemmler be dead."

— They have rather a curious way of summoning a doctor, when the services of one are required after night-fall, at Bedloe's Island, on which the big statue of Liberty stands. As all communication with the mainland and Governor's Island is suspended during the night, a cannon is fired. This at once attracts the attention of the sentinels on Governor's Island, and a surgeon from the garrison is soon on his way to Bedloe's Island in a row-boat.

In this way Dr. Pilcher was called the other night, and he arrived in time to present a fine boy to one of the officers stationed there.

— Dr. Frank R. Vincent, of Clifton Springs, N. Y., died May 13th, while experimenting upon his own person with a Sayre suspension apparatus. Dr. Sayre expresses the opinion that Dr. Vincent, after arranging the instrument, and while his body was in the position in which it was found, with the toes touching the floor, must have fainted, when that part of the apparatus which goes under the chin slipped up over his nose and mouth and suffocated him. This was the cause of death in the only other fatal accident of the kind known, the patient, as in this instance, being unattended. Such an accident cannot possibly occur if there is an attendant present, and Dr. Sayre insists very strongly that this should always be the case.

Miscellany.

THE PRACTICAL DISINFECTION OF INSTRUMENTS.

Freeman and Oliver, in a recent article in the Cincinnati *Lancet and Clinic*, give the results of their observations on this important subject. After showing by various experiments that pyogenous bacilli smeared with blood upon knives, etc., resisted an exposure for half an hour to 5 per cent. carbolic solution, the conclusion is reached that it is evidently unwise to pin our faith to carbolic acid or corrosive sublimate, especially as we have another agent which costs practically nothing, is easy of application and always obtainable, and which is absolutely certain in its effects when properly used. This agent is common boiling water, or its equivalent, steam, at 100° C.

Where it is practicable to employ streaming steam it is perhaps the more reliable and certainly the more convenient of the two, as the instruments can be more easily handled and they can be sterilized without tumbling against each other, to the detriment of their cutting edges. Steam should, in general, be used in hospitals, and boiling water in private practice, where it is not always easy to obtain a steam sterilizing apparatus.

Five minutes of continuous boiling is sufficient to kill the most refractive pathogenic organisms, no matter how they may be mixed with pus or blood, or how effectually they may be stuck away in obscure cracks or inequalities. This has been conclusively proved by Davidsohn in an elaborate series of experiments made in Koch's laboratory. Soyka states that water conducts heat twenty-seven times as rapidly as air, and in addition to this the moisture swells the cell membrane and makes the organisms much more accessible to a given temperature than when in a dry state.

One or two precautions are, however, absolutely necessary if we would be certain of our results. The first of these is, that hollow instruments, like a syringe, should be completely filled with the boiling water. The second is, that the vessel should be a covered one, with only a small outlet for the escaping steam. This latter point is really the nucleus of the whole process.

If the vessel be nearly closed, a temperature of nearly 100° is maintained throughout, including the steam above the water.

Streaming steam acts more rapidly than steam in the quiescent state; steam at 100° C. is a much better disinfectant than superheated steam. Saturated steam is what is required, and the higher we raise the temperature the dryer becomes the steam. Air or superheated steam must be raised to a temperature of 140° or 150° before it becomes as effective a sterilizing agent as ordinary steam at 100°. These facts have been recently brought forward by Esmarch. Hence, all disinfecting apparatus depending upon overheated steam should be discarded.

HYPODERMIC INJECTIONS OF QUININE IN MALARIA.

In the *British Medical Journal*, March 16, Dr. Carvalho, of Portugal, reports an extreme case of malaria very successfully treated by hypodermic injections of quinine.

The patient was a woman, aged 35, in whom the disease had reached the cachectic stage. The skin and mucous membranes were discolored, and the spleen, which was very tender on pressure, reached down to the left iliac fossa, and extended towards the right to within two or three centimetres of the middle line. The stomach was dilated, and the patient suffered much from dyspepsia. The temperature varied from 39.8° C. in the morning to 38.2° in the evening. Sulphate of quinine was given internally in capsules and in pills, but only with the effect of aggravating the gastric disorder. On November 18 hypodermic injections of neutral hydrochlorate of quinine were commenced, at first in doses of 4, and afterwards 5, decigrammes. The temperature soon began to fall even in the morning, and by the middle of December it was normal, never exceeding 37.5° in the evening, and being sometimes below 37° in the morning. On January 13 the patient was discharged cured, the spleen being much reduced in size and not at all tender, and the discoloration of the skin and mucous membranes having almost entirely disappeared. Her dyspepsia had also ceased to trouble her. The injections, which were all made under the skin of the forearm, caused a little irritation. A few small abscesses formed around some of the points of puncture, and had to be opened, but gave no further trouble. The following is the formula of the solution used for injection: ℞. Basic hydrochlorate of quinine, 1 gramme; pure hydrochloric acid, 1 minim; distilled water, 2 grammes. These ingredients should be placed in a test-tube, and exposed to the action of gentle heat. A clear solution will be obtained, each cubic centimetre of which will contain five decigrammes of neutral hydrochlorate of quinine. The solution should be injected warm. Other observers have reported good results following this method of treatment.

THE RISE AND FALL OF THE MICROBIAN EMPIRE.

THE *Polyclinic* for April, 1889, contains the substance of a lecture by Prof. Peters, of Paris, which reviews the change of front that is being made as to microbian theories. He suggests the above striking title as an alternative for the one more formally given to his lecture "On microbes and animal alkaloids." The result of the latest investigations and admissions of the extremest supporters of the germ theories of disease tends to prove that it is not the microbe that is dangerous in itself, but only by means of the alkaloids it generates. This theme is illustrated and proved by numerous references. Viruses now are shown to react qualitatively, not quantitatively, as is demonstrated by the "chemical vaccines" and dried cord inoculations of the hydrophobia treatment. In other words, the microbes are only carriers and porters of the poison. In transferring the microbe, you transfer the alkaloid. The bacteria of the tenth cultivation are morphologically identical with those of the first; they have only ceased to be so pathologically. In the process of cultivation the something they have been deprived of was the something which they carried with them. Another fact pointing in the same direction is the fact that the so-called bacillus of cholera cultivated in broth loses its lethal powers; while, cultivated again after the method of Loewenthal, it recovers them. Furthermore, the very admission of Koch and others that the bacillus acts by means of its alkaloidal product, is an admission of the innocuousness of the microbe *per se.* Strauss has demonstrated that there are fulminant cases of cholera in which few or no bacilli are found, the patient dying before the bacilli have time to appear. They are, therefore, not the authors of the mischief. So in acute phthisis, the bacilli are few or absent. Le Fort denies the pathogenic power of aerial germs, and freely exposes open wounds to their action in the Hotel Neckar. He was able to obtain from these wounds the characteristic cultivations of the staphylococcus albus, aureus, etc. In brief, then, the change of attitude is summed up in saying that the real virus is chemical and not organic, and that the microbe is *post hoc* and not *propter hoc.* Our contemporary points out that this most advanced view of to-day is essentially that advocated some years ago by Dr. Morris Longstreth, of Philadelphia.

A MOST SENSIBLE MEMORIAL.

THE memory of Thomas J. Potter, one of Iowa's brightest railroad men, will be perpetuated by a hospital for injured and sick railroad men, as we learn by press despatch, and not by a bronze statue of heroic size as was planned at the time of his death, about a year ago. He was vice-president and general manager of the Chicago, Burlington, and Quincy road. When a committee was appointed to solicit funds for a monument most of his intimate friends opposed the project, arguing that if he had been consulted his voice would have been against any such expenditure of money.

Then it was agreed to build a hospital, to be known as the Potter Hospital. With hardly an exception the men who subscribed for the monument have consented that their contributions shall stand for the hospital fund, and several subscribers have doubled their gifts. Nearly $10,000 has already been raised, and the committee anticipates little trouble in securing $25,000, which will be sufficient to begin the work. The hospital will be erected in the city that subscribes the most money.

Such a hospital was one of the pet projects of Mr. Potter. Among those most anxious for the substitution of the hospital for the monument is Mr. Potter's widow. It is planned to start the construction work this season, if possible.

ETHER INTOXICATION.

WE have already noted the fact that the use of ether for purposes of intoxication has reached such an extent in Ireland as to call for parliamentary inquiry. The *London Medical Recorder* reproduces, in this connection, a paper from *Irrenfreund*, originally published by Dr. Ewald in 1877, which reports the first observed case of the abuse of this medicinal agent for intoxication. Dr. Ewald made a careful study of his patient. A wild, worn-out looking man presented himself at the hospital at Berlin, smelling of ether. He complained of exhaustion, want of appetite, and trembling of the muscles. He was known in Berlin as Der Aether-Fritze, and was now thirty-two years of age. Ten years before he had been a sober and respectable man. Becoming deeply engaged in philosophical and æsthetic studies, he had been attracted by a popular description of the effects of the drug, in which it was said that it heightened the fancy and quickened mental activity. On this account he tried the inhalation of sulphuric ether, which he described as having an effect upon him somewhat like that which follows hashisch. He thought he had measured whole worlds and lived through endless time, but he found on awakening that scarcely a quarter of an hour had elapsed. Though his next experiences were less agreeable, he continued to use the drug and to require it in increasing quantities. At last he became a regular ether sot, spending whole nights in the open air and haunting the different apothecaries' shops, in order to collect in small doses the enormous quantity of ether which he required to bring him into a state of intoxication. Dr. Ewald took the occasion to study the effects of ether upon this man. It was found that he needed 207 grammes of ether to make him insensible, and soon passed out of this stage. On allowing him the free use of ether he soon made himself intoxicated, when the pulse became fuller and stronger, rising from 72 to 80. The breathing became quickened, he talked nonsense, laughed, and ran about the room. There were hallucinations of a mystic character not defined. There was dilation of the pupils. No alteration was found in the character of the urine, which was carefully examined. His breath continued to smell of ether for eight days after he had ceased to use it. He was treated with tonics and cold baths. The result is not given.

COMBINED DILATATION OF THE CARDIAC ORIFICE AND PYLORUS.

On March 17, Professor Pietro Loreta, of Bologna, successfully performed mechanical dilatation of both orifices of the stomach at one sitting, thus combining in one operation two procedures with which his name is particularly identified. The patient and the operation are thus described in the *Bristol Medical Journal* of April 20: — The patient, a man aged forty-eight, had suffered since he was fifteen from functional disease of stomach, which increased in severity, till in 1882 his condition became serious. Two or three hours after taking food he was seized with intense pain in the stomach, which lasted for about six hours and was accompanied by vomiting, shivering, high temperature, and regurgitation. Every kind of treatment was tried to no purpose, including artificial feeding, which caused a feeling of weight in the stomach and retching. When the patient came under observation in the present year, the symptoms were regurgitation of food, oppression, and acid eructations. After eating he had to lie quiet for six or seven hours, any movement causing extreme pain. The œsophageal bougie was arrested at a point forty-one centimetres from the teeth. Dr. Loreta made a diagnosis of stenosis of the cardiac orifice, with dilatation of the œsophagus above the strictured point. The patient having been placed under chloroform, an incision ten centimetres long was made in the middle line of the abdomen, the peritoneum was opened, and a portion of the stomach drawn out and covered with flannel wrung out of a solution of sublimate at a temperature of 45° C. An incision about six centimetres in length was next made in the stomach, hæmorrhage being prevented by forcipressure forceps placed around the edges of the wound. An attempt to pass a dilator through the stricture, which was situated a little above the cardiac orifice, having failed, a bougie was passed down the œsophagus and forced through the stricture. The dilator was again introduced through the stomach, and guided by the end of the bougie, passed into the stricture, which was then easily dilated. The pylorus, which was also narrowed, was next dilated by Prof. Loreta's well-known method of "digital divulsion." Finally, the stomach and abdominal wall were stitched, layer by layer, the operation having occupied a little over an hour. The strictest antiseptic precautions were observed throughout. The report, dated on the eleventh day after the operation, states that the patient's condition was then most satisfactory.

REPORTED MORTALITY FOR THE WEEK ENDING MAY 11, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhœal Diseases.	Diph. and Croup.	Measles
New York	1,571,558	782	334	22.75	14.56	2.08	7.54	6.24
Philadelphia	1,040,245	397	135	20.00	20.00	2 25	2.50	1.25
Chicago	830,000	328	162	17.70	14.10	3.00	5.40	1.20
Brooklyn	814,505	415	181	17.52	18.96	1.44	6.48	2.40
Baltimore	500,343	146	39	10.35	6.20	.69	1.38	2.76
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	188	68	12.72	20.67	2.12	5.83	—
New Orleans	250,000	141	39	17.04	9.94	7.81	3.55	—
Cincinnati	225,000	142	—	16.10	13.30	—	9.10	1.40
Washington	225,000	92	23	6.54	8.72	—	2.18	1.09
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	11	—	9.09	—	—	—	—
Charleston	60,145	47	19	12.78	6.39	8.52	—	—
Portland	40,000	6	—	16.66	—	—	—	—
Worcester	78,292	27	9	7.40	18.50	3.70	3.70	—
Lowell	71,518	39	14	7.68	10.30	—	2.56	—
Cambridge	65,552	27	9	22.20	14.80	—	7.40	—
Fall River	62,647	20	8	10.00	20.00	—	5.00	5.00
Lynn	53,334	15	4	6.66	13.33	—	6.66	—
Springfield	40,731	21	3	14.28	19.04	—	14.28	—
Lawrence	40,619	16	5	25.00	6.25	—	—	—
New Bedford	37,253	16	4	12.50	—	—	12.50	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	5	2	40.00	40.00	—	20.00	—
Salem	29,011	6	4	16.66	—	16.66	—	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	—	—	—	—	—	—	—
Haverhill	26,058	9	2	22.22	22.22	—	—	—
Taunton	25,170	5	2	40.00	—	—	40.00	—
Gloucester	24,263	5	1	20.00	20.00	—	—	—
Newton	21,553	5	1	20.00	20.00	—	—	—
Malden	19,774	4	2	—	—	—	—	—
Fitchburg	17,534	10	1	—	10.00	—	—	—
Waltham	17,332	6	1	—	33.33	—	—	—
Newburyport	13,875	—	—	—	—	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	7	2	42.84	—	—	14.28	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2938; under five years of age 1034; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping cough, erysipelas and fevers) 475, acute lung diseases 403, consumption 356, diphtheria and croup 161, scarlet fever 75, diarrhœal diseases 63, measles 41, whooping-cough 42, typhoid fever 35, erysipelas 22, malarial fever 19, cerebro-spinal meningitis 14, puerperal fever 8, small-pox (Chicago) 1. From measles, Chicago 13, Brooklyn 10, New York 8, Cambridge 4, Philadelphia, Boston, and Haverhill 2 each, Baltimore, Cincinnati, and Quincy 1 each. From whooping-cough, New York 24, Brooklyn 5, Chicago 4, Philadelphia and Boston 3 each, New Orleans 2, Lowell 1. From typhoid fever, Philadelphia 9, Baltimore 5, New York 4, Cincinnati and Lawrence 3 each, Chicago, Brooklyn, and Cincinnati 2 each, New Orleans, Charleston, Portland, Lowell, and Newton 1 each. From erysipelas, New York 10, Chicago, Brooklyn, and Cincinnati 3 each, Philadelphia, Baltimore, and Washington 1 each. From malarial fever, Brooklyn 6, New Orleans 5, Philadelphia 3, Chicago 2, Nashville and Charleston 1 each. From cerebro-spinal meningitis, New York 6, Washington 2, Boston, Cincinnati, Lawrence, Somerville, Gloucester, and Quincy 1 each. From puerperal fever, Brooklyn 4, Chicago 2, Baltimore and Cincinnati 1 each.

The meteorological record for the week ending May 11, in Boston, was as follows, according to observations furnished b Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, May 11, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in Inches.
May 5	29.96	66.0	80.0	43.0	68	53		60.0	W.	W.		11	10		C.	C.			.00
" 6	30.08	59.0	71.0	49.0	47	86		66.0	N. W.	E.		9	9		C.	C.			.00
" 7	30.09	47.0	50.0	43.0	86	92		89.0	N. E.	E.		6	10		O.	O.			.00
" 8	29.98	56.0	68.0	42.0	80	60		70.0	S. W.	W. S.		3	10		C.	C.			.00
" 9	29.92	70.0	90.0	54.0	66	57		62.0	S. W.	S.		10	12		C.	C.			.00
" 10	29.67	74.0	92.0	61.0	65	66		66.0	S. W.	W.		8	12		C.	R.		1.35	.08
" 11	29.69	62.0	62.0	55.0	66	71		68.0	N. E.	S. E.		12	6		O.	C.		2.10	.07
Means for the Week	29.91		78.0	49.0				69.0										3.45	.15

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MAY 11, 1889, TO MAY 18, 1889.

By direction of the Acting Secretary of War, a board of medical officers, to consist of Lieutenant-Colonel **Anthony Heger**, Surgeon; Captain **F. C. Ainsworth**, Assistant Surgeon, and Captain **John O. Skinner**, Assistant Surgeon, will assemble at the U. S. Mil. Academy, West Point, N. Y., on June 1, 1889, to examine into the physical qualification of candidates for admission and members of the graduating class. Par. 9, S. O. 108, A. G. O., May 10, 1889

By direction of the Acting Secretary of War, the following-named officers are detailed to represent the Medical Department of the Army at the annual meeting of the American Medical Association, to be held at Newport, R. I., on the 25th of June, 1889:— Major **Samuel M. Horton**, Major **John S. Billings**, and Major **Charles Smart**, Surgeons U. S. Army. Par. 15, S. O. 110, A. G. O., May 13, 1889.

Gorgas, Capt. **William C.**, Assistant Surgeon, now on duty at Ft. Barrancas, Fla., will report in person to the commanding-general Department of the Missouri for temporary duty with troops in the field. Par. 1, S. O. 112, A. G. O., Washington, May 15, 1889.

By direction of the Acting Secretary of War, leave of absence for six months on Surgeon's Certificate of Disability is granted Captain **R. G. Ebert** and Captain **E. B. Moseley**, Assistant Surgeons, U. S. Army. Pars. 5 and 6, S. O. 109, A. G. O., May 11, 1889.

By direction of the Acting Secretary of War, Captain **Louis S. Tesson**, Assistant Surgeon, U. S. Army, is relieved from duty at Watervliet Arsenal, N. Y., and ordered to Fort Sidney, Nebraska. Par. 9, S. O. 109, A. G. O., May 11, 1889.

By direction of the Acting Secretary of War the ordinary leave of absence granted Captain **William R. Davis**, Assistant Surgeon, in Special Orders, No. 232, October 5, 1888, from this office, is extended six months on surgeon's certificate of disability. Par. 20, S. O. 108, A. G. O., May 10, 1889

By par. 5, S. O. 108, Headquarters Division of the Atlantic, Governor's Island, N. Y. City, May 13, 1889, Captain **William C. Gorgas**, Assistant Surgeon, U. S. Army, will accompany the command from Fort Barrancas, Fla., and proceed with battery H, 2 Art., to Fort Adams, R. I., and to return to his proper station on completion of this duty.

Leave of absence for one month, to take effect between the 1st and the 15th of June, 1889, is hereby granted First Lieutenant **Jefferson R. Kean**, Assistant Surgeon, U. S. Army, Fort Robinson, Neb., with permission to apply at Headquarters Division of the Missouri for an extension of 15 days. Par. 2, S. O. 48, Headquarters Department of the Platte, May 13, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 18, 1889.

Whiting, Robert, Passed Assistant Surgeon, ordered to the Receiving Ship "Minnesota."

Harmon, G. E. H., Surgeon, detached from the Naval Academy and to the "Constellation."

Lowndes, C. W. F., Assistant Surgeon, detached from Naval Academy and to the "Constellation."

Arnold, W. F., Assistant Surgeon, detached from "New Hampshire" and to the "Pinta."

Rush, C. W., Passed Assistant Surgeon, detached from "Pinta," proceed home and wait orders.

McClurg, W. A., Surgeon, ordered to the Bureau Medicine and Surgery.

Stitt, E. R., Assistant Surgeon, detached from Bureau Medicine and Surgery and to the "New Hampshire."

Eckstein, H. C., Surgeon, ordered to the Marine Rendezvous, Philadelphia, Pa.

Bradley, M., Med. Dir., detached from Marine Rendezvous, Philadelphia, Pa., and continue on special duty Phila.

Ruth, M. L., Surgeon, granted another year's leave.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting will be held on Monday, May 27th, at the Medical Library at 8 o'clock P.M. Reader: Dr. F. C. Shattuck. Subject: "Some Remarks on Typhoid Fever, with special reference to Relapse, and an analysis of one hundred and twenty-nine hospital cases." Dr. F. E. Cheeny will report, by invitation, "An Uncomplicated Case of Progressive Ophthalmoplegia Externa.

F. H. Harrington, M.D., *Secretary*

Massachusetts Medical Society. — One Hundred and Eighth Anniversary. — The annual meeting will be held at 9 o'clock A.M., Wednesday, June 12, 1889, in the building of the Massachusetts Charitable Mechanics' Association, on Huntington Avenue, Boston Meetings of Sections will be held in the same place on the preceding day, Tuesday, June 11. By order of the President.

Francis W. Goss, *Recording Secretary.*

APPOINTMENT.

Massachusetts Soldiers' Home. — Dr. **Samuel N. Nelson** has been appointed Surgeon to the Soldiers' Home, Chelsea, in place of Dr. H. J. Harriman, deceased. The trustees are building a new wing, which will accommodate an additional hundred men. The present Legislature appropriated $50,000 for that purpose; and three trustees will be appointed.

BOOKS AND PAMPHLETS RECEIVED.

The Influence of Antifebrin, Salicylic Acid, and Carbolic Acid on Normal and Abnormal Bodily Temperature. By H. A. Hare, M.D. (Univ. of Pa.), Demonstrator of Experimental Therapeutics and Instructor in Physical Diagnosis in the University of Pennsylvania. 1887.

Die Sterblichkeitsverhältnisse in den Krankenpflegeorden. Von Dr George Cornet, prakt. Arzt in Berlin und Reichenhall. 1889.

The Sixty-fifth Annual Report of the Officers of the Retreat for the Insane at Hartford, Conn. 1889.

Sixth Annual Report of the Superintendent of Health of the City of Providence, for the year ending December 31, 1888. 1889.

A Treatise on Hernia. The Radical Cure by the use of the Buried Antiseptic Animal Suture. By Henry O. Marcy, A.M., M.D., LL.D., of Boston, Mass. George S. Davis, Detroit, Mich. 1889.

Original Articles.

VOLUNTARY CONTROL OF THE HEART.[1]

BY EDWARD ALLEN PEASE, A.B.

Although the heart has always been considered one of the most involuntary organs connected with the human body we have now evidence that there are gifted individuals who have a certain amount of direct control over it. The wonderful connection between the heart's action and a person's feelings is well known. Any feeling of an agreeable or joyful character will tend to increase the rate of the heart-beat, whereas those feelings of a disagreeable or sad nature will tend to decrease it. Moreover, a very strong or sudden emotion of any sort may cause a momentary stopping of the heart-beat, as most people know by experience. Physiologists have long been aware of the close relationship between the heart's action and that of the brain; yet, for lack of sufficient evidence, have not granted that any direct control over the heart could be induced by a simple effort of the will.

In treating the subject of voluntary control of the heart I shall divide it, to avoid confusion, into two parts: 1. Indirect voluntary control, due to the effort of the will directed upon some object or objects which, in their turn, produce an effect upon the heart's action. 2. Direct voluntary control, due simply and purely to an effort of the will directed upon the heart itself.

1. Indirect voluntary control of heart appears in several forms, some of which I will mention with examples, in order that we may have a clear idea of this sort of control before we enter upon the question of direct voluntary control, which forms the special subject of this paper. (*a*) Voluntarily induced sad emotions have been known in several instances to bring about a change in the heart's rhythm. Professor Botkin[2] states he had once a patient under treatment for atrophy of her muscles who could diminish the beat of her heart at pleasure and for as long a time as she wished, and, moreover, could destroy its regular rhythm. In order to do this she had only to look at the bed in which she was formerly ill and thus bring into her mind the unpleasant associations surrounding it. When in good spirits she had no control over her heart. (*b*) Pressure on the vagus (a large nerve running alongside the carotid artery in the neck, and, on its way to the stomach, sending inhibitory branches to the heart), has been brought into service to cause a decrease in number of heart-beats. Professor Zermak,[3] of Prague, could diminish the rate of his heart-beat more than one-half by simply pressing on this nerve. As he had an enlarged indurated lymph gland lying just beneath the vagus nerve in the upper portion of his neck he found no difficulty in bringing about this pressure. (*c*) Checking the respiratory rhythm by a strong contraction of the thoracic muscles while the glottis is closed in inspiratory position has been sufficient to stop the heart-beat. Weber[4] has performed this experiment successfully on himself, and explains this decrease in the rate and stoppage of the heart's beat, partly by a lessening of the pressure within the thorax and partly by a storing up of carbonic dioxide gas by means of which the inhibitory heart-centres going to the medulla oblongata become irritated. But Wertheimer and Meyer[5] explain a similar case by saying the diminution in the number of beats was due to irritation of the threads of the vagi which run to the lungs. These threads become pressed together by the full alveoli and so are stimulated. (*d*) A marked change made in the respiratory rhythm will cause a change in the rapidity of the heart's beat; but an increased number of heart-beats from this cause would really come under the head of increased heart-action due to increased muscular action of any sort, — a phenomenon with which we are all familiar.

2. Direct voluntary control of heart. Carpenter[6] says that the influence of the state of expectant attention is strangely manifested in the heart; the action of which, Sir H. Holland has remarked, "is often quickened or otherwise disturbed by a mere centering of consciousness upon it without any emotion or anxiety; and where there is a liability to irregular pulsation such action is seemingly brought on, or increased, by the effort of the attention, even though no obvious emotion be present." We know that the vagus nerve has inhibitory and the sympathetic nerve accelerator action upon the heart. A voluntary control apparently from the action of one or the other of these nerves can thus be effected by certain persons who possess the requisite amount of will-power.

Joseph Frank[7] made his heart's beat intermittent and irregular by simply concentrating his attention upon it. A Bologna professor[8] was completely cured of intermittent pulse by following the advice of his physician, Morgagni, not to count his pulse, *i.e.*, not to pay any more attention to it. There was a fellow of the Royal Society in London[9] who could increase his heart's beat ten to twenty times a minute by a simple effort of the will.

The best known and most historic case of voluntary control of heart is that of Lieutenant Townsend.[10] He possessed the power to stop at will his heart-beat and breathing, and at the same time, to go into a deathlike sleep. His body would begin to cool and stiffen, his eyes become immovable, and finally his consciousness almost leave him. In a few hours, however, he would return to full consciousness. One evening, after he had made an experiment before a large audience to show his power of voluntary control of heart, this man died. From the fact that Lieutenant Townsend died soon after the only experiment which was adequately performed it might be thought that he was already in a moribund condition before trying this experiment; yet the post-mortem examination revealed a diseased condition in no part of the body except one kidney. In all the cases I have mentioned so far there is no conclusive evidence that the change in the heart's rhythm was due simply to direct voluntary control. To prove this all forms of indirect voluntary control must be excluded.

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[1] Read at a physiological conference in the Harvard Medical School February 4, 1889.

[2] Klinische Wochenschrift. Herausgegeben von Botkin, 1881, No. 10.

[3] Jenaische Zeitschrift f. Med. und Naturwiss., 1865, p. 384.

[4] Weber. Ueber ein Verfahren, den Kreislauf des Blutes und die Function des Herzens willkürlich zu unterbrechen. Arch. f. Anat. und Physiol. und wissenschaftl. Medicin, von T. Müller, 1851, p. 88.

[5] Archives de Physiologie, Paris, 1889, p. 49.

[6] Human Physiology, Carpenter, 1869. p. 808.

[7] Joseph Frank. Praxæ medicæ universæ præcepta. Lipsiæ. Th. ii. Bd. ii. Abth. ii. p. 373.

[8] Wagner's Handwörterbuch d. Physiol., 1844, Bd. ii. p. 82.

[9] D. H. Tuke. Illustrations of the Influence of the Mind upon the Body in Health and Disease, London, 1872.

[10] Carpenter's Human Physiology, 1853, p. 1103.

It was by the aid of the sphygmograph, pneumograph, plethysmograph, and other instruments that Professor Tarchanoff,[11] a Russian physiologist, was able to prove scientifically that in certain cases the heart is under the direct control of the will.[12] He found among his students a young man named Salomé, who claimed to have voluntary control over his heart. The young man was of a rather nervous temperament, and, when ten or fifteen years of age, had suffered from palpitation of the heart without any apparent cause. In course of time, however, he had rid himself of the disease and would have forgotten all about it, were it not for the fact that he noticed accidentally he was able to change the rhythm of his pulse by a comparatively trifling outside cause. Experimenting further he found he could accelerate his pulse by simply concentrating his attention upon it and exerting a sufficient amount of will-power. It was at this time that Salomé came under the attention of Professor Tarchanoff.

At the first meeting Salomé gave a striking proof of his ability by accelerating the beat of his heart from 70 to 105, *i.e.*, 35 beats a minute. The experiment was repeated several times with about the same result, although the amount of the acceleration fell off plainly with each repetition of the act. In later experiments Salomé increased the beat somewhat more. He found that arsenic would assist him in accelerating the heart's beat, and that nitrous oxide (laughing gas), although increasing the heart-beat 6 or 8 a minute by its own properties, would at the same time take away the power of the subject to control his heart voluntarily. When he recovered from the effects of the nitrous oxide he was again able to accelerate the beat 25 a minute. Salomé said he called up no extraneous ideas to increase his heart's beat, but used a special effort of the will. Throughout the experiments Tarchanoff found that the respiration during acceleration was not quite normal, as may be seen by inspection of the pneumographic tracing marked 3 in Fig. I., a reproduction of one of Tarchanoff's figures. Tracing 2 shows the period of acceleration by a heavy white line made by the subject pressing gently an electric button during the time he was trying to increase his heart-beat. Tracing 1 is made by a galvanic chronograph marking seconds. Tracing 4 was obtained by placing the foot in a plethysmograph, a rubber cap arrangement fitting tightly over the leg and having the air space between the foot and the cap connected with a Marey drum. It shows the increased heart-beat during the acceleration effort and the diminution in the size of the limb as appears from the general falling of the line. This diminution is associated with an increased blood-pressure, which lasts after the effort at acceleration has ceased, thus showing that a vaso-constrictor influence accompanies voluntary acceleration.

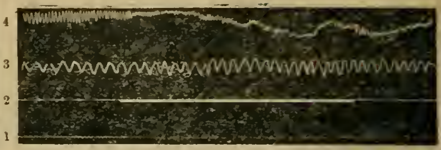

FIG. I. (from Professor Tarchanoff's article). — 1. Chronograph, one-second interval. 2. Acceleration period. 3. Thoracic pneumograph. 4. Plethysmograph. To be read from left to right.

The acceleration of the beat in the above figure is at the rate of 27 a minute. There is also an increase of three respiratory curves a minute; but this slight increase in the number of respirations is quite insufficient to account for the great increase in the number of heart-beats. Salomé's vaso-motor system was very sensitive: even slight sounds in the room would increase his blood-pressure. He had control over his ear muscles, platysma myoides, and several other muscles which are not usually under the control of the will. Tarchanoff thinks that Salomé gets his power of voluntary control from an unusual arrangement of the nervous substance. He believes there is a direct connection between the highest will centres of the hemispheres and the accelerating heart centres, which are situated in the high cervical part of the spinal cord. He thinks the vagus plays no part in this acceleration. Tarchanoff says that after these experiments on Salomé he met several persons who had the power to accelerate their heart's beat; but all, without exception, had also a certain amount of control over muscles which were ordinarily beyond the voluntary control of man, such as the platysma myoides, muscles of the ear, and of the three terminal phalanges of the fingers. He had not met a single person of the usual nervous muscular arrangement who could control his heart's beat.

By chance I heard that a member of the Harvard Medical School had a certain amount of voluntary control over his heart. This man, on learning I had chosen the subject of voluntary control of heart to write on, offered to allow me to try some experiments upon him to test scientifically his power. As I knew practically nothing about the delicate apparatus used in experiments of this sort, Dr. H. P. Bowditch kindly conducted the experiments, the results of which I now present to you.

In these experiments a sphygmograph, pneumograph, chronograph marking two-second intervals, and an instrument to mark the period of acceleration, were used. Our subject, like Salomé, was unable to continue the stimulus for acceleration of the heart indefinitely, so in the following experiments I have reduced the actual figures to the basis of a minute. As the respiration curve in our first experiments, as shown by the pneumograph, was rather small, it was thought the subject must breathe mainly by his abdomen, so another pneumograph was placed over the subject's abdomen. The respiratory curve produced by this last instrument was much better marked. By means of these two instruments we could detect in the remaining experiments any slight change in the breathing.

Now the first figure I have for your inspection is one showing a great acceleration of the heart's beat with a fairly normal respiration.

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[11] Ueber die Willkürliche Acceleration der Herzschläge beim Menschen. Archiv für die Gesammte Physiologie, Bd. 35, p. 109.

[12] I am indebted to Professor Tarchanoff's article for several of my references.

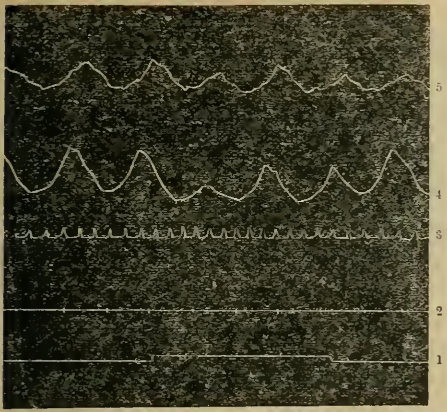

Fig. II.— 1. Acceleration period. 2. Chronograph, two-second intervals. 3. Sphygmograph on radial artery. 4. Abdominal pneumograph. 5. Thoracic pneumograph. To be read from right to left. An acceleration at the rate of 17 beats per minute.

This figure and also the following figures should be read from right to left. Tracing 1 marks the acceleration period by making a somewhat higher line during the effort. Tracing 2 is made by a chronograph marking two-second intervals. Tracing 3 is that of the transmission sphygmograph placed upon the radial artery of the right hand. Tracing 4 is that of the abdominal pneumograph. Tracing 5 is that of the thoracic pneumograph. The descending curves in the last two mark inspiration; the ascending curves, expiration. Now, in order to find out the acceleration I counted the heart-beats on the sphygmographic tracing between perpendicular lines drawn from the chronographic dots nearest the beginning and end of the acceleration period (having made corrections for any lack in perpendicularity there might have been in the position of the tracing pens), and then subtracted from the result thus obtained the number of heart-beats in the same length of time preceding the point where the stimulus for acceleration was put on. For the 8 seconds before acceleration there were 10.4 heart-beats. For the 8 seconds during acceleration there were 12.7 heart-beats. The acceleration in this case was 2.3 beats in 8 seconds, which is at the rate of 17¼ beats in one minute. The beat after acceleration does not return immediately, but gradually, to normal; as I found by counting the number of beats for the same length of time after the acceleration effort had ceased to be called into action. Throughout the experiments I found that each acceleration was attended with a somewhat deeper inspiration, followed by a shortened expiration. This may be seen in tracing 4 in Fig. II. and to a less degree by tracing 5. The breathing becomes a trifle quicker during acceleration, but the increase is so slight that it is barely noticeable in the diagram. The question is whether the slight increase in rapidity and depth of respiration would cause an acceleration at the rate of over 17 beats a minute. This is not probable, as I will show later.

Fig. III. shows the result of an experiment in which the subject tried to accelerate his heart-beat as much as possible, without, however, any powerful muscular contraction. (In the preceding experiments he had tried to breathe normally while accelerating.) The acceleration obtained was at the rate of 27 a minute, the beat going from 79 to 106.

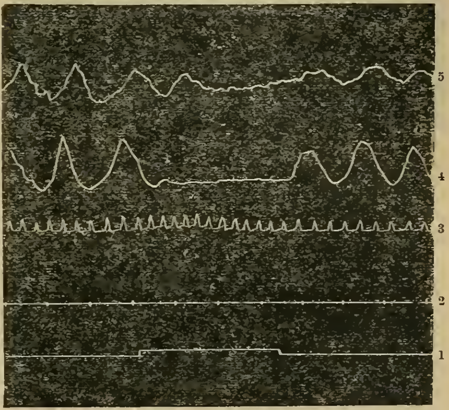

Fig. III. — 1. Acceleration period. 2. Chronograph, two-second intervals. 3. Sphygmograph on radial artery. 4. Abdominal pneumograph. 5. Thoracic pneumograph. To be read from right to left. Acceleration at the rate of 27 per minute.

In order to get this great acceleration he held his breath at the end of the abdominal and middle of the thoracic respiration (as may be seen by referring to the figure), and then called up the stimulus to accelerate. It is to be noticed in this figure that there is a distinct rise of blood-pressure accompanying the acceleration of the heart-beat as seen by the general rise of the sphygmographic tracing. The increased blood-pressure appears soon after the effort at acceleration has begun, and lasts for some little time after the effort has ceased. The rise is better marked here than in the preceding or following figure. From the fact that his respiration stopped when he accelerated most his heart-beat, it seemed possible that holding his breath might be the main cause of the great acceleration. Therefore an experiment was tried where the subject held his respiration until a tracing of the pulse was obtained when the heart was under these conditions, and then the word was given to accelerate.

The result of this experiment is seen in Fig. IV. The acceleration period was six seconds. The normal beat was at the rate of 77 a minute; with checked respiration the beat was at the rate of 73 a minute; during acceleration the beat was at the rate of 87 a minute, — an acceleration, after the diminution caused by checked respiration, at the rate of 14 a minute. In another experiment similar to the one above the subject caused a still greater acceleration of his heart-beat, the sphygmograph registering an increase at the rate of 19½ beats a minute. These facts eliminate the possibility that

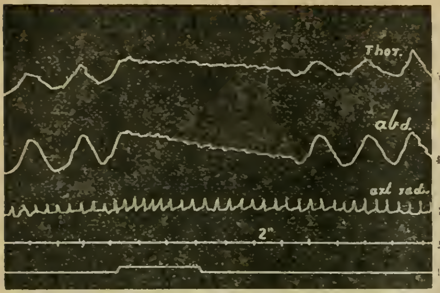

Fig. IV. — 1. Acceleration period. 2. Chronograph, two-second intervals. 3. Sphygmograph on radial artery. 4. Abdominal pneumograph. 5. Thoracic pneumograph. To be read from right to left. An acceleration of 14 per minute.

the acceleration was in any way due to a checking of the respiration, for, in this subject, holding the breath caused a very marked decrease instead of an increase in the number of heart-beats per minute.

In speaking of Fig. II. in these experiments I left for later consideration the fact that, although the subject endeavored to keep his breathing normal, there was with each acceleration a slightly deeper and quicker respiration. Now, in order to prove that the acceleration was not due to any increase in frequency or depth of breathing, the subject was asked to take several deep and rather quick respirations, without putting on the acceleration stimulus. In comparing the tracings of several periods of normal respirations with several periods of these deeper and rather more rapid respirations I found that the moderately fast and deep breathing caused but very little increase in the rate of the heart-beat, — an increase that was totally insufficient to be considered even as a partial cause of the great acceleration obtained by this subject.

In the above remarks I have taken care to say periods of respiration (meaning thereby a certain number of full respirations), for Wertheimer and Meyer[13] say there is an acceleration of the heart-beat at each inspiration and a diminution at each expiration. As there were one or more full respirations in the cases I have presented to you my results are not dependent on any acceleration that may be found in a single inspiration. While bringing the Fig. II. to your attention I asked you to notice the marked rise in blood-pressure during acceleration as shown by the general rise of the sphygmographic tracing. This rise in blood-pressure is shown still better in the plethysmographic tracing in Fig. V. The plethysmograph used for this tracing was a small rubber tube fitting closely over the third finger and having between it and the end of the finger an air space delicately connected with a Marey drum.

The general fall in the plethysmographic tracing caused by the diminution in size of the extremity indicates an increased blood-pressure due to a peripheral vaso-constrictor influence, accompanying the increased heart-beat. This result accords with Foster's[14] statement that although a certain amount of increased blood-pressure is due to increased heart action, by far the greatest amount is due to increased peripheral resistance. The tracing marked the greatest contraction of the organ, *i.e.*, the highest blood-pressure, just after the end of the acceleration period. There was then a secondary rise and fall in the tracing similar to the one which Tarchanoff got in his experiments on Salomé.

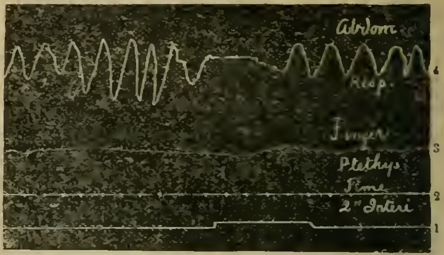

Fig. V.—1. Acceleration period. 2. Chronograph, two-second intervals. 3. Finger plethysmograph, on third finger. 4. Abdominal respiration. To be read from right to left.

Foster[15] also says that high blood-pressure is attended, contrary to expectation, by a slow heart-beat; and Marey states that the rate of the heart-beat, is in inverse proportion to the arterial pressure, a rise in pressure being accompanied by a diminution in the pulse-rate.

This fact is shown in the sphygmographic tracing on Fig. IV., where a slight rise in blood-pressure appears on holding the breath, and there also appears a corresponding decrease in the number of heart-beats until the stimulus for acceleration was put on, as I said while speaking of that figure. Since, then, a decrease in the number of heart-beats appeared with the rise in blood-pressure, it must be admitted that increased blood-pressure could not have been instrumental in bringing about this acceleration of the heart.

It is well to state here, perhaps, that the subject is a healthy, vigorous man who has never had any trouble with his heart. He has a certain amount of control over his ear muscles and platysma myoides. With each effort at acceleration of the heart he feels a sort of tingling reaching from the cerebral region to the heart and then spreading out toward the periphery. The accelerating impulse is not a single continued one but a series of short efforts gradually growing weaker. He could accelerate most when he felt strongest. His accelerating power decreases with every experiment, until finally he feels himself quite unable to produce further acceleration After each experiment the perspiration would stand out in great drops on the palms of his hands, thus showing an intimate relation in the medulla oblongata between the cardiac nerves and the vaso-motor system. A slight headache followed the experiments, if they were somewhat prolonged. The subject is apparently unable to decrease in the least the beat of his heart.

From what I have said and shown to you I have come to the conclusion that the power of this subject to accelerate his heart-beat was not due to the calling up to his mind of any emotions or ideas which had a tendency to change his heart-beat (the word of the subject must of necessity be taken for this, as no experiment can prove it), nor to any movement of the regular voluntary muscles, nor to a change in breathing or blood-pressure, but was due simply and purely to an effort of the will directed upon the regulating mechanism of the heart.[15]

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[13] Archives de Physiologie, p. 21.

[14] Foster's Physiology, Third American Edition, Reichert, 1885, p. 242.

[15] *Loc cit.*, p. 240.

I here append, as a caution to those who are tempted to investigate for themselves this interesting subject, a translation of a letter which Prof. Tarchanoff wrote to the editor of *Die Archives für die Gesammte Physiologie* a short time after the appearance of his article: —

"It was very pleasant for me to learn that my work on the voluntary acceleration of the heart in man has been of such lively interest to you. This peculiar power is indeed remarkable, but unfortunately is very dangerous for those persons who have this gift, as I was unfortunately convinced in the case of Dr. Schlesinger. He could even double voluntarily the number of his heart-beats. But he now suffers from such a severe palpitation of the heart that he can no longer sleep quietly. Since I fear that the experiments made by me with Dr. Schlesinger may have caused these evil effects, I would ask other investigators to exercise the greatest caution in repeating my experiments.

SIMULTANEOUS LIGATURE OF COMMON CAROTID AND AXILLARY FOR ANEURISM OF INNOMINATE.

BY J. COLLINS WARREN, M.D.
REPORTED BY HARDY PHIPPEN,
Senior House-Officer, Massachusetts General Hospital.

G. S., fifty years of age, entered the Massachusetts General Hospital November 6, 1888. All his life he had been in good health, had had no venereal diseases, and had never been a heavy drinker.

Eight months before entrance he noticed, while at work, sharp pains running down the right arm. These increased rapidly in severity, disabling him from work.

Three months later he began to be troubled by a cough, with a bloody expectoration, soon followed by huskiness of the voice.

A prominence appeared in the region of the right clavicle six weeks before admission. This was at first slight, but soon became tender, and increased rapidly in size.

The patient, on admission to Dr. Whittier's ward, was apparently a healthy, well-nourished man. Physical examination showed nothing except a well-marked, rounded prominence extending from just inside of the right sterno-clavicular articulation, four inches outward, and about two inches above and one inch below the clavicle, which crossed the middle of the tumor. All parts of this swelling, especially the upper, were pulsating.

The right vocal cord on examination was seen to be paralyzed. The right pupil was contracted.

The pulsations in the two radial arteries were apparently synchronous and of equal strength. The cardiac area was somewhat enlarged. Treatment by rest, low diet, and iodide of potassium was tried for some time, but in spite of this no improvement followed.

Owing to the rapid increase in the size of the aneurism in spite of medical treatment, it was thought best to interfere by a surgical operation, which was performed by Dr. Warren on the 6th of December. On account of the situation of the swelling, it was thought impossible to tie the subclavian; accordingly an incision was made separating the two divisions of the pectoralis major in order to reach the axillary at its upper end. The pectoralis minor having been drawn down, the vessels were exposed.

A large vessel, supposed to be the axillary artery, was then tied with braided silk. The radial artery, however, continued to beat. Accordingly a second ligature was put on a much larger vessel a short distance higher up, and all pulsation of the radial ceased immediately. The aneurism was now found to be pulsating much less forcibly than before.

A ligature was next placed upon the common carotid, which was pulsating only very feebly.

Pulsation in the aneurism remained about the same as before ligature of the carotid.

Both wounds were dressed antiseptically.

The recovery was uninterrupted, the temperature at no time going above 99.4°.

By the sixth day after the operation the wounds were entirely healed.

A feeble pulse could be felt in the right radial three days after the operation. The aneurism was beating much more vigorously than immediately after the ligature.

In spite of a return to medical treatment all the symptoms rapidly increased, the radial pulse soon becoming as strong as before, and the aneurism becoming much larger.

A distinct independent pulsation in the scar of the axillary incision appeared by the 15th of January.

A month later the prominence was still greater; the pain had become very severe, and was relieved by frequent doses of morphine. The surface soon became reddened, the prominence extending almost to the ear. The swelling in the scar was now much more prominent than ever.

On the 14th of March the aneurism burst near the right ear, with almost immediate death.

At the autopsy it was found that the arch of the aorta was dilated to the size of a lemon, the walls being infiltrated with lime salts and in places thickened and fibrous.

From the anterior wall of the innominate artery, just at its bifurcation, arose an aneurismal sac, nearly as large as the two fists, extending into the cervical region, and lying anteriorly to the subclavian. The opening into this sac was not more than three-fourths of an inch in diameter and sharply defined.

A second independent sac was found communicating with the axillary artery just beyond the clavicle. This was about the size of a lemon. The opening into the vessel was small and was evidently at the point of ligature.

The axillary beyond this point was pervious. The right carotid artery was found collapsed and empty below the ligature. Its walls were slightly adherent to one another, but could be separated by a probe. The ligature was still found upon the wall. The distal portion of the vessel was found occluded by a red thrombus.

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[15] The figures used in this article are reproductions of photographs taken by Dr. H. P. Bowditch from the original tracings.

The clavicle, first rib, and sternum were intimately connected with the wall of the aneurism, with a moderate degree of erosion of all, especially of the sternum.

REMARKS BY DR. WARREN.

The narrow neck of the aneurism situated at the bifurcation of the subclavian and innominate seemed to offer special advantages for the operation of simultaneous ligature of the carotid and subclavian, but the position of the sac beneath the clavicle would have made it impossible to reach the subclavian at the date of the operation even had it been known that this vessel was not involved. The reappearance of pulsation in the radial a few days after the operation was probably due to collateral circulation, the aneurismal dilatation at the point of ligature of the axillary not showing itself until many weeks later. Unfortunately, the carotid was injured in removal. This artery would otherwise have afforded an admirable specimen of the process of repair three months after ligature. The ligature of this vessel did not materially affect the pulsations in the aneurism, as the sac, pressing firmly against that vessel, had already greatly diminished the circulation in it. Although in this operation asepsis had been complete, it is worth noting that a thrombus of considerable size existed in the distal portion of the vessel. The ligature, a silk one, was still to be seen encircling the vessel, although the thread was very friable. The presence or absence of a callous was not noted, but I saw no sign of one at the point of ligature, absorption of the slight callous which probably existed having taken place some time previously.

CASES OF LAPAROTOMY FOR ACCIDENTS OCCURRING IN THE REDUCTION OF HERNIA.[1]

BY A. T. CABOT, A.M., M.D.

In a paper read about a year ago I reported cases illustrating some of the accidents which may attend the return of a strangulated loop of bowel to the abdominal cavity, and pointed out the importance of at once performing laparotomy when serious symptoms follow or persist after the reduction of a hernia.

During the past summer I have had two cases which still further emphasize the importance of this practice, and which I will briefly report.

Case I. Patrick H., aged about sixty, entered the Massachusetts General Hospital with the following history.

The patient had suffered many years with a right femoral hernia which he had always been able to reduce himself. Two days before entrance at the hospital the hernia came down, and his efforts to reduce it that day were unavailing. During that night he had a good deal of pain, and the following day, after several unsuccessful and rather violent attempts, he finally succeeded in returning the hernia to the abdomen. He was at once seized with abdominal pain, much more severe than what he had felt previously, and this persisted up to the time of entrance.

When he arrived at the hospital, twenty-four hours after the reduction of the hernia, he was in a much collapsed condition, with pinched, gray face and anxious expression. He had no severe vomiting, but occasionally gulped up a little bitter fluid. He was suffering much general pain through the abdomen, which was considerably distended, tympanitic, and universally sensitive to pressure. His pulse was rapid, irregular, and thready, and his respirations were forty in the minute. There was no tumor at the site of the old hernia.

The diagnosis made was of rupture of the intestine during efforts at reduction, and a consequent general peritonitis. Laparotomy was advised as a last attempt to save his life. This was agreed to and at once carried out.

The incision was made directly upwards from over the sac on to the abdominal wall. The sac was found empty and the peritoneum was quickly opened up. At once there was an escape of much fluid, containing great clumps and masses of purulent fibrin, but having no fecal or unpleasant odor.

The patient did not bear the ether well, and although but a few minutes had been occupied, he was becoming rapidly more and more collapsed.

Under these circumstances it was thought unwise to prolong the operation by hunting for a perforation, which, from the absence of fecal constituents or odor in the effused fluid, was presumably small.

The abdomen was irrigated with hot water, which washed up several handfuls of clotted and purulent fibrin from the pelvic cavity. A large drainage tube was introduced to the bottom of the pelvis, and the wound was closed.

In spite of every effort to overcome the condition of collapse, the patient did not rally, and died about three hours after the operation.

A partial autopsy was allowed. After a long search a minute perforation was found in a little congested coil of small intestine which lay at the bottom of the pelvis. The purple color of this bit of intestine showed that it was the part which had lain in the hernial sac, and the opening was so placed that the drainage-tube might have been expected to have furnished a sufficient outlet for any intestinal contents subsequently escaping, had the patient rallied from the collapsed state into which he had fallen.

This case is a good illustration of the rapidity with which a fatal issue may follow peritoneal injury and inflammation. The intestinal lesion was of a kind that could have probably been remedied, had the operation been reached at a time when the patient still retained a fair degree of strength. The result shows that in these cases a delay even of a few hours may change a remediable condition into a fatal one.

This patient is also an example of the bad effects of violent and ill-advised efforts at taxis even in a reducible hernia.

Case II. Undescended testicle with left inguinal hernia: reduction *en bloc*; laparotomy; recovery.

Charles R., aged twenty-seven, entered the Massachusetts General Hospital July 17th, 1888, with the following history: —

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[1] Read before the Boston Society for Medical Improvement, March 25, 1889.

The patient had always had an undescended testicle on the left side, the organ having been arrested in its descent just outside of the inguinal ring in the groin. For many years he had also had a hernial protrusion through the same ring, and this had troubled him several times by being for a time irreducible.

On July 14th (three days before entrance) the hernia was down and caused discomfort. It did not go back easily, and was finally reduced with some difficulty under ether.

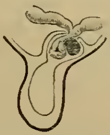
When he recovered from etherization, it was found, however, that his symptoms were rather aggravated than relieved. He still had abdominal pain, especially in the left side; and the vomiting continued persistently and presently became fecal in character.

When he entered the hospital there was nothing to be felt in the abdomen or in the inguinal region, and the left testicle could not be found.

The continuance of symptoms of strangulation made it clear that constriction of the bowels still existed somewhere, and a laparotomy was advised.

This being agreed to an incision was made from over the sac of the hernia, upwards onto the abdomen. On laying open the sac it was found empty, but following it up through the inguinal ring, a dilatation of the upper part of the sac was found inside the abdominal wall; and this contained a purple loop of intestine.

The neck between the upper part of this hour-glass-shaped sac and the peritoneal cavity was formed by a thick band of fibrous tissue which represented the true neck of the sac and which would easily admit the end of the finger. It would have been amply large to allow of the return of the hernia, had it not been blocked by the testicle, which lay across the opening and closed it as by a valve.



The more the intestine was pressed up from below, the more closely did it force the testicle into the ring and close it. On relaxing the parts and pulling down upon the sac so as to draw the testicle away from the orifice, the bowel slipped up quite easily.

A further examination was made of the contents of the abdomen to make sure that no other constriction or injury of the intestine existed, but nothing was found.

In closing the wound, the neck of the sac was drawn together by encircling stitches for a distance of an inch and a half to two inches, and care was taken that the uppermost stitches should be well within the abdomen, so that no depression should be left on the peritoneal side of the ring.

The patient was entirely relieved of his symptoms and made a rapid and good recovery, leaving the hospital well on August 8th, twenty-two days from the time of entrance.

This man was heard from in February, 1889 (six months after the operation), and he then wrote that although he had worn no truss, there had been no return of the hernia. He says in this letter, "I sometimes feel a smarting, burning feeling if I work very hard or lift anything very heavy; this is all."

In this case we had a rather rare complication of hernia, and a good example of the difficulty that an undescended testis may cause. It adds one to the many cases illustrative of the importance of a prompt laparotomy when symptoms of strangulation persist after the seemingly complete reduction of a hernia.

One point noticed in this last case may be of practical importance in guiding us to the proper application of taxis under similar conditions.

As has been described, the testicle lay against the opening through the neck of the sac, and closed it as by a ball valve. The more the pressure from below, the more complete was this closure of the ring, so that the effort to push the bowel up made the obstacle even greater. When, on the other hand, the part of the sac which lay in the scrotum was pulled downwards it drew the testicle, which was attached to the wall of the sac, away from the opening, and the bowel easily slipped up by it.

In a similar case, during taxis, it is quite probable that by pulling forcibly down on the scrotum the testis might be held away from the ring and the return of the hernia thus be rendered possible.

From what was seen in this case, it seems a proper rule that, in a hernia complicated by a testicle retained in the region of the inguinal canal, if strangulation occurs, every effort should be made to draw down the testis by pulling on the lower part of the tunica vaginalis. And after the hernia has been restored to the abdominal cavity, the reduction shall not be considered complete until the testicle has again, by traction on the scrotum, been drawn down to its old resting-place, where it can be distinctly felt. In this way the danger of a reduction *en bloc* with the testis still occluding the neck of the sac will be made less probable, if not wholly avoided.

REDUPLICATIONS OF MUCOUS MEMBRANE IN THE UPPER PORTION OF THE TYMPANIC CAVITY, AND THEIR CLINICAL IMPORTANCE.[1]

BY CLARENCE J. BLAKE, M.D., AND WILLIAM S. BRYANT, M.D.

In a large proportion of cases of suppurative inflammation of the middle ear, especially where there has been much destruction of the membrana tympani, and an opportunity is thereby afforded for a better inspection of the principal sources of the discharge, it will be found that no inconsiderable proportion of the secretion comes from the upper portion of the tympanic cavity, and that often when the affected mucous membrane of the visible portion of the middle ear has become quite healed the disease in the upper part of the tympanum is tediously prolonged. The reasons for this are to be found in the irregularity of the contour of the surfaces, including the upper portions of the ossicula, covered by the lining mucous membrane thus affording a considerable superficial area of secreting surface; the great vascularity of the soft tissues, supplied in part directly from the carotid; the opportunity afforded for increased irritation by accumulation of inflammatory products in the irregularities of surface already mentioned; and, furthermore, the occasional occurrence of supernumerary bands and folds of mucous membrane which both increase the secreting surface and favor retention of the secretion. The occurrence of such bands as remnants of embryonic tissue has been well recognized and is mentioned by several writers, and the general direction of these bands or folds is spoken of, among others, by Politzer, Gruber, and von Troltsch.— Politzer also describing the presence of a cellular structure between the head of the malleus and incus and the corresponding outer wall of the tympanum.

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[1] Read before the Boston Society for Medical Improvement, March 25, 1889.

The examinations of temporal bones made by Dr. Bryant with much care and patience had reference particularly to the clinical bearing of the subject, as explaining both the tedious duration of suppurative processes in the upper portion of the tympanum and the occurrence of cases of perforation of the membrane of Shrapnell, giving exit into the external canal of a discharge which thus makes its way out without passing through the membrana tympani proper at all, the lower portion of the tympanic cavity remaining intact.

In a previous series of examinations of temporal bones having normal middle ears, the writer found reduplications of mucous membranes other than those anatomically recognized as constant, in between 60 and 70 per cent.; and subsequent investigations which it is hoped to make will probably confirm the higher percentage observed by Dr. Bryant, and which is due, in the opinion of the writer, to greater care in observation and enumeration of the minor folds which are most common in the posterior and superior-exterior portions of the tympanum.

A general consideration of these reduplications, of the fact that when most complete they form a dividing line horizontally across the tympanum at about the level of the superior periphery of the membrana tympani, with a dip toward the superior surface of the short process of the malleus and membrane of Shrapnell, and that the considerable swelling of the mucous membrane accompanying inflammation tends to close any openings from above downward between contiguous folds, is a sufficient explanation to any investigator of the comparatively rare cases of spontaneous establishment of drainage through the membrane of Shrapnell and of one reason for the persistency of retention of secretions in the upper portion of the tympanum.

The examination of twenty-six temporal bones proves that the mucous membrane lining the tympanic cavity forms reduplications, which could readily prevent in it the free circulation of fluids. The principal folds tend to divide the tympanum *horizontally* at about the level of the tensor tympani tendon and the short process of the incus; and *vertically* between the ossicula and the tegmen tympani.

The horizontal folds are usually two, sometimes three, in number. One stretches from the anterior border of the tensor tympani tendon forwards and outwards, attaching itself to the anterior ligament of the malleus, and to the anterior wall of the tympanum just above the entrance to the Eustachian tube. Another fold covers over the space between the external ligament of the malleus, the posterior ligament of the incus, the incus, and the external tympanic wall. The least common horizontal fold stretches between the long and the short processes of the incus, the posterior crus of the stapes, and the inner wall of the tympanum.

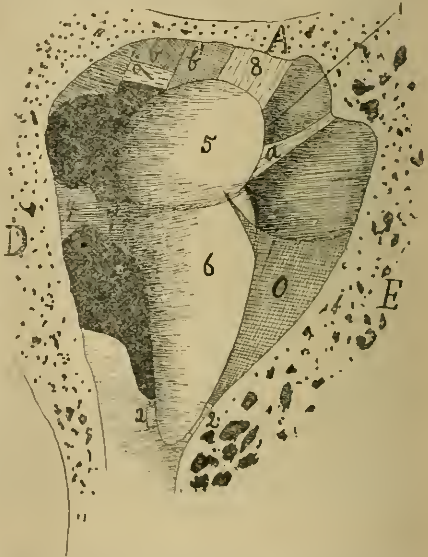

Fig. 1 is the tympanum of a normal adult. The tegmen and part of the walls have been removed. The mucous reduplications are indicated by crossed shading.

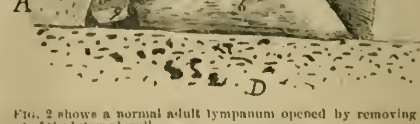

Fig. 2 shows a normal adult tympanum opened by removing a part of the internal wall.

Explanation of Figures.

1, Shrapnell's membrane.
2, Posterior ligament of incus.
3, Suspensory ligament of malleus.
4, Stapes.
5, Head of malleus.
6, Incus.
7, Long process of incus.

8, Anterior ligament of malleus.
9, Tendon of musculus tensor tympani.
a, External ligament of malleus.
b, Horizontal mucous fold anterior to tensor tympani tendon.
b^1, A part of the same on a higher plane.
d, Oblique fold of mucous membrane stretching between long and short processes of incus, posterior crus of stapes, and internal wall of tympanum.
A, Anterior wall of tympanum.
B, Horizontal mucous fold joining extremities of the forked vertical fold running outward from suspensory ligament of malleus.
C, Vertical fold of mucous membrane stretching between anterior and suspensory ligaments of the malleus.
C^1, A more external part of the same.
D, Internal wall of tympanum.
E, External wall of tympanum.
H, Vertical mucous fold running from suspensory ligament to external ligament of the malleus.
I, Mucous fold running obliquely from suspensory ligament to join the horizontal fold between the incus and external wall.
O, Horizontal mucous fold stretching between incus and external wall.
T, Tegmen tympanum.
f, A falciform reduplication of mucous membrane posterior to suspensory ligament.

The vertical folds may be considered as two in number, both suspended from the tegmen tympani; one stretching between the anterior and the suspensory ligament and the other between the suspensory and the external ligament of the malleus. The latter fold is often V-shaped, one arm joining the external ligament, the other arm going obliquely outwards and downwards, joining a horizontal fold near the base of the short process of the incus.

Attached to the posterior side of the suspensory ligament is sometimes found a falciform fold, stretching from the articulation of the malleus and incus, backwards and upwards onto the tegmen tympani.

The space above the membrane of Shrapnell is especially rich in mucous folds. These fill the spaces between the ligaments of the malleus in such a way that there is usually enclosed an irregularly pyramidal space with its apex at the suspensory ligament of the malleus. This space is bounded *below* by the malleus, Shrapnell's membrane, and the external wall of the tympanum; *above*, by the tegmen tympani; *externally* by the external wall of the tympanum; *internally* by the head and the anterior ligament of the malleus and by the vertical fold of membrane stretching between the anterior and suspensory ligaments of the malleus; *posteriorly* by the external ligament of the malleus and the vertical mucous fold between the suspensory ligament and the external ligament of the malleus. This space, as has been said, is lined with mucous membrane and is often crossed by mucous folds. At the lowest point of the space the membrane of Shrapnell meets the short process of the malleus, so that any fluid in this space must gravitate onto the lower part of Shrapnell's membrane.

The horizontal mucous folds were found in some cases to cut off communication between the segment of the tympanum above and that below them, except in the space between the tensor tympani tendon and the stapes.

Besides the more constant mucous folds there were many bands and fibres of mucous membrane found irregularly in nearly all parts of the tympanum. The most conspicuous of these was a fold stretching between the long and the short process of the incus, the posterior crus of the stapes, and the internal wall of the tympanum. In the cases where the folds were not perfect, their normal position was usually indicated by threads or bands more or less closing the spaces.

Out of twenty-six temporal bones examined, sixteen were of normal adults and six of new-born infants. The four remaining were pathological, two being cases of dry perforation, and two of thickened membranæ. Comparing the results of the examination we find that out of the whole number 85 per cent. had the space above Shrapnell's membrane wholly enclosed by mucous folds, and 77 per cent. had the upper part of the tympanum partially cut off from the lower by mucous folds which stretched at least half across the cavity.

REPORT ON DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D.,
Assistant Professor of Diseases of Children, Harvard University, Physician to the Children's Hospital.

THE EARLIEST SYMPTOMS OF HEREDITARY SYPHILIS.[1]

The recognition of the earliest symptoms of congenital syphilis in small children, in default of any history pointing in that direction, is often surrounded with great difficulty, for they may appear as pemphigus, maculæ, papulæ, rhagades of the mouth and anus, excoriations and ulcers of the skin, rhinitis, laryngitis, gingivitis, ulcers of the tongue, pseudo-paralysis of the extremities from osteochondritis, etc. The difficulty is complicated by the combination of various symptoms which is not infrequent, different portions of the skin showing entirely different phenomena. The fact that miscarriages so frequently result from the marriage of syphilitics throws light upon the fact that many infants who are the subjects of congenital syphilis are thin and atrophic; in fact, the author states that he has come to consider this atrophic condition as a most important suggestion that syphilis is present, and an indication that the child should not nurse any one but its mother. If syphilis be latent the symptoms are likely to appear in the course of the first two months. In syphilitic infants it is noticeable that the navel stump, instead of dropping off on the fourth or fifth day, as is normal, delays until the second or third week, exposing them to umbilical inflammations and septic infection. Icterus of the new-born is greatly prolonged in such infants; the skin is undeveloped and tender, as are also its underlying connective tissue and sweat glands. Tissue-changes are sluggishly accomplished, oxidation is defective, the tissues in general are poorly nourished and deficient in vitality, and hence it is not surprising that the external symptoms of syphilis do not appear as early as in those children who are more mature and in better physical condition. Zeisel, Kasowitz, and the author have found by the study of large numbers of cases that the external phenomena appear in more than 50 per cent. during the first month. In 58 per cent. of the author's cases rhinitis appeared as the first symptom of syphilis and pemphigus in 25 per cent. Should a new-born infant suffer from nose-bleed it would be very suggestive of hereditary syphilis or diphtheritic rhinitis. These two diseases may be readily confounded, and are not uncommon in foundling asylums.

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[1] Jahrb. f. K., xxvii. 4; Archives, Pediat. December, 1888. Miller.

The diagnosis will be clear enough within one or two days if diphtheria be present. If the nose be sunken in, no other suspicious symptoms are necessary to make a diagnosis of syphilis. If pemphigus be of syphilitic origin in a given case it is prone to affect the skin of the palmar and plantar surfaces and the fingers and toes; it also attacks the folds in the groins, the axillæ, and the neck. Syphilitic pemphigus is a far more dangerous condition than the ordinary variety, and may speedily end fatally, the removal of large portions of skin and subsequent ulceration producing fatal exhaustion.

Syphilitic pneumonia in premature infants is of no diagnostic value in determining syphilis, and is differentiated with great difficulty from other forms of pneumonia. Simple desquamation of the skin, so common to all new-born infants, and even if rather free, cannot by itself be taken as an evidence of syphilis. The desquamation of epithelium upon mucous surfaces is also a normal process, but may develop into the formation of fissures, ulcers, erosions, and aphthous formations. If syphilis is present such conditions are important means of diagnosis, but they often exist apart from syphilis. Ulcers of the mouth, the gums, the palate, fissures of the nose, the lips, and the anus are well-known conditions with and without syphilis. Laryngitis is a symptom in 17 per cent. of cases of syphilis, but in very many instances it is only the result of a cold. The author does not lay so much stress upon craniotabes as a symptom of syphilis as does Parrot. He thinks that it is only an evidence of poor nutrition, and that the bone will quickly harden if the child is properly fed; in fact, in his opinion it is more frequently an evidence of rachitis than of syphilis. Disease of the lymphatic glands has not the same significance in hereditary that it has in acquired syphilis. In 29 per cent. of the author's cases there were, however, swellings of the glands.

This was considered the result of local irritation rather than one of the effects of the poison which had permeated the system. The maculo-papular eruption was observed to be the most frequent symptom of congenital syphilis. It appeared either upon the skin or the mucous membrane in 74 per cent. of the author's cases. It was the first symptom in 24 per cent. The lower extremities were most frequently involved, though it sometimes appeared first upon the hands, the fingers, and the face. It came in single spots far from each other, the color varying between a cherry-red and a dark violet. It is to be distinguished from the exanthema of rubeola by its darker color and the smaller number of spots, also by its frequent appearance upon the feet and not upon the face. There is also an absence of fever and of redness of the pharynx and hard palate, also of the other distinctive symptoms of measles. An erythema is suggestive of syphilis only in cases in which true syphilitic papules begin to appear upon it. The author agrees with Parrot that the vesicular eczematous form of congenital syphilis is not seen in small children, though simple eczema may occur among syphilitic children. Pustular syphilides were never seen, but in a few cases they were met with in children two or three months old.

Onychia and paronychia were seen in 23 per cent. of the cases, and in 4 per cent. they were the earliest symptoms; other affections of the finger-nails were of rarer occurrence.

There is nothing peculiar about the expression of the face in syphilitic infants, a pinched and wan appearance being common to all who are premature and atrophic. Pseudo-paralysis of the extremities is extremely characteristic of congenital syphilis, and in the absence of other symptoms may be considered diagnostic; it is of rare occurrence, however, and was seen only in 7 per cent. of the author's cases, the upper extremities being affected more frequently than the lower. Cerebro-spinal paralysis is yet more rare, and when it occurs no voluntary motion is possible, while in pseudo-paralysis motion is possible, but is always attended with pain in the ends of the bones or the joints.

CASE OF CEREBRAL HÆMORRHAGE.[2]

A child aged nineteen months came under observation for subcutaneous nævus. This was incised, and two days later she contracted scarlet fever. During convalescence the child was taken with high temperature and symptoms of peritonitis. She died two weeks later. A post-mortem examination showed no trace of peritonitis. Venous congestion was found in the anterior third of the under and outer surface of the left side of the brain, and a firm clot, the size of a walnut, in the temporo-sphenoidal lobe. The limitation of the clot was distinct and the brain substance around it was firm. It was apparently of recent origin. The left lateral sinus was filled in its posterior two-thirds by an organized clot obviously of some date. The symptoms in this case were entirely misleading, and apart from convulsions on the day of death, pointed strongly to peritonitis.

RECURRENT FIBRO-SARCOMA OF THE THIGH.[3]

The following case reported by Hyde is of interest, as the patient recovered. A boy one and a half years old was noticed to have a tumor growing on the posterior surface of the thigh. This was removed, and was found to be not adherent to the bone. Soon after the wound had healed, a fresh tumor appeared in the same situation, and continued to grow for five years. There was no pain but there was considerable inconvenience in walking. The left hip could not be fully flexed, but could be extended. The left knee could only be flexed to a right angle, as it then came in contact with the lower edge of the tumor. The tumor was smooth and tense. The hamstring muscles, sartorius and rectus could easily be traced over the surface. The limb was amputated through the trochanters in such a way that the angles of the wound occupied the same position as in an amputation by transfixion at the hip-joint. One year after the operation there was no sign of recurrence. Upon examination it was found that the muscles, vessels, and great sciatic nerve were spread out over the surface of the tumor. The tumor was nowhere adherent to the bone. On section the growth was found to consist of distinct lobes, the lobes being again divided by fibrous trabeculæ which branched in all directions, the spaces between them being occupied by a greasy-looking yellow material. Microscopically it was found to consist mainly of masses of fat separated from each other by strands of connective tissue containing a large number of small spindle-shaped cells. The tumor weighed twelve and a half pounds, being just over one-third of the whole weight of the patient.

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[2] Murray Lancet, September 1, 1888. Archiv. Pediat. May, 1889.

[3] Lancet, October 26, 1888, Archiv Pediat., May, 1889.

PARACENTESIS IN INTERNAL HYDROCEPHALUS.[4]

The case which the author reports is that of a boy five years of age; height, three feet one and a half inches; weight forty-three pounds; family history good. The boy was healthy until he was three months old, when without any known cause he was seized with convulsions during sleep. These attacks occurred with great frequency for nine months. They then ceased and have not returned. Three months after their beginning his head enlarged and became pear-shaped, the greater diameters corresponding with the biparietal parieto-occipital planes. There was no separation of the cranial bones. When first seen, in October, 1888, the patient was evidently in an imbecile condition: there was little or no mental development, he could not talk, and was totally blind, but his other senses were not affected; he had never walked or stood alone, but could easily move his body and extremities; the bowel and bladder sphincters were not controlled; he was irritable, restless, and slept irregularly; he could take only liquid food, given from a spoon. He was fairly developed and well nourished, but always of an ashy pallor. There was frequent rotatory movement of the head with slight retraction, and grinding of the teeth; pulse 120 to 140; temperature not taken. Head measure from glabella to iniad twelve and a half inches; over biauricular line thirteen and three-fourths inches; around fronto-occipital line twenty inches. The anterior fontanelle closed at eighteen months and the sutures were ossified. The eyes were not examined. A diagnosis of ventricular effusion was ventured upon. As every treatment had been faithfully tried and the parents desired surgical interference, the author did the following operation December 4, 1888. Strict antisepsis was observed throughout. Over the coronal suture, one and a half inches to the right of the median line, a small flap of the scalp and periosteum was reflected; with a trephine, about one centimetre in diameter, a button of bone was removed, which was slightly thicker than normal. The dura mater looked healthy, and pulsated. A delicate trocar was passed through the dura mater and brain substance, downward, backward, and inward, to the depth of two and a half inches, so as to pierce the central cavity of the right lateral ventricle. No reflex movements of any kind occurred. Removing the trocar, a clear limpid fluid began to ooze drop by drop from the canula. About an ounce was evacuated, and, as the canula was removed and its internal orifice reached the subdural space, the fluid again flowed, showing its presence in excess in this space also. Its analysis showed a close resemblance to the cerebro-spinal fluid. An antiseptic dressing was applied; for several days the same fluid oozed from the dural puncture and saturated the dressings; from four to eight ounces were thus discharged. The case progressed satisfactorily, the pulse never exceeded 140, and temperature 101.8°. In two or three days the child was up and stood alone, and in three weeks walked alone. The sight was partially restored, he slept better, took solid food, was less irritable, and the rotary movements of the head ceased. Improvement continued until the latter part of January, when, after some slight ailment, he gradually lost the power to walk. Thinking that fluid was reaccumulating, another operation was appointed for February 8, but on February 5 improvement again occurred and it was postponed.

The author holds that this operation is of importance in the case of imbecile children, the beginning of whose trouble dates back to some acute or subacute cerebral trouble, as simple meningitis or convulsions, or perhaps slight traumatism, but whose cases have been considered incurable. Such cases fill our institutions, and it is probable that this excess of fluid in the cerebral ventricles or subdural spaces, or both, may not only have caused, but perpetuated, these undeveloped brains and minds. The author insists that this operation should be done in all such cases, but that both the ventricles and subdural space should be evacuated, as, if only one is evacuated, the pressure from the other will destroy the brain substance.

THE CAUSES OF IRREGULAR POSITIONS OF THE TEETH.[5]

The author has studied one hundred and forty-nine cases of jaws in which the teeth were irregularly set and some additional cases in which the jaw showed marked rachitic changes without irregular setting of the teeth. In sixteen cases the cause of the irregularity was persistent milk teeth, in four cases there were superfluous teeth, in thirty-one there was irregular arrangement for which no cause could be given, in ninety-eight the peculiar changes of rachitis were present, and in all of them the teeth did not have sufficient room for proper development. The teeth which were most commonly out of place were the two large incisors, which in consequence of lengthening and lateral compression of the jaw, were projected strongly forward and inward.

The most marked evidence of rachitis consisted in a bending inward of the upper jaw near the second small molar; the evidence which was next in frequency was a high and narrow palate. In fourteen of the seventy-five cases in which there were undoubted indications of rachitic changes in the jaws, rachitic changes in the teeth were also present. In the twenty-three other cases, the bending of the jaw and the deformity of the palate were not sufficiently pronounced to serve as diagnostic symptoms.

On the lower jaw the most frequent change was that which gave it a short and polygonal appearance. In thirty cases the lower jaw was bent inward at the second bicuspid.

It would seem that about half the irregularities in the disposition of the teeth were due to rachitic changes.

— The trustees of the Maine State General Hospital at Portland have voted to erect new buildings costing $100,000. They will include a pavilion for patients, and a residence for the physician and superintendent.

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[4] Ayres. Med. Register, March 23, 1889; Archiv Pediat., May, 1889.

[5] Engelsen. Jahrb. f. K., xxviii. 2; Archiv Pediat., December, 1888.

Clinical Department.

A CASE OF POISONING BY THE OIL OF HEDEOMA (PENNYROYAL).

BY U. O. B. WINGATE, M.D., MILWAUKEE.

At about noon, November 20, 1888, I was hastily summoned to see Mrs. ——, who, the messenger stated, was "in a fit."

I found a woman about twenty years of age lying on a lounge and wholly unconscious; pulse small; respiration very quiet; extremities cold; pupils moderately dilated; no froth in the mouth; could not be aroused. A neighbor present stated that the patient had experienced some domestic trouble that morning, and on hearing a noise she came in and found the patient on the floor, where she had apparently fallen from a chair. No one was in the room at the time she fell. This was all the history I was able to obtain, except that the patient was supposed to be about four months advanced in her first pregnancy.

I was at a loss to account for this condition, but suspecting hysterical causes on account of the history of domestic trouble, I applied digital pressure over the superorbital nerves. In about a minute convulsive movements of the face began, quickly followed by a general tremor over the entire body, resembling a severe chill; then the body gradually and methodically assumed the position of extreme opisthotonos, the patient resting entirely on the occiput and heels. The arms, hands, and fingers became strongly flexed, and the whole body was in a rigid tonic convulsion. In about a minute the muscles relaxed, the relaxation lasting about two minutes, when another convulsion of the same character came on. By this time I had administered gr. $\frac{1}{4}$ morphia sulph. and gr. $\frac{1}{120}$ atropia sulph. subcutaneously. The patient had no more convulsions, but soon vomited and began to answer questions. She then informed me that at 10 A.M. that morning she had taken a teaspoonful of the oil of pennyroyal and a half-teaspoonful of the fluid ext. ergot at a single dose, with the object of procuring an abortion. She was put to bed, heaters applied, and given as much milk as she could be made to take. She talked incoherently for a few hours, complained of great lameness in the muscles of the neck and back, and also of the flexors of the arms. The next morning was sitting up; had some pain in the back, but no uterine action was provoked. Three months later I saw the patient, and she was well advanced in her pregnancy.

As spoken of in the books, this drug is useful in flatulent colic, and also is much used as a domestic remedy in amenorrhœa. There is also a nostrum manufactured and much advertised as "a cure for all female irregularities," known as "Chrichester's English Pennyroyal Pills." In an extended search I have been unable to find any reports of cases where this drug has been resorted to for criminal purposes, or where its toxic effects have been observed.

It may be of some practical importance to note the fact that toxic symptoms did not appear until about one and a half hours after the drug was taken.

This slow action is also true of other oils of this character, especially of the oil of tansy.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

Meeting of March 25, 1889. Dr. W. L. Richardson, President, in the chair.

Dr. J. C. Warren showed a specimen of cancer of the lip, removed from a man of over 85 years of age. The patient, notwithstanding his age, had made a very rapid and excellent recovery.

Dr. Warren also showed an aneurism of the innominate which he had formerly operated on by simultaneous ligature of the common carotid and axillary arteries.[1]

Dr. John Homans showed a specimen of intrauterine fibroid measuring 3½x3x3¾ inches and weighing about two pounds. It was removed *per vaginam* by enucleation from the interior of the uterus. It was necessary to incise the os and neck of the uterus in three places very freely. The process was very difficult and tedious, requiring one and a half hours. Only about one-sixth of the surface of the tumor was unattached to the uterus. The operation seemed necessary on account of hæmorrhage. The patient's age was forty-two years. She has made a perfect recovery.

CRUSH OF THE THIGH.

Dr. Homans showed a leg amputated above the knee on account of severe injury. The patient was working about a fly-wheel which revolved through an opening in the floor. The leg was caught between the spokes of the wheel and the floor. The crushing was so severe that amputation seemed necessary at the junction of the middle and lower thirds.

Dr. Homans also showed a number of large urethral calculi, which he had removed from a man who had suffered from their presence in the urethra for a number of years.

Dr. A. T. Cabot showed specimens from a tuberculous ankle-joint.

Drs. C. J. Blake and Wm. S. Bryant contributed

REDUPLICATIONS OF MUCOUS MEMBRANE IN THE TYMPANIC CAVITY: THEIR FREQUENCY AND CLINICAL IMPORTANCE.[2]

Dr. J. Green said he certainly could add nothing to the interesting and thorough investigations of the writers. The subject had a very practical bearing, for on account of the thin roof of the tympanum and the liability to caries, the disease was not infrequently followed by fatal meningitis, as had occurred several times in his own experience.

In the proceedings of this society, published in March, 1874, he had called attention to the peculiar obstinacy and danger of otorrhœas associated with perforations of Shrapnell's membrane, which he referred at that time to the retention of pus "among the bones, ligaments and bands which are crowded together in this small space." More recent investigations, of which the paper to-night is one of the most thorough, have demonstrated that the so-called bands are many of them reduplications of mucous membrane; but since, as has been said, they are probably the remains of an imperfect retrogression of the fœtal tympanic cushion their existence and situation will always be more or less accidental.

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[1] See page 529 of this Journal.

[2] See page 531 of this Journal.

The retention and decomposition of the inflammatory products is the great practical point in treatment; and incisions and the tympanic syringe, with cleansing, are the main points to be attended to.

Dr. A. T. Cabot read a paper entitled

CASES OF LAPAROTOMY FOR ACCIDENTS OCCURRING IN THE REDUCTION OF HERNIA.[3]

THE AMERICAN SURGICAL ASSOCIATION.

Annual Meeting held in the new Army Medical Museum, Washington, May 14, 15, and 16, 1889.

TUESDAY AFTERNOON SESSION, — *Continued.*

Dr. M. H. Richardson, of Boston, read a paper on

THE SURGICAL TREATMENT OF GANGRENOUS HERNIA.

The principal question discussed was the relative advantage of immediate excision and suture of the bowel, and the formation of an artificial anus with subsequent closure. The views of various authorities were first quoted. The author then briefly reported the cases coming under his own observation.

Case I. A young woman with right femoral hernia, strangulated for one week. Bowel was found gangrenous, and excised. Death from shock the next day.

Case II. Woman, æt. sixty-five years, left inguinal hernia. On opening the sac the bowel was found strangulated and dark in color. The hernia was reduced, but the symptoms of obstruction continued, and five days later the sac was opened and the intestine found strangulated by a band within the ring. The bowel was drawn out, the strangulated portion excised, and the ends sutured. The patient died of shock.

Case III. Woman, æt. forty-two years. There was a large umbilical hernia, with gangrenous intestine. The sac was filled with fecal matter. The constriction was found and the bowel drawn out and excised beyond the constriction, and the ends united. This patient recovered perfectly and has remained well.

Case IV. A woman with enormous umbilical hernia, with strangulation and gangrene. The fecal abscess opened by natural processes and the woman has been in perfect health since, with the exception of the artificial anus. This will be operated on next week.

In the two cases of excision the time required for the passage of the sutures was twenty minutes; the whole operation did not exceed one hour. The longer the operation the more are the chances reduced.

Reference was then made to the use of the bone plates of Senn and the catgut rings of Abbe. These devices may do more in these cases than anything else. Every case must be decided on its merits. The danger to life of resection in suitable cases is probably not greater than the danger of artificial anus with the dangers attending the subsequent closure of the same. The danger of the latter operation is especially great where the opening is near the stomach. Artificial anus is also objectionable on account of the excoriation of skin which attends it and also the risk of giving way of the sutures.

The author concluded as follows: It seems to be the general opinion of surgeons everywhere that under some circumstances excision and suture are justifiable. It seems to me that the primary operation should only be done where all the conditions are favorable. It is pre-eminently a hospital operation. Every appliance and preparation should be ready for its most perfect performance. It is not an operation to be recommended to the general practitioner or to the unqualified operator. It depends for success more often upon rapid and skilful execution than almost any other operation.

There is no doubt that in some cases this procedure is imperative, where the part necrosed is too high up for intestinal nutrition to be maintained. The difficulty, of course, is to recognize this state of things. Even when it can be demonstrated that the jejunum is gangrenous, excision is not justifiable unless the patient's condition offers some hope, and there is a chance that the relief of the symptoms of obstruction may be followed by sufficient improvement to make a secondary operation possible.

DISCUSSION.

Dr. D. Hayes Agnew, Philadelphia: My experience is too limited to enable me to say much upon the subject. I recall three cases of gangrenous hernia. One was a case of inguinal hernia in which I excised a portion of the bowel. The patient recovered from the immediate effects of the operation and passed out of my hands. Some months afterward he was advised by another surgeon to apply a compress to the external opening so as to compel nature to establish a communication between the two portions of bowel. He did so with fatal results. The second case was one of femoral hernia which had lasted six or seven days. It was laid open and the patient recovered. As the granulations filled the opening, communication took place between the two portions of bowel. The third case was one of umbilical hernia. I opened the sac, excised ten inches of intestine and carefully stitched the ends. The patient died of hæmorrhage at the end of two days. It occurs to me that it would be wiser in such a case to stitch the intestine to the skin and at a subsequent period do this operation of Dr. Abbe.

Dr. William T. Briggs, Nashville: Although I have seen many cases of strangulated hernia, I have seen but three instances of gangrenous intestine. In the first case I opened the abscess and the fecal contents escaped. The patient lived some time but died of inanition. In the second case I attached the bowel to surrounding parts and made an opening into it. The patient died in twenty-four hours. The third case I left entirely to nature, and the patient recovered with an artificial anus

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[3] See page 530 of this Journal.

Dr. P. S. Conner, Cincinnati: I have had three cases of gangrenous hernia and have seen a fourth in the practice of Dr. Dandridge. The operation of intestinal anastomosis is valuable. It can be performed rapidly, it is simple, and establishes the continuity of the intestinal tract more perfectly than any other operation that has been suggested.

Dr. W. F. Peck, Davenport: From my experience, I think that great benefit in the way of prevention would result from educating the subjects of this trouble in regard to the dangers of hernia and the way of reduction.

Dr. J. Ewing Mears, Philadelphia: I have had two cases, one of umbilical hernia in which I made an artificial anus; the other of femoral hernia where I performed resection and returned the intestine to the abdomen. Both resulted fatally inside of forty-eight hours. A surgeon of Vienna has suggested that in these cases the gangrenous intestine be withdrawn from the abdomen and held in place outside by a tampon of iodoform gauze. In this way the intestine can be kept under observation and treated as seems best.

Dr. W. W. Keen, Philadelphia: I think that the introduction of the method of intestinal anastomosis by the bone plates of Senn or the catgut rings of Abbe is a great advance over former methods. The mortality following this method is greatly less than that following union of the ends of the bowel.

Dr. T. A. McGraw, Detroit: I have heard nothing in regard to the pathological condition of the bowel above the seat of stricture. In some cases the bowel is healthy immediately above the point of strangulation, while in others the inflammatory process extends six to ten inches above the point of constriction. This must make a great difference as regards the results of operation.

Dr. A. Vanderveer, Albany: Eleven years ago I saw a case of gangrenous inguinal hernia, but the condition was so bad that nothing was done. The patient died a few hours later. Two years ago I saw a similar case, except that the patient was younger and the collapse not so great, I opened freely and left it to nature. The man recovered with an artificial anus.

Dr. H. H. Mudd, St. Louis: I think that gangrenous hernia is not so rare as seems to be the general impression. I can recall at least seven cases. Three of these cases occurred more than four years ago, and all died. During the last four years I have operated on four cases, excising a portion of bowel, with recovery in one case.

Adjourned.

Wednesday — Morning Session.

J. Collins Warren, M.D., of Boston, read a paper on

THE EARLY DIAGNOSIS OF MORBID GROWTHS.

Reference was first made to the great desirability of some means of making an early diagnosis in cases of possible malignant disease. The attempt to make a microscopical examination of morbid growths before their removal dates back to the earliest period of microscopical histology. The pain and danger of inflammation attending the methods adopted led to their abandonment. Antiseptic surgery, however, now enables us to perform such an operation almost with absolute certainty of absence of inflammation. Local anæsthesia with ether spray or cocaine renders the exploration free from pain. The instrument which the author employs consists of a small canula, sharpened at the end. The calibre of the instrument varies from two to five millimetres. The instrument is used by gently rotating the canula between the fingers. After the instrument has penetrated the tumor to the desired depth, it is withdrawn a short distance, and then entered obliquely so as to cut off the column of tissue. The piece removed may be as large as five mm. in diameter and three cm. in length, or even longer. The fragment can be at once examined by means of freezing microtome or placed in alcohol and hardened. The operation can readily be performed at the physician's office and immediate diagnosis made. Several cases were reported, illustrating the information obtained by the use of the canula. The instrument has been used in over one hundred cases, with little or no discomfort to the patient and with satisfactory results. It has been used in abdominal tumors. It has been used in one or two growths involving the abdominal parietes and peritoneum, but not in deep-seated organs. The object of the author in bringing the results of his observations before the association was to show that modern improvements have made an old and discarded method not only practicable, but a valuable addition to our means of surgical diagnosis.

DISCUSSION.

Dr. F. S. Dennis, New York: I wish to protest against reliance upon this instrument in the diagnosis of malignant disease. I have never found pathologists willing to base a diagnosis of malignant disease upon the shreds of tissue removed by such instruments. More reliance is to be placed upon the clinical features than upon the microscopical appearances. Among these are age, situation of the tumor, the macroscopic appearance, pain, cachexia, lymphatic enlargement, hereditary influence, and, finally the use of the harpoon. While the harpoon or canula is a useful adjuvant, we cannot rely upon it absolutely in making the diagnosis.

Dr. P. S. Conner, Cincinnati: I think that there is nothing more definitely established than the difficulty of relying absolutely upon the microscopical examination in cases of supposed malignant disease. It is a confirmatory testimony of great value. In the instrument presented we have an additional aid to our means of diagnosis. While the points presented by Dr. Dennis are valuable, they do not aid much in the early diagnosis.

Dr. R. A. Kinloch, Charleston, S. C.: It is a well-established surgical principle that all tumors should be removed, so that the early diagnosis is perhaps not so essential. The question arises whether it would not be better to remove the tumor, and make the diagnosis of its nature afterwards.

Dr. W. H. Carmalt, New Haven: In carcinoma and sarcoma the clinical features are to my mind a great deal more important than anything we can obtain from the microscope. Microscopical examination of different parts of the same tumor may present different appearances. Another point in regard to the use of the canula is the danger that the irritation excited by the instrument may convert a benign tumor into a malignant growth.

Dr. M. H. Richardson, Boston: I have seen this instrument used in many cases without bad effect, and the microscopists consider that they derive valuable information from examination of the plugs of tissue removed. We cannot make a correct diagnosis in the earliest stages of malignant disease from the clinical evidence alone, and it seems to me that in the early diagnosis this instrument affords valuable aid.

Dr. L. McLane Tiffany, Baltimore, read a paper on

FREE DIVISION OF THE CAPSULE OF THE KIDNEY FOR THE RELIEF OF NEPHRALGIA.

Four years ago the author had suggested the use of incision of the capsule of the kidney in the treatment of nephralgia. The patient, a woman, æt. forty-nine, white, married, had had gonorrhœa and syphilis. She had had abscess of the pelvis opening by the vagina, the discharge continuing for two years. Three years ago she experienced pain in the right loin, — sudden, severe pain lasting for a moment. It was supposed to be due to passage of a kidney stone. The attacks recurred at irregular intervals, the periods becoming progressively shorter and the pain more intense. No calculi had ever been voided. Blood had been seen at rare intervals. The pain always began in the right loin, midway between the pelvis and the ribs. It then extended towards the middle line of the body, and down to the bladder and groin on the right side. Exertion was apt to induce it. Pressure over the right kidney caused acute pain, but no tumor could be made out. The urine was moderately acid, sp. gr. 1022, contained pus cells and a few red blood disks. There was no rise of temperature during the attacks.

The operation was performed January 12, 1889. The kidney when exposed moved freely during respiration. A deep stellate scar existed in the kidney, two inches from the lower end. No other abnormality was discovered. A sound was passed into the pelvis and a systematic exploration made, but no stone was detected. The capsule was then freely slit open for three inches. The edges of the cut gaped widely. The wound was then closed and an aseptic dressing applied. No urine passed by the lumbar wound. This soon healed, and since the operation, a period of four months, there have been no attacks of nephralgia.

DISCUSSION.

Dr. Theodore A. McGraw, Detroit: Three months ago I operated on a woman on the supposition that there was a renal calculus. None was found, but the capsule was freely slit, and since the operation there has been no return of pain.

Dr. Lange, New York: In one case of severe pain recurring at irregular intervals, I operated with the expectation of finding a stone in the kidney, but none could be detected. I then proceeded in the manner described by the reader. The patient remained free from pain for three or four months. The attacks then reappeared.

Dr. W. W. Keen, Philadelphia: I would like to refer to one source of error in the diagnosis of renal calculi which has not been mentioned. I recently operated on a case of tumor of kidney, in which, when the needle was passed into the substance of the organ, it gave a distinct impression of coming in contact with a stone. The tumor was malignant and so adherent that it could not be removed. Subsequent examination showed that there was no calculus, and that the needle must have come in contact with a calcareons vessel, of which there were several, or a mass of calcareous matter which was present.

Dr. John Homans, Boston: I recently operated in a case in which there was a large swelling in the perineum in a boy of fifteen years. I removed, by perineal section, thirteen stones from the urethra. The urethra would admit my forefinger. There was also a swelling in the loin which did not disappear after the operation. Three weeks later I opened the kidney through the right loin. I found a considerable quantity of pus, but could detect no stone, although I am not sure that a stone may not be present.

J. M. Barton, A.M., M.D., Philadelphia, read a paper on

DIGITAL DIVULSION OF THE PYLORUS FOR CICATRICIAL STENOSIS.

Digital divulsion of the pylorus for cicatricial stenosis, as first practised by Prof. Loreta, of Bologna, Italy, in 1882, has scarcely received the attention which I think it deserves, anywhere except in Italy.

The mortality from the twenty-five operations which I have succeeded in collecting is not great, when we consider that every successful case is a patient rescued from certain, and by no means distant, death, and this mortality is already decreasing.

The cases in which the operation would be of service are not so very rare. When searching the journals for records of such operations, I found the reports of the presentation of many specimens of cicatricial stenosis of the pylorus to various pathological societies. My own experience has been limited to two operations. Even the first, though it proved fatal on the fourth day, encouraged me to operate again, as I was fully satisfied that, had it been performed earlier, when the patient was stronger, there was no reason why it should not have been successful.

My second case has the following history: Mrs. G., aged 48 years, a patient of Dr. Adams, of Vineland, N. J., was first seen by me at her home near Vineland, in December, 1888. For convenience of study and operation, I admitted her to Jefferson College Hospital in January, 1889. During 1884, 1885, and 1886 she had suffered from gastric ulcer; she had pain and vomiting immediately after eating, the vomiting occurring as often as six times in the twenty-four hours; she lost greatly in weight and had two severe hæmorrhages. In 1887 all of the symptoms left her, and for the greater part of the year she enjoyed excellent health, weighing in January, 1888, 143 pounds, which was more than she had ever weighed in all her life. During 1888 she became very ill with symptoms of pyloric obstruction and lost flesh rapidly, weighing after her admission to the hospital (January, 1889) only 93½ pounds. She then vomited but once in twenty-four or forty-eight hours. This occurred when she lay down at night, and was not accompanied by nausea. It was usually from one and a half to two quarts in quantity, and measured nearly, and sometimes quite, as much as all the nourishment taken since the preceding act of vomiting twenty-four hours before. Many articles taken during the day could be recognized; indeed she stated that she had occasionally been able to recognize articles eaten as long as two weeks before. As she took her meals she felt that the stomach was becoming more and more distended, and when she lay down at night gravity brought the contents of her stomach into her throat, and they were then vomited. Her bowels were obstinately constipated, acting only once in twelve or fourteen days, and then only after frequently repeated large injections; purgatives administered by the mouth producing no effect. She had lately been able to occasionally feel a small tumor about the size of a hazel nut, two inches to the right of the umbilicus and situated quite deeply. Her stomach was greatly enlarged: distended by the carbonic acid gas developed from half of a soda powder, it reached as low as the umbilicus and as far as the small tumor, though we could not say that the tumor was connected with the stomach.

The vomited matters separated themselves into the usual three layers, the middle one being quite clear. They were nearly free from undigested food and not offensive; free hydrochloric acid, though searched for, was not found.

The operation was performed in the presence of the class of Jefferson Medical College, February 16th, 1889. The surface of the abdomen had been prepared the day before, the mercurial dressings being still on when the patient was brought into the amphitheatre. Her stomach had been washed out on the morning of operation with a solution of biborate of soda. This had been repeated until the fluid returned quite clear. Chloroform was used as the anaesthetic in preference to ether, as being less apt to be followed by vomiting. The hands and instruments having been prepared with antiseptic solutions, I made a median incision through the skin, about four inches long, terminating at the umbilicus. The peritoneal incision, however, was only three inches in length. There was but little bleeding, and it was readily controlled by clamp forceps.

The dilated stomach was found directly beneath the incision. The juncture of the stomach and duodenum, even from the outside, was markedly contracted and irregular on its surface. There were no adhesions and there was no tumor. The tumor was found to be a hard scyballous mass in the ascending colon, which also contained quite a number of smaller masses of hardened faeces. As the wall of the stomach, three inches from the pylorus, felt quite healthy, I folded it transversely midway between the greater and lesser curvatures, and with a pair of sharp scissors made an incision between one and a half and two inches in length. There was no bleeding requiring attention. I introduced my index finger through this incision and felt the pylorus contracted to about the size of a No. 10 French catheter. Its margins were quite hard and fibrous. As the finger would not enter, the blades of a small uterine dilator were guided by the finger into the contracted pylorus, which was then readily dilated until it admitted the index finger. With the aid of a pair of œsophageal forceps it was still further dilated, until both the index and middle fingers were admitted. The two fingers were then separated about half an inch, when I ceased, feeling that further effort would probably rupture the mucous membrane. This dilatation gave to the pylorus a circumference of four and one half inches.

The mucous membrane of the stomach at the point of incision was brought together by a continuous silk suture, and the serous coat by a continuous Lembert suture, also of fine silk, carried in an ordinary sewing needle. This suture was introduced deeply into the muscular coat in order to obtain a firm hold; even then it tore out at one or two points, requiring an interrupted suture to be used at those places. When the finger was first introduced into the stomach it caused some retching, forcing most of the stomach out of the wound, where it was kept during the subsequent manipulations. After the wound in the stomach was closed, the organ was carefully sponged and restored to the abdominal cavity. The abdominal wound was then closed and dressed in the usual manner.

The patient vomited about four ounces of blood half an hour after the operation, but there has been no nausea and no vomiting since. She was nourished exclusively by the rectum until the fourth day. From that time until the fourteenth day she was fed upon peptonized milk and animal broths. After the second day she took from forty-eight to sixty ounces of liquid nourishment in the twenty-four hours. Some solid food was given on the tenth day, and after the fifteenth day she was fed upon a carefully selected solid diet. On the thirtieth day after operation she was able to eat eggs, mutton chops, oysters, beef, chicken, lamb, potatoes, cream toast, bread and butter, milk, and coffee. Her temperature has never been over 99° F., nor under 98° F. since the operation. Her bowels act naturally every day. The abdominal stitches were removed on the ninth day. On February 8th, before the operation, she weighed 93½ pounds. March 25th she weighed 110 pounds, April 15th 118 pounds, and April 27th 122 pounds. She was able to leave the hospital April 10th. She had no pain at any time and required no anodynes.

I have succeeded in collecting 25 published operations. Many of these are by Prof. Loreta. I had hoped to have obtained the results in all his cases, but Dr. Peruzzi, his chief assistant, replies to a letter of inquiry, that the Professor has performed in all about thirty operations, and that at least six more have been performed by other Italian surgeons. They were all successful when the diagnosis was correct. This would make the total number of operations about 43. The 25 operations included in my list were performed on 24 patients, one patient having been operated on twice successfully by Prof. Loreta. From the 25 operations there were 15 recoveries and 10 deaths, making a mortality rate of 40%. Of the ten deaths, six were due to shock, two to hæmorrhage, one to tetanus, and one to suppression of urine. The large mortality from shock in an abdominal section performed in from half an hour to an hour is probably due to the fact that in this, as in most new surgical procedures, the operation is postponed too long. The mortality is already decreasing. Of the first twelve cases reported six recovered and six died, while of the last twelve, nine recovered and three died. This mortality can perhaps be still further lessened by earlier diagnosis and operation, and by such methods of operation as are most quickly performed and accompanied by the minimum loss of blood.

Diagnosis. — The diagnosis can be conveniently divided into two parts: 1, to determine the existence of pyloric obstruction; and, 2, to differentiate between obstruction caused by cancer and that caused by cicatricial stenosis. But few of the reported cases have such a typical history as the one I have related. The coexistence of dyspeptic symptoms or of some still open ulcers complicated the diagnosis in most of the cases. I should regard as of little value some of the symptoms upon which much stress has been laid. The material vomited in some cases consisted of partly digested food, in some it was wholly undigested and offensive, while in others it consisted of well-elaborated chyme. The character of the material indicates the health and physiological activity of the stomach, but throws little light upon the condition of the pylorus. In some cases sarcinæ were present, but in many they were absent. The same may be said of starch granulus, of needles of the fatty acids, of free hydrochloric acid, of pain and of other dyspeptic symptoms, which have usually existed several years before the symptoms of obstruction occurred.

The following symptoms I would consider of value: 1, a greatly dilated stomach; 2, the vomiting of from one to two quarts of material at one time; 3, the recognition in the vomited matter of articles that have been taken many hours, days, or weeks before; 4, when the act of vomiting is performed with great ease, without nausea, and the appetite is good immediately afterwards; 5, obstinate constipation; 6, the non-effect of ordinary purgatives; 7, a preceding history of gastric ulcer of several years' duration, and temporary improvement followed by simple obstructive vomiting of well-elaborated chyme many hours after taking food. This typical history occurred but twice among the twenty-four cases. Where the symptoms are obscure, great reliance may be placed upon the detection of a decidedly enlarged stomach, as this is rare except as a result of mechanical obstruction of the pylorus.

The mere presence of tumor is almost without value in the differential diagnosis between cancer and stenosis. In the twenty-four cases tumor was present in seven, absent in four, not noted in thirteen. A rapidly growing nodulated tumor low down in the abdomen is probably malignant. A poorly defined tumor, not increasing in size, high in the abdominal cavity, is probably non-malignant. The average duration of cancer of the pylorus is one year (Brinton), the maximum duration three years (Bartholow). The average duration of the gastric symptoms in thirteen of the twenty-four cases in which this is noted was eleven years. The history of temporary improvement is against malignant disease. In the later stages of cancer the obstruction is often removed by ulceration, and diarrhœa occurs. In the later stages of ulcer the obstruction increases and the stenosis is more obstinate.

The Abdominal Incision. — In all of the reported cases only two methods of opening the abdomen have been used, — one by an incision running from one inch below the ensiform cartilage to the extremity of the ninth rib on the right side, a distance of about six inches; the other by an incision in the median line between the ensiform cartilage and the umbilicus and from three to six inches in length. The first method was used by Loreta in his earlier cases, but he now uses the latter exclusively.

The stomach wound should be made far enough from the pylorus to be in healthy tissue. If some inches from the pylorus, it will be outside the zone of inflammation following the dilatation. Experimenting upon cadavers, I found that separation of my fingers more than an inch caused rupture of the mucous membrane.

The stomach wound has been closed in many ways and all did well. In no case was there the slightest leakage. No case suffered from peritonitis, and in none was the stomach wound the cause of death. I would suggest that probably the best method would be a continuous suture of catgut to the mucous membrane and the suture of Appolito to the peritoneum.

Diet. — In some of the reported cases food has been given as early as a few hours after the operation, without injury. I delayed until the fourth day, although I see no reason why food should not be given earlier. Peptonized milk, animal broths, diluted wines, and the yolks of eggs would be the best articles, according to the condition of the stomach prior to operation. Rectal alimentation will be required until sufficient food can be given by the mouth. Solid food has rarely been given before the tenth day, and then sparingly.

Permanency of Cure. — Recontraction of the cicatricial tissue would naturally be feared, but Loreta, in January, 1885, nearly three years after his first operation, writes: "I have now operated on six cases. They all have recovered and all remain well up to the present time." Haggard, in 1888, reports that the case he operated on two years before was "still perfectly well, no vomiting, dilatation of stomach less, and she has recently married." Peruzzi, in his letter to me March 22, 1889, states that he knows of only one relapse among the thirty cases upon which Prof. Loreta has operated. This patient was reoperated upon, recovered, and remained well."

In one of the fatal cases included in the list the obstruction was valvular, due to irregular contraction of the walls of the stomach. In another case not included in the list, as the stomach was not opened, the valvular obstruction was caused by distortion produced by external adhesion. These were divided and the patient made a good recovery. In another case not included in the list, the operator, recognizing that he had badly ruptured the mucous membrane while stretching the pylorus, immediately performed pylorectomy, with recovery of the patient. In another case the obstruction was caused by an adherent pancreas. The cause of the adhesion was an ulcer starting in the posterior wall of the stomach and penetrating the pancreas. In this case incision about two inches in length was made from stomach to duodenum, passing through the pylorus. The two extremities of the wound were brought in contact and the wound sewn up at right angles to its position when made. When completed, it was parallel to the long axis of the body. This patient recovered after a serious illness.

DISCUSSION.

Dr. R. A. Kinloch, Charleston, S. C.: I have no personal experience with this operation. We must accept the testimony of reliable men; but I cannot understand how an organic stenosis of the pylorus is cured by a single dilatation. This is not the case with organic stenosis in other parts, as the rectum and the œsophagus. I am inclined to believe that where the benefit has continued for any length of time the organic change has been slight. I can understand how benefit could be expected if the wound were kept open and the stricture systematically dilated.

Dr. M. H. Richardson, Boston: The mortality of gastrotomy as a primary operation is extremely small. I have also found from sixty dissections that the longitudinal incision between the greater and lesser curvatures made the best incision for reaching either the pylorus or the cardiac extremity of the stomach. The shortest incision was one inch, but the incision usually required was two or three inches.

Dr. J. Ewing Mears, Philadelphia: While it may not be easy to explain the results obtained by digital divulsion of the pylorus, there can be no question as to the beneficial results. The evidence of reliable operators certainly indicates that it is a proper operation and attended with successful results. This operation should always be performed in preference to pylorectomy.

Recent Literature.

A Practical Treatise on the Medical and Surgical Uses of Electricity, including: Localized and General Faradization; Localized and Central Galvanization; Franklinization; Electrolysis and Galvano-Cautery. By Geo. M. Beard, A.M., M.D., and A. D. Rockwell, A.M., M.D. Sixth edition. Revised by A. D. Rockwell, M.D. With nearly 200 [196] illustrations. 8vo. pp. xxx, 758. Wm. Wood & Co., New York. 1888.

The revision in the present edition of this well-known work "has been mainly restricted" to the methods of Apostoli in the treatment of uterine disease. In the section on uterine fibromata, however, Apostoli's methods are not given in full, and more stress is laid upon puncture than upon the use of the sound. This work has long been a favorite; but as a scientific treatise on electrotherapeutics it is greatly inferior to the works of Erb or De Watteville.

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TRAUMATIC NEUROSES.

Within the last year much has been done to advance our knowledge of those obscure affections of the nervous system which develop after injury, and which in former days were attributed to a "concussion of the spinal cord." Some time ago the different views of the French and German schools were given in these columns.[1] At that time Charcot and his pupils held that all such cases were hysteria, while Westphal and Oppenheim maintained that there was an organic lesion in many of the cases. The French observers still maintain their position, but the exhaustive work done by the Germans has led to some changes in the opinions formerly held by them. They no longer hold to the belief that there is an organic lesion in the majority of cases; but they describe a fairly definite affection which they regard as functional in character, although entirely different in type from hysteria; this affection they speak of as a "traumatic neurosis."

Strümpell, in an admirable monograph,[2] discusses the question fully, and divides these traumatic neuroses into two groups, general and local. Local traumatic neuroses do not usually arise from a severe trauma, and there is usually no general concussion; there is often, however, much terror from the accident. They are attended with pronounced hyperæsthesia on passive motion, anæsthesia, paralysis, and contracture; in some cases there is the typical articular neurosis described by Brodie. These are the cases similar to those reported by the French, and they may properly be termed "traumatic hysteria." There is a disturbance of the relations between the somatic nervous processes and the psychical processes. In many cases there may be an organic injury, usually a lesion of some peripheral nerve, and especial care must be taken in the differential diagnosis. The prognosis for ultimate recovery is good, although many cases are very obstinate.

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[1] See this Journal, Sept. 23, 1886.

[2] A. Strümpell. Ueber die traumatischen Neurosen. Berliner Klinik, 1888.

The general traumatic neurosis is marked in the first place by the psychical disturbance. The patients are depressed, anxious, hypochondriacal, and lack energy. The mind and memory are weak; they are incapable of continued mental effort, and can neither read nor listen to reading. They are often sleepless, and, when asleep, suffer from bad dreams. There is usually a good deal of sensory anæsthesia, involving the special senses, but hemianæsthesia is rare. Backache and headache are common. Movements are slow and weak, and there is often tremor or muscular rigidity with increased tendon reflexes. Trophic disturbances sometimes occur, among them baldness and rapid grayness of hair. There is loss of appetite, dyspepsia, and constipation. Micturition is feeble,-although seldom involuntary, and the sexual power is often lost. Palpitation and a rapid pulse are common symptoms. In a part of the cases the trauma is purely psychical. The terror of the accident, and the dread of the consequences to the patient himself and those dependent on him, give rise to most of the trouble, and the physical concussion plays but a small part. The unconscious attention to the symptoms aggravates them and produces much of the trouble. These symptoms, however, are not simulated and are involuntary. After the psychical trauma is over and the causes for anxiety have been removed, the symptoms may persist, and many cases are incurable. In spite of the best treatment the patient grows worse. This general traumatic neurosis resembles, in certain points, hysteria, neurasthenia, and certain psychoses, but in the persistent cases there is very probably some unknown fine material disturbance of the nervous system. The general and local neuroses cannot always be sharply separated, and they may exist with actual gross lesions of the brain and cord. Moreover, the general traumatic neurosis may form a soil for the development of organic disease later.

Of even greater value is the exhaustive monograph of Oppenheim,[3] which gives full histories of thirty-three cases observed in Westphal's clinique in the last five years. Oppenheim has withdrawn somewhat from the opinions that he formerly held, that the majority of these cases were due to organic lesions. He now holds that the cases with undoubted signs of organic disease (immobile pupils, optic atrophy, etc.) are rare. He gives a most elaborate analysis of the various symptoms of traumatic neuroses, agreeing in the main with Strümpell. He does not, however, make as definite a distinction between general and local neuroses as does the latter author. He calls attention once again to the frequency of traumatic lumbago, and lays considerable stress on the frequency of disturbances of cardiac innervation, which may give rise to actual disease of the heart. The physical injury is only in part responsible for the trouble. The psychical trauma, the terror and emotional shock, plays the chief rôle. This causes a loss of memory for certain movements, and consequently paralysis, and the trouble in many cases is due to a functional disturbance of the cerebral cortex. It is incorrect, however, to consider these traumatic neuroses as hysteria, unless the term hysteria be so enlarged as to include all functional nervous diseases. In a minority of the cases, moreover, pathological changes may develop in the nervous system, so that organic and functional disturbances may be combined. It is rare that there is any previous taint in the victims of traumatic neuroses. The prognosis in regard to life, except when organic disease is present, is usually favorable. It is quite another matter as regards restoration to health. In certain cases severe psychoses develop, while others tend to epilepsy or dementia. Improvement may occur, especially after the anxiety in regard to money matters has been settled by an award of damages, but in the majority of cases the patient's condition remains unaltered, or grows worse after all claims have been settled.

The chief French contribution to the subject that has recently appeared is by Grasset,[4] who points out the differences between idiopathic hysteria and the so-called traumatic form. The latter is commoner in men and demands no previous neurotic taint, and it is far less amenable to treatment. Grasset furthermore points out a flaw in Charcot's explanation of the origin of the affection, that the local trauma acts as a suggestion to the patient, who has been put into a hypnotic state by the psychical shock. Were the paralysis due to an auto-suggestion it ought to be cured by suggestion, which is never the case.

The claim of Charcot that the cases are "nothing but hysteria" seems pretty thoroughly disproven by the work of the German observers. That claim rested on too limited a view of the subject. The cases reported by Charcot and his pupils were certainly closely akin to idiopathic grand hysteria, but they have no resemblance to the cases of "traumatic neuroses" reported by German and American observers. In fact, outside of France, "traumatic hysteria" is very rarely seen. The general traumatic neurosis is a grave affection, having in a part of the cases, probably, an organic basis, and its prognosis is by no means favorable. It is of interest further that, contrary to the opinions we so often hear from railway experts, simulation, in the opinion of Oppenheim, Strümpell, Bruns, and all other German observers, is very rarely met with in these cases.

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[3] H. Oppenheim. Die traumatischen Neurosen. Berlin, 1889.

[4] J. Grasset. Leçons sur l'hystéro-traumatisme. Montpellier Médical, June, 1888.

REMOTE RESULTS OF THE ABLATION OF CANCERS OF DIFFERENT REGIONS.

At the eighth congress of the German Society of Surgery, held in Berlin April 24th to 27th, 1889, the subject was discussed of the subsequent and remote results of the removal of cancers of different parts of the body.

Von Bergmann presented: 1, a case of carcinoma of the pharynx operated upon in 1884; three months afterward there was a return of the disease, when complete extirpation of the glands was effected; since then the patient has remained free from any carcinomatous affection; 2, a case of cancer of the face extirpated four years ago; no return; 3, two cases of cancer of the lips, operated upon two years ago; no return.

Thiersch, of Leipzig, stated that some time ago he had operated on a case of cancer of the stomach; there had been no return.

Kœrte, of Berlin, two years ago extirpated a cancer of the larynx; the patient had remained exempt from recurrence of the malady. Von Bergmann, in commenting on this case, said that four years ago he removed half the larynx for cancer. The patient had remained well to the present time. Schmidt, of Frankfurt-on-the-Main, three years ago removed the entire larynx for cancer; no recurrence. Schmidt, of Stettin, had also removed, two and a half years ago, the entire larynx for a carcinomatous growth; the patient had recovered and kept well; was now breathing through a canula.

Von Esmarch stated that twenty years ago he operated on a case of cancer of the tongue; the patient remained free of his cancer till recently, when he died of apoplexy. Schebe, of Hamburg, had operated on three cases of lingual cancer; after several years there had been no recurrence.

Von Bergmann presented a case of cancer of the tongue, operated on two years ago, and another operated on four years ago; both had remained well and exempt from recurrence. Kuster and Krause communicated similar cases.

With regard to cancer of the rectum, three cases were communicated by Krause; extirpation was performed six, eight, and nine years ago. These patients are all alive and free from cancerous disease. Bergmann presented a patient on whom the "high amputation" of the rectum for cancer had been performed four years ago; no recurrence.

Schinzinger, of Friburg-in-Bresgau, reported that he had operated on eighty-six cases of cancer of the breast; in twenty-six only there had been a return in the course of a couple of years.

The above represents the bright side of the picture which the eminent surgeons at the Berlin meeting took evident pleasure in holding up and dwelling upon; there is a dark side with which every surgeon is painfully familiar.

Some practical remarks were made by Heidenhain on the causes of the local recurrence of cancer after extirpation of the breast. He had made a histological examination in eighteen cases where the breast was extirpated for primary cancer. In all the cases where there was afterwards recurrence, he had been able to convince himself by microscopical examination that particles of cancer had been left in the wound during the operation. Sections of apparently sound tissue in the vicinity of the morbid tumor revealed epithelial trails infiltrating the parts. In six cases he found the tissues surrounding the tumor free from epithelial infiltration; in these there has been no recurrence.

In cases of this kind, the epithelial trails follow the lymphatic vessels, and sometimes extend to the aponeurosis of the pectoral muscle. It is, then, says Heidenhain, a good plan in cancer of the breast to remove this aponeurosis, and to dissect even into the muscle, so as to be sure that the lymphatic vessels, which penetrate the aponeurosis perpendicularly, are not infected. Küster has long been in the habit of removing this pectoral aponeurosis after the ablation of a mammary cancer, as cancerous tumors of the breast, when adherent to this aponeurosis, are of bad prognosis. Out of sixty-five cases of Von Volkmann's, in which there was adhesion of the tumor to the pectoral aponeurosis, all but two suffered recurrence of the cancer.

THE NEW LAW IN RELATION TO THE RETURNS OF BIRTHS BY PHYSICIANS AND MIDWIVES IN MASSACHUSETTS.

The Massachusetts Legislature has recently passed an Act amending Chapter 158 of the Acts of 1883, and extending the requirements of the law of 1883 to the city of Boston. This Act was approved by the governor April 26, 1889, and is therefore now in force. For the convenience of the profession of Boston, we publish the Act in full as recently amended: —

"Physicians and midwives shall, on or before the fifth day of each month, report to the clerk of each city or town a correct list of all children born therein during the month next preceding, at whose birth they were present, stating the date and place of each birth, the name of the child (if it has any), the sex and color of the child; the name, place of birth, and residence of the parents, and the occupation of the father. The fee of the physician or midwife shall be twenty-five cents for each birth so reported, and shall be paid by the city or town in which the report is made."

Although the Act directs that the returns be made to the city clerk, it should be remembered that in Boston there is a special officer charged with the collection and care of vital statistics, namely, the city registrar, and to him the returns should be sent. Suitable blanks can be obtained either from this official or at the office of the secretary of state at the State House.

It is obvious that if the intent of the law is to be regarded, and if the full statistical advantage is to be derived therefrom, the Act must not be interpreted too literally. Thus the law reads that physicians and midwives shall report a correct list of all children at whose birth *they were present.* But the obvious intent of the statute is that all cases should be reported, even if the child is born in the absence of the attendant, provided he is morally certain of the fact.

Whether or not this law will insure greater statistical accuracy than has hitherto been obtained by the yearly census taken from house to house is a question. Many women are delivered every year in Boston without other attendance than that of a neighbor or friend; and it is certainly open to doubt whether midwives generally will make full and accurate returns. To the busy physician the fee is no inducement; and, so far as we are aware, there is no penalty for disregarding the law. It is expected, however, that physicians, as good citizens, will obey the statute, and enable the Commonwealth to make her vital statistics as accurate as possible.

MEDICAL NOTES.

— The Newport city council has appropriated $300 for the entertainment of the American Medical Association next month.

— Dr. Howard Kelly, for a year connected with the department of obstetrics at the University of Pennsylvania, has been elected to the chair of obstetrics at Johns Hopkins University.

— Drs. Beecher, Bell, and Horwitz, who have been demonstrators of anatomy in connection with the Jefferson Medical College, have resigned, and Dr. A. Hewson, Jr., has been made the demonstrator in charge.

— The Hotel Willard, of Kansas City, has been leased by the Missouri Pacific Railroad Company for five years and will be converted into a hospital for the sick and injured of this system, who up to this time have been scattered about on all points of the system without any efficient hospital service.

— The *Chicago Times* says that at a hospital in that city a female surgeon performed an operation on a girl for tumor in the stomach. The patient was opened, the diseased growth removed, and the incision neatly sewed up with a silver wire. About this time an attendant noticed that one of the large sponges which had been used in the cavity for absorbing the blood was missing. The surgeon reopened the young woman, found the sponge where it had been sewed up inside of her, and as she removed it remarked: "I'm glad that my attention was called to the matter, as that sponge is worth 65 cents." The *Times* insinuates that the inability to overlook details is constitutional in the sex.

— The reporter's joke of getting one's self committed to an asylum by feigning insanity is, like so many other reporter's jokes, going the rounds. Some months ago "Nelly Bly," who was connected with one of the New York papers, went through such an experience in the insane wards of Bellevue. A man has had himself committed to the Cook County asylum of Illinois, and his publication of the treatment and resources of the hospital is being made the subject of more than jocose treatment by the courts. And now a Philadelphia reporter has gone through the same performance and has "charges" to make.

BOSTON AND NEW ENGLAND.

— At the annual meeting of the Connecticut Medical Society the following officers were elected: President, Dr. Orlando Brown, Washington; vice-president, Dr. Melancthon Storrs, Hartford; treasurer, Dr. W. W. Knight, Hartford; secretary, Dr. N. L. Wordin, Bridgeport; committee on matters of professional interest in the state, Drs. Henry Fleischman, New Haven, Charles C. Beach, Hartford, Francis D. Edgerton, Middletown. Delegates to the convention of the American Pharmaceutical Association to revise the National Pharmacopœia, Drs. Charles A. Lindsley, New Haven; F. J. Young, Bridgeport; O. J. D. Hughes, Meriden; alternates, Drs. John H. Granniss, Old Saybrook; R. S. Goodwin, Thomaston; G. W. Avery, Hartford.

— The annual meeting of the South Bristol District Medical Society was held in New Bedford May 22. The following officers were elected for the ensuing year: President George S. Eddy of Fall River; vice-president, S. W. Hayes of New Bedford; Secretary, treasurer, and librarian, A. J. Abbe of Fall

River; commissioner of trials, J. H. Mackie; censors, C. A. Gould of Adamsville; W. T. Learned of Fall River; F. M. Sherman of Dartmouth; E. M. Whitney of New Bedford; W. A. Dolan of Fall River; councillors, E. P. Abbe of New Bedford, S. W. Bowen of Fall River, W. Butler of Vineyard Haven, D. E. Cone of Fall River, J. H. Jackson of Fall River, W. H. Taylor of New Bedford, G. L. Ellis of Middleboro; councillor for nominating committee, W. H. Taylor.

Dr. David W. Cheever, president of the Massachusetts Medical Society, was present and addressed the meeting.

NEW YORK.

—The State Board of Health has issued for general distribution through the State a timely circular on diphtheria, which starts out with the assertion that diphtheria is a preventable disease, and gives an account of the ways in which it originates and may be communicated, with specific directions for isolation, the avoidance of sources of contagion, and disinfection.

— The fourth annual dinner of the faculty of the New York Post-Graduate Medical School and Hospital was given at the Hotel Brunswick on the evening of May 23rd. Dr. D. B. St. John Roosa presided, and among the toasts were "The Profession in New York," responded to by Dr. T. Gaillard Thomas, and "Our Directors," by Dr. Andrew H. Smith.

— Dr. Henry E. Allison, who has been first assistant physician at the Willard Asylum since 1878, has been appointed medical superintendent of the New York State Asylum for Insane Criminals at Auburn, to succeed Dr. Carlos F. MacDonald, who has accepted the presidency of the new State Commission on Lunacy.

Correspondence.

SCARLATINA COINCIDENT WITH VARICELLA.

Mr. Editor,—The following case may be interesting to your readers. I saw the child, aged two years, suffering with an attack of varicella of as nearly as I could ascertain about forty-eight hours' duration. The first crop of vesicles was mostly broken and the second was perfect. The child was troubled with very profuse salivation, due to varicella vesicles in the mouth. A bright red rash was upon the chest and extremities, which appeared somewhat discrete in the inner aspects of the arms and legs, but which was a general flush over the chest. There was reddening of the fauces, and enlarged glands in part of the sterno-mastoid. I was uncertain as to whether the rash were an erythema, sometimes seen accompanying varicella, or not. On a second visit, a day later, it was quite evident that the child had scarlatina in addition to varicella, the characteristic symptoms of each disease being now well marked. I have never seen the two diseases coexisting in the same patient, nor have I ever heard of it, and venture to report this simply as a curiosity.

Yours very truly,
Russell Sturgis, M.D.

NOVEL METHOD OF DETECTING A PERFORATION OF MEMBRANA TYMPANI.

Boston, May 26, 1889.

Mr. Editor,—In the *Wiener Medicinische Presse*, issue of December 30, 1888, Dr. E. Pins, of Vienna, suggests two novel methods of detecting small perforations of the membrana tympani. As the following way has not been previously mentioned, I offer it as at once beautiful and scientific.

While looking into the auditory canal in the ordinary manner, with speculum and mirror, hold a piece of clear, cold glass close to the speculum, have the patient do the "Valsalvian" experiment, and if a perforation exists the vapor of the breath will be condensed upon the glass and obscure the view.

Yours truly,
E. D. Spear, M.D.

HAVE DISEASES OF THE NERVOUS SYSTEM INCREASED IN FREQUENCY?

Mr. Editor,— It is now the general opinion that diseases of the nervous system, especially the functional diseases, are increasing in frequency and are much more prevalent than formerly. It may interest your readers to know that this is not a new idea; it has been thought in former years that this class of diseases was increasingly prevalent. It is also of interest that the same causes for this increase were given eighty years ago as are mentioned now.

A short time since I came across a book, of which the title shows the views of the profession on these points: "A View of the Nervous Temperament; being a Practical Inquiry into the Increasing Prevalence, Prevention, and Treatment of those Diseases commonly called Nervous, Bilious, Stomach and Liver Complaints, Indigestion, Low-Spirits, Gout, etc., by Thomas Trotter, M.D., Late Physician to His Majesty's fleet under the command of Admiral Earl Howe, K.G.; and to the squadrons commanded by Admiral Lord Bridport, K.B., Admiral Earl St. Vincent, K.B., and the Hon. Admiral Cornwallis; Member of the Royal Medical Society of Edinburgh, etc."

The names of the admirals under whom the author served carry one's thoughts back to the early days of our nation, when, according to present views, our fathers and mothers had few or no nerves, when all the country was in its primitive simplicity of habits and customs, which precluded the possibility of the nerves being worn out. This book, however, deals with the state of society and health in the Mother Country and not here in the young Republic.

The first chapter considers the "health of the savage state compared with modern times," and it is possible Dr. Trotter looked upon these recently revolted Colonies as in a savage state.

Among the causes giving rise to nervous diseases may be mentioned — impure air, insufficient exercise, luxurious living, imprudence in clothing, grief, care, worry, novel-reading, the drama, intense study, lactation, miscarriages and premature labors, climate, the taking of medicines without the advice of a physician. This last cause is dwelt upon rather at length.

It would be easy to pick out from the learned author's description a pretty good enumeration of those symptoms which are now so commonly seen in neurasthenia. A peculiar lassitude, listlessness and inaptitude to all kinds of motion; at times the appetite for food is deficient; there is often acute pain about the region of the stomach: bending the body forward, it gets the name of cramp; uneasy flutterings about the breast, and palpitations, with the sense of a ball rising to the throat; headaches, hemicrania, vertigo, tinnitus aurium. The enumeration of symptoms is almost as extensive as that made by Dr. Beard of those found in neurasthenia.

It is unnecessary to give more of this old book to show that, eighty years ago, the general opinion in England was that nervous diseases were on the increase.

Yours truly,
S. G. Webber.

[For a notice of this interesting book of Dr. Thomas Trotter's, see editorial, Journal, vol. cx. p. 306. — Ed.]

REPORTED MORTALITY FOR THE WEEK ENDING MAY 11, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhœal Diseases.	Diph. and Croup.	Measles
New York	1,571,558	782	334	22.75	14.56	2.08	7.54	6.24
Philadelphia	1,040,245	397	135	20.00	20.00	2.25	2.50	1.25
Chicago	830,000	328	162	17.70	14.10	3.00	5.40	1.20
Brooklyn	814,505	415	181	17.52	18.96	1.44	6.48	2.40
Baltimore	500.343	146	39	10.35	6.20	.69	1.38	2.76
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	188	68	12.72	20.67	2.12	5.83	—
New Orleans	250,000	141	39	17.04	9.94	7.81	3.55	—
Cincinnati	225,000	142	—	16.10	13.30	—	9.10	1.40
Washington	225,000	92	23	6.54	8.72	—	2.18	1.09
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	11	—	9.09	—	—	—	—
Charleston	60,145	47	19	12.78	6.39	8.52	—	—
Portland	40,000	6	—	16.66	—	—	—	—
Worcester	78,292	27	9	7.40	18 50	3.70	3.70	—
Lowell	71,518	39	14	7.68	10.30	—	2.56	—
Cambridge	65,552	27	9	22.20	14.80	—	7.40	—
Fall River	62,647	20	8	10.00	20 00	—	5.00	5.00
Lynn	53,334	15	4	6.66	13.33	—	6.66	—
Springfield	40,731	21	3	14.28	19.04	—	14.28	—
Lawrence	40,619	16	5	25.00	6.25	—	—	—
New Bedford	37,253	16	4	12.50	—	—	12.50	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	5	2	40.00	40.00	—	20.00	—
Salem	29,011	6	4	16.66	—	16.66	—	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	—	—	—	—	—	—	—
Haverhill	26,058	9	2	22.22	22.22	—	—	—
Taunton	25,170	5	2	40.00	—	—	40.00	—
Gloucester	24,263	5	1	20.00	20.00	—	—	—
Newton	21,553	5	1	20.00	20.00	—	—	—
Malden	19,774	4	2	—	—	—	—	—
Fitchburg	17,534	10	1	—	10.00	—	—	—
Waltham	17,332	6	1	—	33.33	—	—	—
Newburyport	13,875	—	—	—	—	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	7	2	42.84		—	14.28	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2793; under five years of age 998; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 446, consumption 393, acute lung diseases 350, diphtheria and croup 162, diarrhœal diseases 83, scarlet fever 55, typhoid fever 39, measles 32, whooping-cough 30, cerebrospinal meningitis 18, malarial fever 17, erysipelas 10. From typhoid fever, Philadelphia 17, New York 6, Chicago 4, Cincinnati 3, Boston and Washington 2 each, Baltimore, Worcester, Lowell, Lynn, and Lawrence 1 each. From malarial fever, New Orleans 6, New York, Philadelphia, and Baltimore 3 each, Charleston 2, Nashville 1. From measles, New York and Chicago 7 each, Philadelphia 6, Brooklyn 5, Boston and Cincinnati 2 each, Lawrence, Haverhill, and Quincy 1 each. From whooping-cough, New York 12, Philadelphia 7, Brooklyn 6, Boston 2, Chicago, New Orleans, and Washington 1 each. From cerebro-spinal meningitis, Washington 4, New York and Chicago 3 each, Philadelphia and Lynn 2 each, Baltimore, Cincinnati, Lowell, and Chelsea 1 each. From erysipelas, Philadelphia 5, New York 2, Chicago, New Bedford, and Haverhill 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending May 4th the death-rate was 19.4. Deaths reported 3559; infants under one year 824. Measles 167, whooping-cough 125, scarlet fever 40, diphtheria 33, fever 33, diarrhœa 30.

The death-rates ranged from 13.2 in Leicester to 32.3 in Blackburn; Birmingham 16.3; Hull 19.6; Leeds 25.3; Liverpool 21.9; London 16.6; Manchester 28 4; Newcastle-on-Tyne 23.7; Nottingham 20 6; Portsmouth 16.6; Sheffield 22.3.

In Edinburgh 17.6; Glasgow 28.7; Dublin 26.2.

The meteorological record for the week ending May 11, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, May 11, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
May 5	29.96	66.0	80.0	43.0	68	53		60.0	W.	W.		11	10		C.	C.			.00
" 6	30.08	59.0	71.0	49.0	47	86		66.0	N. W.	E.		9	9		C.	C.			.00
" 7	30.09	47.0	50.0	43.0	86	92		89.0	N. E.	E.		6	10		O.	O.			.00
" 8	29.98	56.0	68.0	42.0	80	60		70.0	S. W.	W. S.		3	10		C.	C.			.00
" 9	29.92	70.0	90.0	54.0	66	57		62.0	S. W.	S.		10	12		C.	C.			.00
" 10	29.67	74.0	92.0	61.0	65	66		66.0	S. W.	W.		8	12		C.	R.		1.85	.08
" 11	29.69	62.0	62.0	55.0	66	71		68.0	N. E.	S. E.		12	6		O.	C.		2.16	.07
Means for the Week	29.91		76.0	49.0				69.0										3.45	.15

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 18, 1889, TO MAY 24, 1889.

By direction of the Acting Secretary of War the leave of absence on Surgeon's Certificate of Disability granted Major WILLIAM H. FORWOOD, Surgeon, in S. O. No 35, April 8, 1889, Department of Dakota, is extended one month on Surgeon's Certificate of Disability. Par. 13, S. O. 118, A. G. O., Washington, May 22, 1889.

MIDDLETON, Major PASSMORE, Surgeon, will as soon as practicable after his arrival at Fort Trumbull, Conn., proceed to Fort Warren, Mass., and report for temporary duty until the return of the post surgeon from detached service with batteries of the 4th Art. ordered to Atlanta, Ga. He will then return to his proper station (St. Francis Barracks, Fla.) Par. 2, S. O. 113, Hdqrs Divis. of the Atlantic, Governor's Island, N. Y. City, May 18th.

By direction of the Secretary of War, the leave of absence granted Captain AARON H. APPEL, Assistant Surgeon, in S. O. No 38, April 16, 1889, Division of the Missouri, is extended twenty days. By par. 2, S. O. 114, A. G. O., Washington, May 17, 1889.

By direction of the Secretary of War, leave of absence for four months, with permission to go beyond sea, is granted Captain WILLIAM STEPHENSON, Assistant Surgeon. Par. 15, S. O. 114, A. G. O., Washington, May 17, 1889.

Leave of absence for one month is granted First Lieutenant OGDEN RAFFERTY, Assistant Surgeon, U. S. Army. Par. 3, S. O. 29, Headquarters Department of Texas, San Antonio, Texas, May 13, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 25, 1889

HENEBERGER, L. G., Passed Assistant Surgeon, detached from the "Thetis" and ordered to the "Iroquois."

HESLER, F. A., Assistant Surgeon, promoted to be Passed Assistant Surgeon in the U. S. Navy.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting of the society will be held at 19 Boylston Place on Monday evening, June 3rd, at 8 o'clock. Readers: Dr. S. W. Langmaid, "Nasal Stenosis." Dr J. H. McCollom, "Variola and Varicella."

T. F. SHERMAN, M.D., *Secretary.*

MAINE MEDICAL ASSOCIATION — The thirty-seventh annual meeting will be held in Common Council Chamber, City Building, Portland, Me., Tuesday, Wednesday, and Thursday, June 11, 12, and 13, 1889.

ADDENDUM

MR. EDITOR, — Owing to change of form the following notes to the table in my article on "Reaction of the Blood" (May 23d) were left out.

Sulphate of quinine was taken in ten-grain dose on 10-10 at 9.15 A.M., and 17-10 at 10 A.M.

Antifebrin was taken in four-grain doses 31-1, 87, 10.47 A.M.; 5-2, 10-10 A.M.; 11-2, 12.30, and 2 P.M.; 22-2, 10.10 A.M. and 1 P.M.; 13-3, 8.45, 11,20, and 2.20. — Yours truly.

JOHN A. JEFFRIES, M.D.

OBITUARY.

A. M. SMITH, M.D., M.M.S.S.

Dr. Abner M Smith died at Pittsfield May 23rd of peritonitis after an illness of about ten days. Dr. Smith was a native of Dalton and was sixty-eight years of age. He began his medical studies with Dr. Ferry of his native town, and afterwards graduated from the Medical School in Pittsfield, where he began practising his profession. He continued in practice up to the time of his last illness, covering a period of about thirty-five years.

He never took any prominent part in political matters, but he was always deeply interested in, and ready to assist any movement for the welfare of the town. He served for a long time on the school committee and was an active member of the board. He has been president of the Berkshire District Medical Society. For many years he was examiner of applicants for pensions.

BOOKS AND PAMPHLETS RECEIVED.

Electric Cataphoresis as a Therapeutic Measure. By Frederick Peterson, M.D. Reprint.

So-Called "Varicocele" in the Female. By Henry C. Coe, M D., M.R.C.S. Reprint. New York: 1889.

Annual Report of the Board of Health of the City of Worcester, for the year ending November 30, 1888. Worcester, Mass. 1889.

Cranial Measurements in twenty cases of Infantile Cerebral Hemiplegia By E. D. Fisher, M.D., and Frederick Peterson, M.D. Reprint. 1889.

The Bacteria in Asiatic Cholera. By E. Klein, M.D., F.R.S., Lecturer on General Anatomy and Physiology in the Medical School of St. Bartholomew's Hospital. London: Macmillan & Co. 1889.

The Neurosis of the Genito-urinary System in the Male; with Sterility and Impotence By Dr. R. Ultzmann, Professor of Genito-urinary Diseases in the University of Vienna. Translated by Gardner W. Allen, M.D. Boston: Cupples & Hurd. 1889.

Proceedings of the New York Pathological Society for the year 1888. Printed for the Society. 1889.

Extra-Uterine Pregnancy. A Discussion. From the Transactions of the American Association of Obstetricians and Gynecologists, 1888. With an appendix reviewing Mr Lawson Tait's Ectopic Pregnancy and Pelvic Hematocele Philadelphia: Wm. J. Dornan. 1889.

A Guide to Therapeutics and Materia Medica. By Robert Farquharson, M.P., M.D. Edin., F.R.C.P. Lond., late Lecturer on Materia Medica at St Mary's Hospital, Medical School, etc. Fourth American, from the Fourth English, Edition Enlarged so as to include all preparations officinal in the U. S. Pharmacopœia, by Frank Woodbury, A.M., M.D., Fellow of the College of Physicians of Philadelphia, etc. Philadelphia Lea Brothers & Co. 1889.

From Photograph of Engraving in the Bibliothèque Nationale, Paris

From Photograph of Portrait
Owned by the Boston Society for Medical Improvement

Address.

AN OLD PORTRAIT OF A SURGEON.[1]

BY HENRY J. BIGELOW.

It has occurred to me that the Society might like to hear the conclusions I have reached in an inquiry, which although it was made for my own amusement about a subject of no great importance, has occupied more time than I had expected, and relates to a portrait belonging to the Society.

The old portrait of a surgeon hanging on the walls of this Society and familiar to its members, was bought at Leonard's auction rooms about forty years ago. The picture has a good deal of merit, and my own interest in it lies in the fact that while bidding for it myself, I ceded it at his request to the late Mr. William Appleton, who soon after gave it to the Medical Improvement Society.

Some years ago I tried to ascertain as a matter of curiosity, whom this picture was intended to represent, and to do so I availed myself of the kind permission of the Society to have it photographed. This was about a year before I incidentally learned from our librarian that anybody else felt any interest in the subject.

Why the picture had received the honored name which remained attached to it for nearly forty years, that of Ambroise Paré, I never knew. The late Dr. Bethune told me at the time, that the portrait resembled one of Ambroise Paré which was in the folio copy of his works then belonging to Dr. Holmes and now in the possession of this Society; and the trephine which appears in the picture is an instrument so connected with the name of Paré that it seemed in some degree to corroborate this view: although I may observe that the particular trephine here represented, is not furnished with the safety guard, the *"chaperon,"* devised by that surgeon.

Further and more recent consideration of the subject was mainly that of two points. 1st, the question of resemblance or non-resemblance of the features in this oil painting to those of other portraits of Paré; and, 2nd, the accessory evidence, chief of which is the supposed professorial robe in which the subject of our picture is painted.

In considering how far the features of the different portraits of Paré resemble each other, we are at once struck with the small size of the under jaw. Hardly one man in a hundred has as short a jaw as is represented in some of these portraits. Indeed this abbreviated jaw is a characteristic of the most authentic portrait of him.

Now the portrait belonging to the Society has the same short jaw. It is very short indeed; a curious coincidence, which doubtless had its influence when the name of Paré was selected for it.

I am indebted for the information which I shall be able to give, to Dr. Le Paulmier of Paris, the highest authority on this subject, who has written a most interesting and well-known biography of Ambroise Paré, entitled "Ambroise Paré d'après de nouveaux documents decouverts aux archives nationales, et des papiers de famille, 1885," and with whom I have been in correspondence for a year or more on this subject.

In the critical notice in his book, of the existing portraits of Ambroise Paré, which are mostly to be found in the separate editions of his works, Dr. Le Paulmier refers nearly all of them indirectly to a common original, an authentic oil painting of the great surgeon, at the Chateau de Paley, — and more directly to a well-known engraving of Delaune, which he also considers to have been taken from that painting. In view of this common origin, it might be supposed that these various engravings, however inferior most of them are as works of art, would resemble each other; and yet apart from the peculiarity of the jaw already alluded to, it is not easy to see at once how they can represent the same individual, or even to discover any resemblance between some of them but that of a short jaw, and so far as that goes the portrait of the Society might be one of them. The evidence from such portraits as are accessible in Boston cannot be said to be conclusive. But some of them are upon the table, and gentlemen can form their own opinion about this.

Next, as the Society will remember, came the additional evidence of a superb portrait by Porbus, said to be of Ambroise Paré, representing a man of noble mien and fine expression, a photograph of which the Society owns. If this portrait were one of Ambroise Paré, the Society's portrait could by no reasonable probability be supposed to represent the same individual, and to my own mind this new evidence seemed quite conclusive.

Unfortunately, on further inquiry, this fine picture attributed to Porbus turns out to be a portrait of another person. Dr. Le Paulmier says of this portrait by Porbus (*op. cit.*, page 134), "Some galleries possess pretended portraits of the illustrious Paré which represent wholly different individuals. I will only cite two, one, which is in the Chateau d'Azay-le-Rideau, bearing the modern inscription, 'Ambroise Paré, born in 1517, surgeon of King Henry III.;' and another, a magnificent portrait belonging to Madame Nelaton which figured at the late exposition of the Trocadero. This last is attributed to Pieter Porbus and represents an unknown person. We must therefore leave this out of the question.

In regard to the second point, — the supposed professorial robe or gown, — the question has been raised here whether Ambroise Paré had the right to wear this robe. It was rightly said that if he were not entitled to it, the presence of this robe in the picture, would tend to show that this is not a portrait of Ambroise Paré.

But, on the other hand, if Ambroise Paré did possess the right to wear this robe, this argument is without weight, and we are left as much in the dark as before. I shall soon show that Ambroise Paré was entitled to wear this robe.

It is at last possible to throw light upon the whole question. I can fortunately present evidence of a conclusive nature that the portrait of the Society is not that of Ambroise Paré, by showing who it really is.

I sent a photograph of the portrait to Dr. Le Paulmier of Paris, who, after a somewhat troublesome research, was able to identify it. Our picture is a portrait of François Hérard, a French surgeon of eminence who died in the year 1682. There is a notice of him in the "Index Funereus" of Devaux, which was a contemporaneous biographical dictionary of deceased celebrities. It says of him that he was, "A man of signal integrity, of remarkable piety and distinguished in art. He was one of those whose portraits were engraved by the order of Louis le Grand, and inserted among the portraits of men who were illustrious in art during his reign. He died December 24th, 1683." On page 50 there is a notice of his son, also a surgeon, who died before his father.

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[1] Read before the Boston Society for Medical Improvement, April 22, 1889.

The Society's portrait is the original one of François Hérard, painted by Siere, which was engraved in 1682 by Louis Cossin. This engraving is in the large collection of portraits at the Bibliothèque Nationale, where it was discovered in a search made at the instance of Dr. Le Paulmier. As another copy might possibly be found, the print shops of Paris were searched for one, but without success. Some months after I had another careful search made but equally to no purpose. There is a large collection of engravings in Amsterdam. M. Muller wrote me that he had 10,000 engravings of physicians and surgeons, but none of Hérard. An unsuccessful search was also made in London.

The engraving here referred to has a manuscript title only. M. Le Paulmier wrote me again that this was "a portrait of F. Hérard, bourgeois de Paris, member of the college of Surgery, born in Paris and who died there December 24, 1682. The "Index Funereus," he says, "is in error in saying 1683. His portrait painted by F. Le Siere was engraved in 1682 by L. Cossin. The engraving of the Bibliothèque Nationale is like the photograph you sent me, and underneath is a manuscript inscription mentioning his name and the date of his death with his age."

"The portrait you possess is probably the original by Le Siere. It is that of a surgeon, who, if he has not left a marked trace in science, had during his life a brilliant *clientèle* and an excellent reputation."

The title upon this engraving, however, being in manuscript might possibly have been put upon the portrait of another person. I therefore ventured to again write to M. Le Paulmier upon this point. His answer will set at rest any doubts upon this question, and as it also mentions the fact that A. Paré had a right to wear a robe like the one represented in the Society's picture, I will with your permission, read a part of the letter. The Society will notice that M. Le Paulmier has now discovered another copy of the engraving of Hérard.

"It is with real pleasure," he says, "that I send you the information I have collected in regard to your portrait of Hérard.

"The National Library possesses two identical copies of his portrait engraved by L. Cossin after a picture painted by F. Siere of which you probably possess the original.

"Except that the head is turned to the left, where we see a table supporting a skull, a trephine and an elevator, these portraits are the same as that in the photograph you sent me. They measure twenty-four centimetres in height, and nineteen in breadth."

I would say that the picture is merely reversed by printing.

"The impression *after the letter* has, engraved beneath it, the following inscription: "François Hérard of Paris, chirurgien juré, famous for trephining and other operations. F. Siere pinxit, L. Cossin sculpsit."

The père Lelong, who copies this inscription in his "Bibliothèque historique de la France," adds, "deceased at Paris, December 24, 1682."

Thinking that the Society might like to see the original text of this allusion to their picture, of which a part has been cited by M. Le Paulmier from the "Bibliothèque historique de la France" par Jacques Lelong, Paris, 1775, tom. iv., appendix, p. 210, I have placed it upon the table. It reads thus: "François Hérard de Paris, Chirurgien, fameux pour les operations du Trepan et autres; mort a Paris le 24 Decembre, 1682. F. Siere p. — L. Cossin sc. 1682 in fol."

"The other impression, 'that *before the letter*,' writes M. Le Paulmier, "has no inscription but the names of F. Siere and L. Cossin; but underneath, some one at the end of the last century has written, 'François Hérard, chirurgien de Paris, mort en 1683 âgé de 87 ans.'"

"Let us now consider the costume," continues M. Le Paulmier. "There were formerly two classes of surgeons. One, called short-robed (de robe courte), comprised the barbers, barber-surgeons," of whom Ambroise Paré had been one. "The other, called long-robed (togati), included the master surgeons, or masters in surgery. These were members of the College of Saint Côme and had passed a more rigorous examination than the others. "It was this long robe that Ambroise Paré wore after his affiliation to Saint Côme." The significance of this affiliation will be better understood if we know what this society was.

Saint Côme and Saint Damien were the patron saints of surgeons; and gave their name to the chapelle des Cordeliers. This church of Saint Côme and Saint Damien, built in 1212, was one of two which occupied the extremities of the large area enclosed by the Rue l'Ecole de Médecine, the Rue Racine and the Rue Antoine-Dubois.

The surgeons were allowed to use the church of Saint Côme as a place of meeting for a society for medical improvement of the sixteenth century ("devaient se reunir pour s'instruire mutuellement dans leur art") and also as a surgical infirmary for poor patients gratis, one Monday a month.

In the year 1515 Saint Côme was converted by government decree into a surgical college. This was in part demolished in the year V. of the Republic, and the church was destroyed in 1836, except the Amphitheatre of Surgery, which in time became the Dupuytren museum.

Chapter viii. of the Introduction to Malgaigne's complete works of Ambroise Paré, Paris, 1840, is entitled "Transformation of the Confrérie of Saint Côme into a college — Reception of Ambroise Paré." The account of this is interesting enough to be read here:

". . . the college had an immense interest to attach to itself Ambroise Paré, who was in so great favor with the king; in so great renown among the people and the nobility. In spite of the statutes which required that the candidate should know Latin; in spite of the edict of 1544 which had insisted on this condition; more especially in spite of a difficulty more formidable than all the rest, the necessity of making him undergo his examination in Latin, everything was agreed upon and arranged in advance; they decreed to him, perhaps an unheard-of thing, the honors of a gratuitous reception; and he demanded in consequence to be admitted to the examinations the 18th of August, 1554; he was named Bachelor the 23rd of the same month, licensed the 8th of October, and took the bonnet de maître the 18th of December, 'in templo D. D. Cosmæ et Damiani supra fontes.'"

Having landed the great Ambroise Paré safely among the chirurgiens de longue robe, in the bosom of the college of Saint Côme, we can now understand what M. Le Paulmier says of this robe: —

"It was this long robe that Ambroise Paré wore after his affiliation to Saint Côme, — as did also Hérard, — and, for that matter, most of those who figure in the "Index Funereus" since Francis I. It was the official costume, which had no necessary relation with any other function; François Hérard himself had no title at court. This will explain (*a propos* of your question about Juvernay, who himself wore one) why mention is made of surgeons of the long robe — togatorum."

Let me say that this allusion to Juvernay refers to one M. Stephanus Juvernay whose name is in the "Index Funereus," and about whom I inquired of Dr. Le Paulmier, because he is especially mentioned as "embracing in himself the remains of the splendor of the school of the surgeons of the long robe." "Splendoris Chirurgorum Togatorum scholæ reliquias in se complectens."

I will add here that Dr. Le Paulmier quite understood that the picture about which he has so kindly interested himself, belonged to the Society.

In conclusion, he says: —

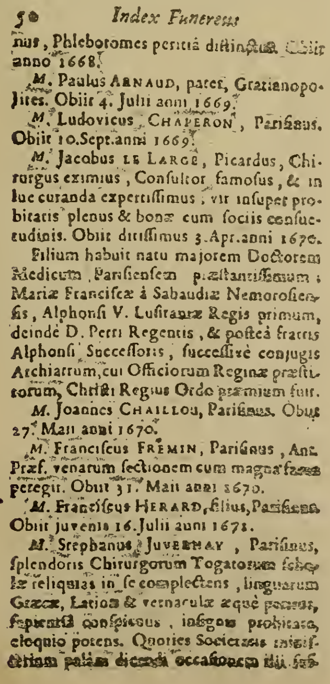
"I hope that I have replied to your questions in a satisfactory manner. If some point yet remains obscure, I place myself at your disposition. At all events it is perfectly clear, that

"1. The painted portrait of which you have sent me the photograph is that of F. Hérard, painted by Sicre.

"2. The two engravings of the Paris Library were made by Cossin after this portrait.

"3. That the robe with which this personage is invested, as well as his collar, are of the second half of the 17th century, and such as surgeons then wore (tels que les portaient alors, les chirurgiens)."

M. Le Paulmier has kindly volunteered to send me the engraving of Hérard, if a copy should ever turn up. In the meantime I requested Adolphe Braun & Cie. to make a photographic facsimile of the engraving before the letter, which has the written inscription concerning Hérard, and also of the leaves of the "Index Funereus" which refer to the Hérards. Of this I will ask the acceptance of this Society.



50 *Index Funereus*

nus, Phlebotomes peritiâ diſtinctus. Obiit anno 1668.

M. Paulus ARNAUD, pater, Gratianopolites. Obiit 4. Julii anni 1669.

M. Ludovicus CHAPERON, Pariſinus. Obiit 10. Sept. anni 1669.

M. Jacobus LE LARGE, Picardus, Chirurgus eximius, Conſultor famoſus, & in lue curanda expertiſſimus; vir inſuper probitatis plenus & bonæ cum ſociis conſuetudinis. Obiit ditiſſimus 3. Apr. anni 1670.

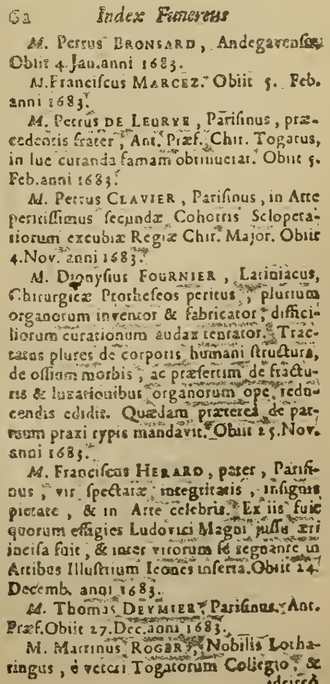
Filium habuit natu majorem Doctorem Medicum Pariſienſem præſtantiſſimum; Mariæ Franciſcæ à Sabaudiæ Nemoroſienſis, Alphonſi V. Luſitaniæ Regis primum, deindè D. Petri Regentis, & poſteà fratris Alphonſi Succeſſoris, ſucceſſivè conjugis Archiatrum, cui Officiorum Reginæ præſtitorum, Chriſti Regius Ordo præmium fuit.

M. Joannes CHAILLOU, Pariſinus. Obiit 27. Maii anni 1670.

M. Franciſcus FREMIN, Pariſinus, Ant. Præf. venarum ſectionem cum magna fama peregit. Obiit 31. Maii anni 1670.

M. Franciſcus HERARD, filius, Pariſinus. Obiit juvenis 16. Julii anni 1671.

M. Stephanus JUVERNAY, Pariſinus, ſplendoris Chirurgorum Togatorum ſcholæ reliquias in ſe complectens, linguarum Græcæ, Latinæ & vernaculæ æquè peritus, ſapientiâ conſpicuus, inſignis probitate, eloquio potens. Quoties Societatis [illegible] palàm dicendi occaſionem illi [illegible]



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M. Petrus BRONSARD, Andegavenſis. Obiit 4. Jan. anni 1683.

M. Franciſcus MARCEZ. Obiit 5. Feb. anni 1683.

M. Petrus DE LEURYE, Pariſinus, præcedentis frater, Ant. Præf. Chir. Togatus, in lue curanda famam obtinuerat. Obiit 5. Feb. anni 1683.

M. Petrus CLAVIER, Pariſinus, in Arte peritiſſimus ſecundæ Cohortis Sclopetariorum excubiæ Regiæ Chir. Major. Obiit 4. Nov. anni 1683.

M. Dionyſius FOURNIER, Latiniacus, Chirurgicæ Protheſeos peritus, plurium organorum inventor & fabricator, difficiliorum curationum audax tentator. Tractatus plures de corporis humani ſtructura, de oſſium morbis, ac præſertim de fracturis & luxationibus organorum ope reducendis edidit. Quædam præterea de partuum praxi typis mandavit. Obiit 25. Nov. anni 1683.

* *M.* Franciſcus HERARD, pater, Pariſinus, vir ſpectatæ integritatis, inſignis pietate, & in Arte celebris. Ex iis fuit quorum effigies Ludovici Magni juſſu æri inciſa fuit, & inter virorum ſe regnante in Artibus Illuſtrium Icones inſerta. Obiit 24. Decemb. anni 1683.

M. Thomas DEYMIER, Pariſinus, Ant. Præf. Obiit 27. Dec. anni 1683.

M. Martinus ROGER, Nobilis Lotharingus, è veteri Togatorum Collegio, & idcircò

Original Articles.

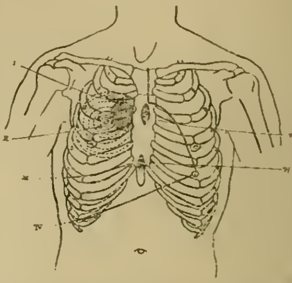
CASE OF MYXO-CHONDROMA OF THE CHEST, PROBABLY ORIGINATING FROM THE CARTILAGE OF A RIB OR BRONCHIAL TUBE.[1]

BY FREDERICK C. SHATTUCK, M.D.,

Professor of Clinical Medicine in Harvard University, Visiting Physician to the Massachusetts General Hospital, etc.

S. M., thirty-three years of age, of good habits and family and personal history, presented himself in the surgical out-patient room of the Massachusetts General Hospital in January, 1889, and was kindly referred to me by Dr. F. B. Harrington, who recognized the existence of an intra-thoracic tumor. In the summer of 1887, after working hard in the hay-field all day, and while sweating freely, he stood in a pond for half an hour or so in water up to his knees. The following day he was taken with pain in the right front of his chest, catching him on long breath, but unaccompanied by cough. He kept the bed for nine days, as he "felt all played out." Two weeks after leaving the bed he took a short drive, immediately after which the pain and soreness in the chest and the exhaustion returned, and he was obliged to keep the bed for nearly four months. Since then he has been up and about and has worked a little; but the pain and soreness have never left him. These symptoms are aggravated by exertion. Palpitation and shortness of breath after exertion gradually came on. About six months ago he first noticed prominence of the right chest over the seat of pain, and for two months he has noticed fullness at the epigastrium, just at the tip of the ensiform cartilage, with soreness and tenderness on pressure. Recently he has had to be careful in his diet, and has suffered from eructations, nausea, and occasional vomiting, the latter usually about an hour after taking food. He stated in the most positive manner that his symptoms, general and gastric alike, are present now every second day, quite absent on the alternate days; that if he felt as well every day as he does every other day he would be content. It could not be learned that he had ever been in a malarial region, nor did he present any indication of malarial infection other than this remarkable periodicity in his symptoms.

His general nutrition, color, and muscular strength were good, and physical examination was negative in its results except as regards the anterior portion of the right chest, the condition of which is well shown on the accompanying chart. There was no tenderness save at the spots over the sternum as indicated. Stethometric measurement showed that the difference in the contour of the two sides of the chest was slight; the right was one-half inch the larger. Over both backs the respiratory murmur was more feeble than is usual in a man of his build. A needle was inserted in the second interspace three fingers'-breadth from the right sternal border. After apparently passing through the integument and muscle, the needle was arrested, but moved on again when moderately increased force was applied, giving the sensation as if it had passed through a rather thin, bony or cartilaginous wall. When suction was applied about ℥ii of a yellowish and somewhat opaque fluid was withdrawn; the needle was then pushed in deeper — nearly five inches — and a little more of a similar fluid was obtained, thus suggesting the presence of fluids in pockets. An examination of the fluid by Dr. Gannett showed that it contained mucin in considerable quantity, with numerous, large, round cells containing fat drops. The presence of mucin and the seat and duration of the tumor, taken in connection with the relatively good condition of the patient, seemed to justify a diagnosis of myxo-chondroma of the chest, originating either from the cartilage of the ribs or bronchial tube, probably the former.



I. Nearly flat. II. Marked dulness. III. and IV. Hepatic flatness. V. and VI. Tender spots. At the time of the second tapping the dull area, with feeble respiration and voice sounds, extended upward above the right clavicle and across the sternum. Three punctures in all were made in the second right interspace three fingers' breadth from the sternal border; one, superficial, toward the tip of the ensiform cartilage.

The patient felt too well to remain in the hospital and was discharged with a prescription for generous doses of quinine.

Several weeks later he wrote that he was feeling much better and that every day was a good one as compared with the time preceding his entrance to the hospital. April 22nd at my request he came again to town and reported that his symptoms had returned in great measure, and that his stomach was very irritable at times, accepting food some days only once in the twenty-four hours, and that food only of certain kinds. Other days he could eat almost anything with comfort. He could not connect this variation in the temper of his stomach with anything in his manner of life or outward circumstances.

On stripping him I was immediately struck by the increase in the size and area of the thoracic tumor, which now extended to the left to a point midway between the left sternal border and the mammillary line, and from the lower border of the second left to that of the fourth rib. Deep fluctuation was also present on both sides, examination with the patient on his hands and knees, as well as in the upright position, seeming to show that the fluid lay between the pectoral muscles and the chest wall. The dulness over the right top was more marked, and the cardiac impulse was seen and felt farther to the left than formerly — just beyond the mammillary line. Just over and about the ensiform cartilage, and extending somewhat toward the right nipple, there was a blush on the skin, with slight swelling; over a small and somewhat elongated area over the tip of the ensiform cartilage there was distinct fluctuation. The distinction between the ribs and the interspaces on the right side could not be made out as clearly as before.

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[1] Reported, with exhibition of the patient and the fluid, before the Boston Society for Medical Improvement, April 22, 1889.

I again inserted a needle in about the same place as before, but this time did not meet with any notable variation in resistance, and at a depth of about two and one-half inches obtained a fluid in every way similar to that above described. Only about ʒii was withdrawn, although I tried different depths, pushing in and withdrawing the needle. After the fluid was removed the external swelling over the right front was seen to have distinctly subsided, that over the left remaining unchanged. I then put another needle under and nearly parallel with the skin over the ensiform cartilage, and took a few drams of similar fluid. The disease is certainly advancing on the right, has invaded the left side, and has apparently infiltrated some of the ribs and cartilages. Nevertheless the patient suffers comparatively little pain, and his general condition is remarkably good. As yet no vital structures have become seriously involved, and, extension taking place laterally rather than inwardly, the great vessels are still unaffected. Perhaps the gastric symptoms are to be referred to the involvement of some branches of the pneumogastric in the growth. Careful inquiry fails to show that deglutition is impaired. Indeed, there are no evidences of pressure except on the right primary bronchus perhaps. This case represents a rare form of disease, so rare as to receive only passing mention in the leading pathological and clinical text-books. The lung is a not infrequent seat of metastatic deposits of chondroma, but no extra-thoracic source can be found in this case. The tendency of the disease to extend outward rather than inward would seem to make it more probable that the disease starts from a rib than from a bronchus cartilage in this patient. It will doubtless prove fatal, but I fear that it will be impossible to secure an examination, as the patient lives in another State.

PUERPERAL METRITIS COMPLICATED BY MALARIA.

A. L. NORRIS, M.D., OF CAMBRIDGEPORT.

Mrs. S., aged twenty-four, living in Cambridge, was delivered, April 6, 1888, of her first child, female, weighing six pounds.

The first stage of labor was normal, lasting ten hours; second stage severe, of three hours' duration, and completed with forceps under ether, with but little difficulty; third stage of labor unimportant, placenta following in about fifteen minutes; some coagula removed by the hand; the uterus then contracting firmly. Slight laceration of the perineum, less than one-half inch in extent, which was at once brought together by a single silver wire suture, and the patient left an hour later perfectly comfortable.

Patient was next seen the following day, April 7, at 7 A.M. Her pulse was then 120, temperature 104°. The nurse reported a slight chill occurring between 4 and 5 o'clock in the morning. Lochia abundant. Carbolic vaginal injections ordered. That night the patient seemed about as in the morning, expressing herself as comfortable, yet feeling a little nervous; pulse 128, temperature 104½°; lochia abundant but somewhat offensive. Carbolic acid injections ordered every hour till lochia became less offensive and then every two hours. Tinct. veratrum viridis and quinine also prescribed.

April 8, A.M. Pulse 132. Temperature 105°. Tinct. of veratrum viridis continued and twenty grains of quinine in divided doses given. At 6 P.M. the pulse was 140 and temperature 106°. Dr. Morrill Wyman called in consultation. Half-past nine P.M.: Pulse 136. Temperature 105.6°. Treatment continued.

April 9, 1 o'clock A.M. Pulse 120. Temperature 103.4°. Hot carbolized douches have been given as directed, with egg nogg, etc. At this time, by suggestion of Dr. Wyman, a vaginal douche of 5 per cent. solution of salicylate of soda was given, with sulphate of morphia ¼ grain internally. Ten A.M.: Pulse 128. Temperature 103.2°. Feeling better. Bowels moved by enema. Vaginal douche continued. Three P.M.: Pulse 112. Temperature 103°. Eight P.M.: Pulse 104. Temperature 101.4°.

April 10. Patient was seen at 2.30 o'clock in the morning. Pulse 100. Temperature 100.5°. Complains of pain in breasts and lung. Belladonna ordered. Twelve M.: Pulse 104. Temperature 100.5°. Treatment continued. Eight P.M.: Pulse 120. Temperature 101.5°. Milk secreting; lochia improving in quantity and quality.

April 11, A.M. Pulse 100. Temperature 100°. A disagreeable odor was noticed in lower hall on entering house, as if originating from the cellar, and increased at first landing, where a water-closet was located.

April 12, A.M. Pulse 128. Temperature 104.2°. Appears a little flushed and excited. Veratrum viride, which had been omitted during the last two days, now renewed, five drops being given every hour. 4 P.M.: Pulse 140. Temperature 105.4°. Veratrum viride increased one drop hourly up to nine drops. Eleven P.M.: Pulse 120. Temperature 103.2°.

April 13. Patient rested well during night under the influence of opiates. Temperature at 6 A.M. 101°. At 7 P.M. 98.4°. Pulse 98. Urine normal. Treatment continued.

April 14, A.M. Temperature 98.4°. Pulse 92. Veratrum viridis omitted; quinine, brandy, milk continued. P.M.: Temperature 98.4°. Pulse 116.

April 15, A.M. Pulse 120. Temperature 103.5°. Says she feels well. P.M.: Pulse 108. Temperature 103°. Has had a little tenderness over the region of right ovary; no pain except on severe pressure.

April 16, A.M. Pulse 104. Temperature 100°. Silver suture removed from perineum. 2 P.M.: Was suddenly summoned to see patient, and on arrival found her just recovering from a severe rigor, which had occurred at 12.30 M. Pulse 144. Temperature 105°. Ordered veratrum viride, six to eight drops hourly. On examination found no milk in breasts. No abdominal tenderness. No phlebitis of legs. Ten P.M.: Pulse 120. Temperature 102.5°.

April 17, A.M. Pulse 104. Temperature 101.6°. Patient has had a good night and looks and feels much better.

April 18, A.M. Pulse 88. Temperature 98.4°. Eight P.M.: A severe chill lasting some twenty minutes. Pulse 120. Temperature 104°. Gave brandy and applied turpentine stupes to abdomen.

April 19, A.M. Pulse 108. Temperature 101.4°. On physical examination a slight pelvic cellulitis was found. No fluctuation. Uterus movable.

April 20, A.M. Pulse 108. Temperature 98.6°. Has taken three pints of milk and one of brandy. Looks and feels better. P.M.: Pulse 100. Temperature 100°. Two weeks since confinement. Looks somewhat anxious. Had "symptoms" of a chill at 4.30 A.M. and 1.30 P.M., but no chill. Small cantharidal blister applied over right ovary and opiate given by rectum.

April 21, A.M. Pulse 112. Temperature 99.5°. On vaginal examination the os was found somewhat patulous, with lateral fullness in region of right ovary. No tenderness even by manipulation. Hot carbolized douches ordered every two hours at least. P.M.: Pulse 120. Temperature 102.6°. Tinct. opii given by the rectum.

April 22, A.M. Pulse 120. Temperature 102.4°. Patient looks anxious. Mouth dry. Tongue furred. P.M.: Pulse 116. Temperature 101.5°.

April 23, A.M. Pulse 120. Temperature 120°. Codeia, grain i, ordered as required. P.M.: Pulse 112. Temperature 100.8°. Nurse reports some additional show of fresh lochia, red and without odor. There has been no odor for days about the napkins. There was marked odor noticed in the house to-day, above and below stairs; and on personal inspection I found a faulty drain and open cesspool in the cellar, and the water-closet absolutely without ventilation except by a door opening into the hall on the second flat, at the head of front stairway, opposite the door of the lying-in chamber. The cesspool was very offensive, and had not been cleaned for over two years. The sink-spouts in both kitchens, above and below stairs, were foul, with strong odor of sewer gas.

April 24. Ventilator put in water-closet to-day, after approved pattern. Patient sat up in bed five minutes and felt better. Treatment continued, with codeia at night.

From this time on the patient continued to improve in all her symptoms, — on the 27th of April, three weeks after her confinement, being able to sit up for half an hour in an arm-chair. Tongue clean. Countenance good. No lochial discharge. Pulse and temperature normal. Patient and all the people in the house notice the great improvement from ventilation of the cellar and water-closet.

It would lead us too far to consider all the theories which have been brought forward to explain the occurrence of puerperal fever, were it only from an historical point of view. No monograph extant is better than the admirable classical essay of Dr. O. W. Holmes on "Puerperal Fever," published in 1885. Recently two opinions have contended for supremacy. According to the one puerperal fever is due to a miasma formed by the crowding together of puerperal women, and according to the other it is due to the absorption of septic material. The purely miasmatic theory, that puerperal fever is due to infection with a specific material formed under atmospheric, cosmic, and telluric influence, which, acting exclusively upon puerperal women, causes puerperal fever, so that puerperal fever becomes a malarial fever, is perhaps quite tenable. And the opinion is still somewhat prevalent that puerperal fever is, like typhus, of miasmatic origin, and that under suitable conditions the diseased organism may reproduce the virus and propagate it to other predisposed individuals without the original miasma being still active; so that in the course of the miasmatic disease a contagium is generated and propagated to others as the determining cause of the disease.

Possibly "puerperal endometritis" would have correctly defined the pathology of the foregoing case. Dr. T. Addis Emmet, on "Metritis," says: "I have frequently met with congestive hypertrophy among females who had lived in some of the malarial districts of the Southern States. This enlargement of the uterus remained as one of the sequelæ of repeated attacks of intermittent fever after the condition of the general system had become impaired. The venous congestion of the pelvis, with the enlargement of the uterus, was brought about after the vessels had lost their tone, from the frequent backing up and obstruction to the return circulation through the portal system." We have in Cambridge a zone or belt of district lying along the borders of marshy land within Charles River Basin, where during the past few years have occurred something like a score of cases of intermittent fever. My case would be classed as coming in that district.

ELEVEN CASES OF OPERATION FOR APPENDICITIS.

BY EDWARD R. CUTLER, M.D., WALTHAM.

I propose to give a very brief sketch and analysis of eleven cases of appendicitis treated by operation during the past two and a half years in my vicinity. I have met during that time a considerably larger number of cases, closely resembling these at the outset, all of which have recovered without operation, though one at least with serious damage.

In several of these latter cases the question of operation has been anxiously discussed. In only one of them do I regret not having operated, and in that one there was really no time even for discussion, my first visit being made late in the evening and discharge occurring through the intestine before morning, the final result being the sloughing out bodily of four inches of the rectum with the recto-vaginal septum and the perineum.

I shall group these cases pathologically, not chronologically.

The first group comprises six cases of abscess, either extra-peritoneal or encapsulated within the peritoneum.

Case I. June 20, 1886. A. B. C., conductor. Gradual formation of tumor in right inguinal region, with all the usual symptoms. No general peritonitis. Aspiration and incision on the ninth day. Drainage for two weeks. Free discharge of fæces on the sixth and seventh days after incision. Healing complete on the eighteenth day and health good since, except for the development of a very intractable inguinal hernia.

Case II. In the practice of Dr. Worcester. Nellie M., nine years old, August 18, 1886. Ordinary symptoms of appendicitis for nine days. Physical signs less marked than in previous case, but notable dullness in right inguinal and lumbar region at the end of that time without general peritonitis. Aspiration and incision. Lump of fæces discharged with the first gush of pus. Drainage six days. Child in school at the end of three weeks.

Case III. B. M., boy of thirteen. July 13, 1887. In the practice of Dr. C. J. McCormick. Usual symptoms accompanying gradual growth of a distinct tumor in right inguinal region, without general peritonitis, for six days. Then aspiration, incision, and successful drainage for three days, when patient died, apparently of exhaustion. No autopsy allowed.

Case IV. Dr. A. Worcester, 32. October 29, 1887. Surgical treatment of this case was in the hands of Dr. J. W. Elliot, of Boston. This case has been fully reported, and I very briefly mention the important points in it, viz., intense pain much of the time; general peritonitis; unsuccessful aspiration on the sixth day; laparotomy on the eighth day; opening and drainage of intra-peritoneal abscess. Wound closed in ten weeks and recovery perfect.

Case V. C. E. L., machinist. September 5, 1888. In the practice of Dr. Worcester. Moderate pain and fever twelve days, with gradual formation of tumor in right inguinal and lumbar region without general peritonitis. Incision, counter opening, and drainage through posterior lumbar region, and uninterrupted recovery.

Case VI. Boy of 12. October 25, 1888. Practice of Dr. Tilton, of Lexington. Gradual development of tumor in usual location through a week or more of general peritonitis. Incision, drainage, and recovery.

Brief analysis of this group shows recovery in all except one and absence in all of purulent peritonitis. In the case of Dr. Worcester there probably was general peritonitis, judging from the uniform distention and tympany, but there was no free pus in the abdominal cavity. In five of the cases there was distinct dulness on percussion, with more or less well marked cake or tumor.

The second group comprises five cases of general purulent peritonitis, though the last one may seem at first sight to be an exception:—

Case VII. Fred L. C., clerk. Early in 1887. In the practice of Dr. Bancroft. Imperfect history. Abdominal pain four days. Domestic treatment by cathartics. When first seen by Dr. Bancroft late in evening, there was temperature 99°; pulse 130. General peritonitis. Next morning patient moribund, but it was decided to open abdomen and flush it with hot water in hope of setting up reaction. Incision was followed by discharge of a small amount of fetid pus, but reaction did not occur and patient died in two hours. Autopsy refused.

Case VIII. Wm. H. McA., storekeeper. April 20, 1887. History of constipation with abdominal uneasiness several days, followed by sudden and severe pain, vomiting, etc., and gradual development of signs of peritonitis during next three days with only very slight dulness in right inguinal region, and no tumor. At the end of this time the aspirator was introduced, but pus, perhaps two ounces, found only at the third thrust, which was made in the lumbar region the full length of the needle.

Incision in linea semilunaris revealed intense purulent peritonitis. Patient died in ten hours. Autopsy showed, beside usual evidences of peritonitis, a long appendix turned up under cæcum, with its point well towards the middle line, where was more pus than anywhere else. The aspirator needle had undoubtedly reached this small collection, passing through or under the ascending colon to do so. The appendix was perforated near its distal end.

Case IX. In the practice of Dr. Bancroft, of Wellesley. Boy of ten. November 4, 1888. Tenth day of sickness. Intense general peritonitis supervening on the usual symptoms. Patient very weak and cyanotic and abdomen greatly distended. Prognosis very grave. Laparotomy. Abdomen full of pus and recent adhesions. No attempt to search for appendix on account of patient's condition. Boy died during following night.

Case X. D. M., laborer. Nov. 28, 1888. Severe sudden pain in abdomen, with vomiting. Saw patient after twenty-four hours. Found abdominal walls very tense and retracted. Great tenderness in right inguinal region, but no dulness or tumor. Next day only slight change. Next day abdomen considerably distended. Laparotomy. Intense general peritonitis with adhesions, but no shutting off of seat of original disease. Pelvis filled with pus. After a little search the appendix was found fastened in a mass of adhesions on the edge of the pelvis. After liberating it, it stood up out of the incision at least three inches in length and with its swollen envelopes one and a half in thickness at the base. Of course it is now shrunken out of all comparison with its size when *in situ*. The distention of the abdomen and the adhesions made it very difficult to get at the origin of the appendix in the cæcum, and so no attempt was made to approximate the peritoneal surfaces of the stump; but the appendix was simply tied with silk and amputated. The patient began to fail in a few hours, and died before the next morning. No autopsy could be obtained.

Case XI. S. C. W., station agent. Dec. 21, 1887. Violent pain in right inguinal region, with tenderness, vomiting, and fever, but absolutely no physical sign. Laparotomy at end of forty-eight hours. A little turbid serum escaped, but no pus. The appendix was readily found and drawn out at the incision, together with a portion of the cæcum. It was not more than one and one half inches long, swollen quite hard and standing straight out from the cæcum, which was likewise intensely inflamed. It was perforated at two points adherent to a contiguous coil of intestine, gangrenous superficially and exceedingly friable through its whole substance. Its mucous lining was red and thick. I could find no communication between its lumen and that of the cæcum. The peritoneal investment of all the adjacent parts was deeply congested. The appendix was cut off near the cæcum and its peritoneal surfaces rolled together as well as the brittle condition of the stump would permit and fixed by a continuous suture of fine catgut. Drainage for a few days. The patient left town in just two weeks, and remained well at last accounts several months after operation. I have said that the last case may *seem* to be an exception in a group of cases of purulent peritonitis, but when it is remembered that the operation was done in forty-eight hours from the first pain, and that a perforated, intensely inflamed, and even gangrenous appendix lay almost free in the abdominal cavity, I think no one can doubt that in forty-eight hours more we should have had an abundance of adhesions and pus in place of simple redness and turbid serum.

Clinically and therapeutically these cases require a slightly different grouping, that of Dr. Worcester falling into the second group. The distinctive features of the first group are the gradual development in the right inguinal region of a hard mass or tumor, during a week or more of fever, pain, etc., and which marks the pointing of an abscess. The mass is dull on percussion, though there may be an obscure and deep tympany. It is evidently in contact with the abdominal walls, and is to be distinguished from a deep globular swelling which forms in still milder cases, but which does not reach the surface and which undergoes resolution. The unmistakable, though not urgent, indication is for incision and drainage. The second group is characterized by more intense and persistent pain limited to the right inguinal region at first, but soon spreading more or less through the abdomen and by the other signs of general peritonitis, especially tympany and distention. Whether this state of things develops rapidly from the very beginning of the case or supervenes later upon a mild attack, the lesson of these cases I think is that laparotomy should be promptly done, the perforated, inflamed appendix removed, together with any other offending substance which can be found. The indication is imperative and urgent, and every hour's delay is dangerous.

Had it been early enough heeded in the four fatal cases of this group, I fully believe the result would have been more favorable. In two of them I thought at the time that the operation was reasonably early — the fourth day in one, and the third day in the other, but the result proved it otherwise. The gratifying issue of the case operated upon within forty-eight hours strongly corroborates the above inference. Here no time was lost in waiting for peritonitis, the almost uncontrollable pain, with continual fever, seeming to us to justify extreme measures. I think the relentless and morphia-defying pain often accompanying peritoneal perforations as well as the early stage of purulent inflammation of serous membranes has not been ranked as high as it should have been as a pathognomonic symptom and a therapeutic indication.

Finally, I shall hazard the expression of a belief which I certainly entertain that if every case, without exception, of undoubted appendicitis — and the diagnosis is seldom doubtful — were treated on the second, or at latest the third, day of persistent symptoms by the removal of the appendix and its escaped contents if possible, we should avert in the aggregate a vast amount of pain, expense, and loss of time from our patients, and we should save many more lives than we do now. True, the majority of cases recover. How many of them, however, do so after protracted illness and with serious disability and great likelihood of recurrence. How many of them would have recovered much more speedily and permanently after operation no one can say. I believe nearly all.

I know the time is not ripe for taking this stand in practice, but I believe it is rapidly ripening.

Clinical Department.

THREE CASES OF PERITYPHLITIS; WITH RECOVERY.[1]

BY WILLIAM A. DUNN, M.D.

In presenting the following cases of perityphlitis I am not unmindful of the fact that in their treatment they bear a rather unusual contrast to the ever-increasing report of cases of typhlitis, appendicitis, and other important complications of the intestinal canal and its adjuncts. Without a recourse to laparotomy, recoveries from inflammation of the cæcum and its surrounding parts must certainly be not only a source of gratification, but also an earnest incentive for persevering effort to those whom the cacoethes operandi has not possessed, and in those cases in which an operation is not permitted. *Apropos* of the numerous reports of laparotomies with which the Medical Journals have teemed for a certain recent period, the question arises, Has medical fashion concentrated the energies of its votaries on laparotomy as they formerly affected an operation on every inflamed cervix which could be distorted into a laceration? Shall we have discovered, as in operations for lacerations of the cervix, that the desire to have performed laparotomy may have stimulated the medical attendant too hastily to his decision and may have blinded him to the probable efficacy of other than surgical means for recovery? In these preliminary remarks I refer particularly to the laparotomies which are performed in some cases too early and without carefully weighing the probable curative processes of nature, and in other cases too late, as in the four cases of perforating typhoid ulcer reported some time ago, with a fatal result in each case. The pronounced successes reported by Dr. W. T. Bull,[2] of New York, the compilation by Arthur E. J. Barker, F.R.C.S.,[3] of the laparotomies performed by many of the most celebrated surgeons abroad, and the successes attained by many of our local surgeons attest the efficacy of the operation, yet all cases of perityphlitis do not demand an operation. Flint, Jackson, and others have reported cases of perityphlitis which have ended favorably without surgical interference. It is a mistake to suppose that perityphlitis is necessarily associated with perforation. Flint says that he has "not met with perforation followed by either general peritonitis or fecal abscess in a case of acute inflammation of the cæcum." In view of this quotation from Dr.

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[1] Read before the Boston Society for Medical Observation, January 7, 1889.

[2] Medical News, vol. liii. No. 13.

[3] London Lancet, No. vi of vol. ii., 1888, p. 262.

Flint it must be inferred that either the type of this disease of the cæcum has changed since his day, or that we do not apply similar remedies, or that there is not the pressing necessity for the operation of laparotomy for perityphlitis and kindred troubles which impresses a certain portion of the surgical world. In reference to laparotomy in this connection, Dr. Joseph Ransohoff, of Cincinnati, made the following remark at the late meeting of the American Surgical Association at Washington: —

"There are two classes of perityphlitis. In one there is a distinct tumor, and in these early operation is by no means indicated. In these cases adhesions have formed, and there is a natural tendency to cure. In these cases the abscess finally perforates the abdominal wall, or is relieved by incision. The second class is that in which the symptoms of perforation develop suddenly; in these cases the incision should be median."

A brief report of the cases operated upon was then given and the following conclusions presented: —

Our present knowledge justifies the statement that both the cæcum and appendix may be the starting-point of an inflammation spreading to the peritoneum or to the peritoneum and cellular tissue of the iliac fossa, constituting a complicated lesion which for convenience' sake we may call "perityphlitis." This may be, in its clinical course, resolving or suppurative; each marked by definite symptoms in some cases, in others difficult to recognize.

Needle exploration is a justifiable and desirable method of diagnosis, though attended by some risks. These may be reduced to a minimum if care be taken to reserve the practice for cases in which the symptoms have lasted several days and in which a distinct indication, "tumor," can be made out.

Suppurative perityphlitis may be a spreading or limited (circumscribed) perityphlitis. Both begin with the same set of symptoms, and it is important to discriminate between them in the first twenty-four or forty-eight hours, or even on the third day.

The presence of any local or constitutional signs of general peritonitis justifies the diagnosis of a spreading or generalization, and calls for the performance of laparotomy and the repair of the lesions found.

The absence of these signs or their strict localization warrants delay of a varying length. Any time after a week the abscess may be opened by an incision which must reach the pus, whether it be extraperitoneal or intraperitoneal.

Case I. Nov. 12, 1880. D. W., aged twenty-eight, of sedentary habits, thirty hours after a liberal indulgence in various indigestible foods, complained of a severe chill, which was followed by high febrile movement, vomiting, diarrhœa, and pain in the right iliac region. The patient was seen at 5 p.m.; decubitus dorsal with flexed knees. There was intense pain in the right side at the iliac region, which was keenly sensitive to pressure; nausea present; pulse bounding, full, strong and 110, temperature 103°. An examination revealed a prominent abdomen, with resonance and freedom from pain everywhere except in the region of the cæcum, where there was a distinct tumor as large as a man's fist, in which the hardness and pain became distinctly lessened, radiating from the centre of the mass towards its margin. A subcutaneous injection of morphine, $\frac{1}{4}$ grain, was given, which was repeated, and followed by suppositories of $\frac{1}{4}$ grain every hour, after enemata of oil and warm water had been given without the desired effect. Ice and champagne were administered for the thirst and vomiting. Blisters and afterwards flaxseed meal poultices were applied to the abdomen. There had been no constipation previous to the present attack.

November 13th. Very restless, pain less, nausea. Tumor less tender, but unchanged in other features. Pulse 102, temperature 101.6°. No special tympanitis; legs flexed. Treatment continued. A tube was inserted as high as the sigmoid flexure. A slight amount of flatus came, with no relief. For several days the patient presented very few new features. The vomiting disappeared, the nausea gradually became less, the temperature fell to 99$\frac{1}{2}$° and the pulse to 88 on the sixth day. The pain gradually diminished as the tumor in the right iliac region became less. Enemata of warm water and oil were administered daily with slight results.

On the 10th day the temperature was 99°, pulse 90, the tongue had begun to present moist and uncoated sides and tip, and, although the swelling in the right side could yet be plainly distinguished, it was not so distinctly circumscribed. There was less tenderness on pressure, and there were very encouraging indications toward resolution. The legs were no longer flexed, and micturition, which had been painful during the first few days of his illness, was now free and painless.

November 29th. A slight swelling yet exists in the right iliac region; the tenderness has diminished until at present it exists to a slight degree; temperature 99°, pulse 84; liquid diet. He moves in bed with no discomfort. There is no pain except on pressure.

December 5th. Temperature 98.5°, pulse 80. There is no swelling distinguishable, tenderness exists only on deep pressure, tongue almost clean. Diet directed so that there will be as little fecal residue as possible.

December 12th. Apparently well. During the progress of the disease the probable necessity for an operation was continually considered. In the absence of pressing indications, conservatism was warranted and rewarded with a satisfactory result.

Case II. presented symptoms so similar to those just related that I will report the history without detail.

J. S. had been a dyspeptic for three years previous to April 20, 1888, when the present illness appeared.

Twenty-four hours previous to my visit he had complained of intense pain, tenderness, and swelling in the right iliac region over the cæcum. When I saw him his facial expression indicated severe pain and anxiety. His legs were flexed, decubitus dorsal. Vomiting had persisted for twelve hours. Pulse was full, bounding, and 108, temperature 102°. There was marked tenderness on pressure over a hard, swollen, oval mass between three and four inches in diameter. The treatment mentioned in the first case followed with very little variation. For the first three days the temperature varied in the morning from 101.3°–103.8°, and the pulse from 100 to 116. There was painful micturition and occasional nausea. After the third day the swelling became less resistant, with a diminution of the pain and tenderness. These symptoms gradually became less and less pronounced, the tongue became less coated, and on the fifteenth day almost every indication of the cæcal swelling and attendant symptoms had disappeared. At the end of three weeks the ordinary diet was allowed and the fæces had become natural.

Case III. J. M. had been complaining of a moderate amount of pain in the right iliac region for a week before April 30th, when I was called. He had been attended by a physician who was obliged to leave town.

When I saw him he was perspiring profusely; pulse 128, temperature 103.5. His facial expression denoted great agony. Decubitus dorsal. Abdomen was swollen and very tympanitic and tender. There was marked tenderness on pressure over the region of the cæcum, in which a hard, globular mass about the size of a medium-sized orange could be detected. Although there was a moderate amount of pain over the tympanitic abdomen, it was slight when compared with the pain at the iliac region. I feared a perforation, and advised an operation, which was positively refused. Although my prognosis was very discouraging, I determined to persevere, and to give the patient the benefit of the doubt. Digitalis, minims ten, and carbonate of ammonia, grains five, were administered with brandy, one ounce, every two hours. A subcutaneous injection of sulph. morph., ¼ of a grain, was given and repeated. An enema of spirits of turpentine and sweet oil partially relieved the tympanitis. There was no vomiting, although nausea had persisted for several days; thin poultices were applied to the abdomen.

May 1st. There was very slight improvement in the patient's condition. The enema of turpentine and oil was repeated with some relief. The treatment of the preceding day was repeated.

May 2nd. The pulse was stronger, more resistant, and had fallen to 108. Temperature 102°. The tympanitis had greatly diminished, the nausea was less, there had been two loose discharges of fæces from the bowels. The cæcal tumor appeared to be about one-quarter less in size than on April 28th, and somewhat less tender. The patient could move his legs and straighten them with less discomfort than on the previous day.

After May 4th the patient progressed appreciably every day. The cæcal swelling became less tense, and the pain and tenderness gradually diminished. Micturition, which had been painful since April 27th, became easier.

On May 7th pulse was 90. Temperature 99.5°. The swelling had diminished at its densest portion at least one half, the pain and tenderness were slight in comparison with his previous suffering.

On the 14th May the swelling had almost completely disappeared. The pain and tenderness were not noticeable. All of the symptoms denoted rapid convalescence. There had been one slight semi-solid discharge from the bowels. The tongue was cleansing. Decubitus was on either side at will. The legs were not flexed. Temperature 99°, pulse 82.

May 28th the swelling had wholly disappeared, the pulse was 80; temperature normal; tongue was moist and clean; the appetite had returned; and there had been for the past five days normal fecal discharges. There was no tenderness of any part of the bowels.

On May 30th I considered the patient practically well.

A CASE OF APPENDICITIS: WITH AUTOPSY.

BY WILLIAM INGALLS, M.D.

January, 1886. A lad eleven or twelve years old was seen by me for the first time on the 20th of January, 1886. He was lying on a couch on his back, his knees not drawn up, thin of body and limbs, countenance not particularly anxious, nor was there expression of suffering; pulse 108; temperature 102°. Had had no alvine dejection for two days; when he had pain it was in the right iliac region, upon examining which there was found to be a prominence or swelling rising upon the surface of the abdomen half an inch high, oblong two inches, as though an egg were beneath the integuments. He could bear gentle palpation over the whole abdomen, but there was sensitiveness and flinching when it was practised over the swelling. No disturbance as to urination in answer to inquiry.

January 21. By small and repeated doses of opium the past twenty-four hours were passed in tolerable quiet and freedom from pain. Pulse 108; temperature 103°. He had had a fecal dejection in the night. The swelling had disappeared; the surface of the abdomen was normal to sight, not very sensitive to touch.

January 22. Patient was found in a state of collapse, which occurred in the night, suddenly. Pulse of great rapidity, temperature not taken. Through the spot where the swelling was, the longer needle of the hypodermic syringe was thrust perpendicularly, and pressure after it caused it to enter its full length; that and two other punctures near by gave negative result.

Dr. C. D. Homans in consultation. We considered the question of opening the abdomen; the collapse, the high pulse, the low temperature, seemed to forbid the attempt, besides which, from all we could learn, the disease began fifteen days previous to the consultation. Soon vomiting began, which nothing seemed to check.

AUTOPSY.

Autopsy, January 24, by Dr. John Homans, 2nd, 10 hours after death: —

Rigor mortis well marked. The abdomen only was opened.

On section of the abdominal walls the peritoneum and intestines appeared generally pale in color but showed a few red spots due to injection of smaller blood-vessels. The coils of intestine were in one or two places glued together by fresh exudations.

In the ilio-cæcal region intestines were darker in hue and firmly bound together by masses of fresh lymph and recent adhesions which enclosed an abscess cavity lying entirely within the peritoneum and containing about a pint of thin, whitish, rather offensive pus. Appendix also bound down by adhesions, and upon it near its base were two ulcers, each about the size of a little-finger nail. On section, mucous membrane slightly swollen and injected. A small concretion found which had not given rise to any inflammation in its neighborhood and consisted merely of fæces.

HOSPITAL PRACTICE.

SURGICAL CASES IN THE MASSACHUSETTS GENERAL HOSPITAL.[1]

UNDER THE CARE OF DR. H. H. A. BEACH.

Strangulated Femoral Hernia; Operation.

Patient fifty-nine years old. Entered with the history of a "bunch" in the groin for several years, from which she suffered no inconvenience. Five days before was seized with abdominal pain gradually increasing, the "bunch" tender. Has had vomiting for three days; incessant for past twenty-four hours. In spite of cathartics and enemata, no dejection for five days. Abdomen tympanitic. Under ether, reduction by taxis was impossible. The vicinity of the lump was made aseptic. An incision of three inches was made and a dissection down to the sac, which when opened disclosed two coils of intestine and some adherent omentum. The ring was very small and required enlargement before the intestine could be returned. The omentum was ligatured, divided, and returned with the intestine. The sac was stitched into folds by means of a single catgut suture and drawn into the ring. The wound was closed by interrupted sutures without drainage. During the night following three copious dejections. No important rise of temperature or unfavorable symptom. Complete union on the seventh day, when the dressing was moved for the first time and the stitches taken out. No impulse felt on coughing.

Tuberculosis of Sheath of Extensor Tendons of Foot; Operation.

Patient a woman of forty years. Family history good. "Always healthy and has no cough." One year ago a small swelling appeared on the dorsum of the right foot without any injury or other cause to explain it. It has increased without pain, until now it measures the size of a lemon; the surface red, moderately tender, without thrill or pulsation, and does not impede walking. A slight enlargement of the inguinal glands of both groins may be felt. An exploratory incision disclosed a mass of cheesy nodules in a matrix of translucent gelatiniform material with some small pockets containing a thin yellow fluid, all connected with the sheaths of the tendons of the extensor longus digitorum muscle. Microscopical examination showed the growth to be due to an infiltration of tubercle. The mass was excised and the remaining surface curetted. The cavity left was packed with iodoform gauze. The wound is now filled with a fine growth of granulation tissue.

Perityphlitic Abscess; Intestinal Obstruction for nine days; Operation.

The patient, a boy of fourteen years, entered with a tender lump, the size of a small orange, in the right lumbar region, a temperature of 102.4°, and a pulse of 108. Having usually been regular in his bowels and without a chill or chilly sensations, a constipation that resisted all medication began nine days before his admittance and had continued until he appeared at the hospital. He had kept about until two days before that time, though unable to stand erect during the latter part of the time. Pain has been constant, with occasional sharp paroxysms, some vomiting, and complete loss of appetite. He was etherized at once and an incision of three inches made on the outer side of the mass near the anterior superior spinous process of the ileum. The three abdominal muscles were successively divided, disclosing a fluctuating and tense swelling just beneath the peritoneum. This was punctured, giving vent to some very foul and thin pus, shreds of lymph, and gas. The opening was enlarged and washed out with a warm solution of sulpho-naphthol, and drained. From four to six ounces of pus having a fecal odor escaped. An antiseptic dressing was applied, the cavity syringed out from four to five times a day. His temperature became normal and has remained at about that point since. The wound slowly granulated, and the bowels resumed their function three days after the operation. Two small intestinal concretions escaped from the wound on the second day after the operation.

Strangulated Inguinal Hernia; two cases: Operation.

A man of forty-eight years had suffered from double, reducible inguinal hernia for twenty-five years. Since its occurrence he had worn an ineffective double truss. Entered the hospital with a history of strangulation of the right side for twenty-four hours, which had resisted all attempts at reduction. The hernia of the left side was easily reduced, but that of the right side could be partially reduced *i.e.*, into a sac existing between the internal and external abdominal rings. He was therefore etherized, and, taxis proving unavailing, the sac was laid open up to the external ring: the hernia still irreducible. Upon withdrawing the gut and omentum from its sac the internal ring was found at a considerable distance (the length of the forefinger) from the external ring, and *there* a very firm and tight stricture, which was divided and the whole mass easily returned to the abdominal cavity. None of the sac was removed, but it was laid together in folds and secured by catgut stitches to the internal ring, and the wound closed by sutures without drainage. His temperature has never reached 100°. Bowels moved on the ninth day after the operation. A large mass of indurated tissue seals the two rings firmly.

A second case, with a history almost identical with the foregoing, with the exception of a congenital origin for the hernia, and in a younger man, entered the hospital in the same week. The complication of a hernial sac, the mouth of which opened at the external abdominal ring, was found and treated as above.

These cases are naturally classified under the head of "intra-parietal or inter-muscular," and verify the soundness of the doctrine which calls for operation in case of doubt; since it is easy to mistake the reduction of the hernia into the sac for the more desirable reduction into the abdominal cavity. My second case never recovered from the collapse which apparently followed a protracted abdominal operation. Although his history did not show long strangulation his condition was bad upon entrance, and his cyanotic appearance suggested a longer continuance of the obstruction than could be gathered from his statements. Unfortunately no autopsy could be obtained in corroboration of any theory of the exact cause of death.

Compound Comminuted Fracture of the Humerus: Excision of Elbow-Joint.

The patient a male adult. Enters with scalp-wounds, contusion of left knee, and a lacerated wound on the posterior side of the right elbow communicating with a comminuted fracture of the lower extremity of the humerus. The wound was enlarged by an incision of four inches, and an excision of the joint performed. Quill drainage and antiseptic dressing. The latter not removed until the ninth day, when the wound was found healed. Temperature at no time exceeded 100°. Although the radius and ulna were not fractured, their articulating surfaces were removed with the view of doing away with all chance of suppuration from breaking down of the cartilage covering them.

Simultaneous Dislocation of Shoulder and Hip-Joints; Reduction.

The patient, a man of thirty-two years, was buried by a falling bank of earth, causing this unusual lesion on the right side of the body. Under ether protracted attempts had been made to reduce the dislocations before he entered the hospital, but without success. The dislocation of the shoulder was of the subcoracoid variety and easily reduced by extension; that of the hip has been designated by Prof. Bigelow as "everted dorsal," and explained by him as due to a rupture of the outer fasciculus of the Y ligament. It presented the shortening (one and a half inches) and eversion characteristic of the lesion. It was reduced without difficulty by the flexion method.

Ruptured Perineum; Restoration without Sacrifice of Adjacent Tissue.

The only object in reporting so common a lesion is to direct some attention to the ease with which the breach may be healed without sacrificing skin or mucous membrane and so interfering with more extensive operations should they be required later. I was forced to adopt the plan, then new to me, between seven and eight years ago by the limited amount of tissue at my disposal in one case. The result was so surprising a success that I have found no reason for discontinuing it since then in many other cases, of which the following is one: —

The woman was twenty-seven years old, and had suffered for about eight years from prolapsus uteri following the rapid extraction of a small child at full term. At times the protrusion would be from two to three inches beyond the vulva. Catamenia more or less irregular and painful. Had continual pain and dragging sensation in the back and loins. Unable to keep any mechanical support in place. The tear included was part of the sphincter ani muscle. She is able to retain the contents of the bowels when they were not too loose. The perineum was opened by a horizontal incision half an inch in front of the anus, the ends of which were carried up on each side of the vagina, making a letter U. The vaginal portion of the perineum was then dissected from the rectal half to the depth of an inch and a half throughout the length of the U incision. Having opened the perineum horizontally, it was closed vertically by bringing the sides of the incision together with two deep, strong wire stitches and afterwards fifteen superficial wire stitches (of smaller size). The bowels were moved on the ninth day; the urine drawn with a catheter up to that time. Sutures removed on the fourteenth day, keeping them in as long as they held any tissue together. The temperature was at no time over 100°. The result was a satisfactory perineum in every respect. (Though I have never been obliged to repeat the operation in any case, it is easy to understand that it would be practicable to do so until success should reward the surgeon. Union by first intention is not essential to secure a firm perineum. The granulating process is perfectly satisfactory in that respect, but more time is necessarily employed. H. H. A. B.)

Reducible Inguinal Hernia; Hydrocele of Tunica Vaginalis of same side by Blow; Radical Cure of Hydrocele.

Two years ago, while using a hammer, the patient (twenty-eight years of age) struck his right testicle. Since then the scrotum has become gradually distended on the same side. Four months ago he was tapped and a greenish-colored fluid evacuated. In a short time the swelling reappeared and has remained until the present time, when it presents the following appearance: — The lower half of the scrotum (right side) translucent. A second swelling the size of a small egg above the first and on a line with the spermatic cord. A third still higher just below the external abdominal ring. The patient was made to lie down, when the upper and hernial part of the swelling could easily be reduced, the hydrocele alone remaining in the lower section of the scrotum. As no communication could be detected between the hydrocele and the hernial sac, the cavity of the tunica vaginalis was laid open freely and drained by Volkmann's method, using quills in place of the more irritating rubber drainage tubes. The result has been a cure of the hydrocele, and by means of a well-fitting water-pad truss the hernia is readily controlled.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

C. B. HARRINGTON, M.D., SECRETARY.

Meeting of April 22, 1889.

Dr. W. L. Richardson, President, in the chair.

Dr. Henry J. Bigelow read a paper on

THE PORTRAIT OF A SURGEON, BELONGING TO THE SOCIETY.[1]

Dr. Henry I. Bowditch moved "that the hearty thanks of the Society be presented to Dr. Bigelow for his able and interesting paper, and that he be authorized to have the name of François Hérard placed upon the portrait."

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[1] See page 519 of this Journal.

The motion was unanimously carried.

Dr. Henry J. Bigelow asked the society to authorize him to express to the erudite Dr. Le Paulmier, of Paris, the great pleasure his skilful identification of their picture had given them.

It was so voted, unanimously.

Dr. J. C. Warren and **Dr. C. P. Putnam** described with the stereopticon

RECENT CONTRIBUTIONS TO CEREBRAL SURGERY

Dr. A. T. Cabot showed a specimen of cancer of the bladder.

Dr. John Homans showed a specimen of cancer of the male breast; also specimens of tuberculous glands of the neck. More than fifty of these glands had been removed from a child.

Dr. J. W. Elliot showed a sarcomatous uterus which he had removed by the operation of vaginal hysterectomy. Symptoms had existed little over a year. The uterus was curetted three months ago by Dr. A. S. Whitney. What she curetted out was carried to Dr. Gannett and reported to be sarcoma. The symptoms were hæmorrhage, stinking discharge, and pain. The operation was done principally for pain. The patient being fifty years of age the vagina was very narrow and the operation very difficult. It was done by the new French operation by using clamps only; no ligature was applied during the operation. Time of operation, one hour and a half.

Dr. Fitz showed a specimen of malformed heart which Dr. Whitney had sent him. The specimen was interesting because it represented a very severe malformation, and one which the patient was able to carry until reaching nearly the age of twenty, when she died of tuberculosis.

The history is briefly that of a cyanotic girl who had been considered practically well. Although much discolored, and suffering from occasional circulatory disturbances, she was able to do all the ordinary housework on a country farm. She had attacks, characterized as "weakness" by her friends, which seemed to be of the nature of syncope. Six months ago she began to have pulmonary symptoms and to lose flesh. That has been progressive. Ten weeks ago she took to her bed. Then there was a sudden exacerbation of symptoms, with fever. From that time the progress has been rapid. After death there was a pronounced discoloration of the skin. The lungs were full of miliary tubercles. The interest of this specimen lies in the fact that it represents what has sometimes been called a heart with three ventricles. The condition is a stenosis near the origin of the pulmonary artery, resulting in the presence of an apparent small ventricular cavity from which the pulmonary artery arises, although it is really a part of the right ventricle cut off from the rest by the muscular trabeculæ. The heart is of about the normal size, but has a conspicuous enlargement of the right ventricle. Directly in front is the small ventricular cavity from which arises the pulmonary artery. It communicates with the dilated and hypertrophied right ventricle by a small opening large enough to admit the passage of a lead pencil. The cavities of the right and left ventricles are comparatively normal, but the wall of the former is very much hypertrophied. The two ventricular cavities communicate by means of a defect in the interventricular septum, and the bulk of the blood which was forced out of the right ventricle went into the aorta and was distributed through the general circulation. From the left ventricle the blood entered the aorta. The ductus arteriosus is closed. It is a matter of speculation as to the manner in which the pulmonary artery became distended with blood, for the pulmonary artery does not differ materially from the normal size. It presumably was accomplished by means of a dilatation of the bronchial arteries. The blood was evidently sufficiently aerated for this person to live in relative comfort for twenty years and die of tuberculosis.

PERSISTENT VITELLINE REMAINS.

Another specimen of irregularity of development was shown, which illustrates one of the points in connection with persistent omphalo-mesenteric remains, a point of considerable importance in the causation of intestinal strangulation. Meckel's diverticulum is present and arises from the usual place — some three feet above the ileo-cæcal valve. Its tip is connected with the mesentery of the small intestine by means of a cord; the latter is the persistent omphalo-mesenteric artery or vein, perhaps both. The cord is very sharply defined, about the size of a knitting needle, and covered with a layer of peritoneum.

Dr. H. H. A. Beach showed a vesical calculus from a child of three and a half years. The stone had acted as a valve to the urethra and had caused retention of urine, great dilatation of the bladder, and prolapse of the rectum from straining.

Dr. F. C. Shattuck reported a case of

MYXO-CHONDROMA OF THE CHEST,[2]

and exhibited the patient and the fluid.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

Regular meeting, Monday, January 7, at the Medical Library, 19 Boylston Place. **Dr. William Ingalls** in the chair.

Dr. A. L. Norris reported a case of

PUERPERAL METRITIS COMPLICATED BY MALARIA.[1]

Dr. A. N. Blodgett asked the reader the cause, as far as he was able to determine it, of the phenomena in the case which had been so carefully reported.

Dr. Norris: I should say the emanations of foul gases and malarial atmosphere from the causes enumerated in the paper, — the very objectionable cesspool, the cellar, and the lack of ventilation of the water-closet.

Dr. Blodgett: I have no doubt that that is a very undesirable complication, but I did not understand that the patient was distinctly malarious before this time.

Dr. Norris: No; I should not say that she had been especially malarious. There had been a good deal of sickness in the house, and the mother has since died in that same house.

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[2] See page 552 of this Journal.

[1] See page 553 of this Journal.

Dr. Blodgett: I asked especially because in the paper allusion was made to the fact that cases of puerperal metritis were usually if not always of distinctly septic origin; and I wished if possible to ascertain a little more accurately the opinion of Dr. Norris in this special case in regard to the matter.

Dr. Norris: I think there could have been no possibility of the contagion being carried by the attendants to the patient. Every antiseptic precaution was taken at the time of birth and afterwards.

Dr. H. F. Vickery asked whether there was any regularity about the rigors or chills, and whether quinine, which was at one time used, had any benefit upon the chills.

Dr. Norris: I think it had. There did seem to be a periodicity about the chills. Every third day there was a tendency to this; it was hard to hold the patient to a steady improvement throughout the whole sickness.

Dr. Vickery: Were the lochia offensive at any time?

Dr. Norris: They were, quite soon.

Dr. Vickery: The only case I ever knew about where there was a distinctly malarial element was by hearsay in this way: the wife of a medical gentleman, a friend of mine, was in Japan, where her first child was born, and he thought that his wife had puerperal fever; and finally the advice of a German physician resident in Japan was asked and he ascribed the rigors to malaria, and they were cured by quinine.

Dr. McCollom: There has been more or less malarial fever in Cambridge: I would like to ask whether this occurred in the locality in which malaria has occurred. I think two or three years ago there were a number of cases.

Dr. Norris: It was in that district.

Dr. McCollom: I think something like twenty-five or thirty cases of undoubted malarial fever — well-marked chills and the whole sweating stage — have occurred in the past five or six years. Malarial fever in this community is comparatively a rare thing, that is, originating here; but within five or six years a good many cases have been reported in the western part of the State, and also in the past year in the eastern part quite a number of cases have been reported. It is a remarkable fact that when the intercepting sewer was being laid on Albany street there were quite a number of malarial cases. I think there is every reason to presume that this was malarial fever and not puerperal fever.

Dr. W. A. Dunn reported

THREE CASES OF PERITYPHLITIS, WITH RECOVERY.[2]

Dr. Dunn said, in answer to a question: I believe thoroughly in the operation. In one of these cases I would have operated but was not allowed to. I merely reported these cases as an incentive to myself and others when operations are forbidden. I believe thoroughly in laparotomy and enterotomy; particularly when the case progresses to more serious condition or there are indications of collapse I should not hesitate about doing the operation. Of course if there were indications of pus an operation should not be delayed under any circumstances, that is, if one is permitted to operate. Then a free aspiration or a good free incision may be sufficient.

Dr. Dunn said, in answer to a question when cathartics should be given: I am guided to a considerable degree by the condition of the tongue, by hunger, and the character of the slight discharges that almost always take place after convalescence is assured. If the fecal discharges seem to be normal and the tongue clear, the temperature normal and no special pain, I should begin with mild saline purgatives.

I should be tentative at first and then proceed. As soon as considered safe a good dose of blue mass (10 grs.), followed next morning with Hunyadi and warm water.

Dr. Vickery: I once had a very desperate case get well. When Dr. Dunn spoke about this one refusing operation, I thought of a woman I saw last autumn. She had a baby one and a half years old; she then miscarried and was again pregnant about three months. One Sunday night she had a sharp pain come on as in a typical case of perityphlitis; and I saw her first Wednesday morning, when she had symptoms of a general peritonitis: she had fever and restlessness and vomiting. In spite of opiates as much as were sufficient to entirely take away the pain, and persistent hot stupes, she kept getting worse, but would not allow the thought of any interference, and Saturday night she presented a perfect picture of a person who was going to die of peritonitis. Every little while stuff would roll out of her stomach, with perfectly characteristic vomiting of small amounts without much effort, great distention of the whole abdomen, and continued fever. On Sunday she was a little better, and in the course of the next week a pint or two of fetid pus discharged back of the cervix into the vagina and she got perfectly well. She has once in a while a starting up of pain in the old places, but apparently she is all right at the present time.

Dr. E. R. Cutler, of Waltham, reported

ELEVEN CASES OF OPERATION FOR APPENDICITIS.[3]

Dr. A. N. Blodgett: I cannot help thinking that the two papers presented this evening illustrate two distinct pathological processes going on within the abdominal cavity or its immediate vicinity, both of which are extremely important, but each tends possibly to take a different direction under careful treatment and desirable surroundings, and that the examples of this trouble which we have had presented to night are valuable in the way of illustration of the course which these very obscure diseases take in the way that they present themselves in practice. I am reminded of a case I followed with some care, in which the patient, a gentleman, was seized with the indications of an acute appendicitis or perityphlitis: what it was I don't suppose will ever be thoroughly known, but it was very imperative that the operation should be performed, and every preparation was made for it. The patient was willing to submit, but a conservative method of treatment was adopted, and the case recovered without operation. It seems to me the time that the operation should be performed is sometimes very difficult to determine; and while Dr. Dunn has presented a series of cases showing the value of conservative treatment, it is evident from Dr. Cutler's cases that conservative treatment should be a short one. Many cases I think would be in a better condition by operation than by prolonged conservative treatment. One reason for operation in cases where it might possibly be thought that the patient would survive without it is the fact that after a purulent peritonitis, in which there may be abscesses in the abdomen, there is liable to be a very dangerous adhesion of the viscera of the abdomen that is particularly apt to produce subsequent trouble in the life of the individual. That, I think, is something that should be taken very much into consideration in the treatment of these cases of abscesses in women where the process of gestation may be seriously interfered with in after life from the presence of intestinal adhesions to other portions of the abdominal contents. In male patients that is also frequently a cause of disturbance, and to my mind one very considerable reason for urging operation where perhaps it might possibly be thought the patient would get along without it.

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[2] See page 556 of this Journal.

[3] See page 551 of this Journal.

My impressions are in favor of laparotomy in cases where this is to be seriously considered as an expedient. The experience of those who have performed it has certainly demonstrated the fact that the abdomen is far more tolerant of surgical interference than was supposed, and exploratory laparotomy is not unheard of in our day, and the results Dr. Cutler has presented would seem to indicate that the fault is more frequently in not operating than in operating. The tendency in surgery is perhaps to overdo certain operations. The enthusiasm leads them to operate where such a procedure might be avoided, but in these cases the results at present do certainly seem to indicate that in any case of serious doubt, at least an operation for exploratory purposes alone is not only advisable but imperatively indicated.

Dr. Norris: I would like to ask the reader if a case I had, a child six years of age, with inflammation with concretion (as found at autopsy), he would not regard an especially good case for operation.

I have in mind several adults with inflammation in the right iliac fossa, with rupture and fetid discharge from the bowels, with recovery, one of which occurred a year ago this winter, — a young man twenty-two years of age. I was strongly of the opinion we had better operate, but we did employ conservatism and recovery followed.

Dr. C. P. Putnam: The comparative value of conservative and operative treatment really depends on the safety with which the operation may be done, since we know pretty well the dangers of not operating. Formerly laparotomy was very unsafe, now it is comparatively a safe operation.

I have a young man in mind who has had three attacks of appendicitis. Possibly if he had had an operation done the first time he would not have had the other attacks. He has got over the three. If he should have another and an operation should be done and should prove fatal, the parents would naturally think it would have been better to have let him alone as we did the other three times. How safe, then, may we consider the operation?

Dr. Cutler: I think we may look upon the operation as almost a harmless operation. The difficulty which I dreaded at first was that of finding the appendix; and I think if we were to open the bodies of healthy persons and undertake to remove healthy appendices we should find difficulty often. I judge that the appendix stiffened and hardened by inflammation is comparatively easily found. For my own part I feel very strongly that the operation can be done without adding to the risk of the case, I think perhaps in any case. Undoubtedly if it is done it should be done pretty early. After the parts are imbedded in adhesions and the landmarks gone, then it is difficult. I imagine that two days or so after the beginning of the attack it would be easy to find and remove it in almost any case, and that it may be done with almost no risk and very great advantage.

Dr. Ingalls said: It seems to me that in these cases it is reduced to this, to operate or not to operate. Whenever a patient is seen, at whatever stage, if the mind is made up what the trouble is, the extent of the trouble as far as possible, then the consideration — operate or not operate; if we are to operate, do it at once; if not, go on trying by conservative methods.

Dr. Ingalls reported

A CASE OF APPENDICITIS, WITH AUTOPSY.[4]

THE AMERICAN SURGICAL ASSOCIATION.

Annual Meeting held in the new Army Medical Museum, Washington, May 14, 15, and 16, 1889.

Wednesday — Afternoon Session.

Dr. Theo. A. McGraw, of Detroit, read

A CONTRIBUTION TO THE HISTORY OF GUN-SHOT WOUNDS OF THE ABDOMEN.

Reference was first made to a case of gun-shot wound of the abdomen operated on by Dr. R. Abbe, of New York, July 8, 1886, in which four hours after the accident adhesions of the intestine to the abdominal wall were found, forming a cavity containing extravasated fæces. The adhesions were broken up, and four holes in the bowel and one in the bladder were closed. Suppression of urine and death followed. In August, 1887, the author was called to a case of gun-shot wound of the abdomen, fourteen hours after its occurrence. At the operation, it was found that adhesions had formed, shutting off the peritoneal cavity. These were broken up, and eight perforations of the bowel found. Five of these had become so occluded by lymph as to be detected with difficulty, and no discharge could be forced through them. Four feet of the ileum was excised. The patient died twenty-six hours after the operation. A study of these cases led the reader to suggest that under such circumstances the drainage of the cavity would be the best plan to adopt. The artificial anus or fecal fistula could then be operated on at a later period. The question arises whether or not these cases of early agglutination are sufficiently numerous to warrant our making them the point on which the treatment of all cases of penetrating wounds of the abdomen over six hours old must turn. This question cannot be decided at present.

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[4] See page 558 of this Journal.

A review of the approved methods of treating gun-shot wounds of the abdomen was then taken up. The great danger has been shock. The shock has depended, 1st. upon the time occupied in operating; 2nd, upon the amount of evisceration; 3rd, upon the number and the nature of the injuries to be repaired; 4th, upon the chilling of the intestines; and, 5th, possibly upon the long-continued anæsthesia. In discussing the subject the following propositions were considered, many of them based upon experiments upon dogs and sheep: —

1. The gravity of an injury of this kind depends partly upon the size of the missile.

2. Gun-shots which enter the abdominal cavity pass in a nearly absolutely straight line from the orifice of entrance, through the peritoneum to that of exit or to their final stopping-place in the viscera. All apparent deviation from a direct path of bullets fired into the abdomen are due to changes in position subsequent to the shooting.

3. An incision made directly in the course of the ball will give the shortest route to the injured viscera.

4. The contents of the bowels may be made to discharge, through an open gun-shot wound, by manipulation and pressure.

5. An empty condition of the alimentary canal is most favorable to healing. To secure this it may be proper, in some cases of injury of the bowel immediately after a hearty meal, to evacuate the contents of the stomach by means of a siphon.

6. Agglutination and limitation of the morbid processes consequent upon gun-shot wounds may take place as early as the sixth day.

7. Senn's method of hydrogen gas insufflation, however admirable in recent cases, should be used with great caution in cases four hours old, and especially in those made by small bullets.

8. The dangers of the operations for penetrating gun-shot wounds of the abdomen are directly in proportion to the length of the operation and to the amount of the evisceration. The duration of the operation may be lessened, 1st, making the incision over the line taken by the ball, or, if it has passed from before backwards, over the point of entrance; 2nd, by limiting the examination of the viscera strictly to such of them as may have been in the course of the ball; 3rd, by suturing wounds of the intestine, whenever it is possible, instead of excising them; 4th, by omitting all operative procedures, even suture, in wounds which have become so thoroughly occluded by plastic material that the contents of the bowel cannot be pressed through them; 5th, by operating first on those wounds which imperatively demand it, and leaving to the last those which may recover without operation; 6th, by never eviscerating a patient, except, first, when hæmorrhage is otherwise uncontrollable; and, second, when there is evidently a discharging wound which cannot otherwise be found. The evisceration of a patient is as dangerous as any gun-shot wound of the intestine which cannot be made to discharge its contents by manipulation or pressure can possibly be. There are cases where evisceration is necessary, but the author protested earnestly against the habit of eviscerating patients suffering from gun-shot wounds of the abdomen as a matter of routine. We are not warranted in turning a man inside out and subjecting him to frightful dangers in the mere fear that there may be still an undiscovered wound, when all the symptoms which ought to indicate such a wound are absent.

9. In cases of these wounds, in which the patients may be too weak to endure any radical operation for their repair, efforts for their relief may be made by incision and drainage, and in some cases by attaching the injured intestines to the abdominal wall, as in gangrenous hernia. This procedure, occupying but little time and making no draft upon the strength of the patient, may offer a hope of recovery which would not be possible under the expectant mode of treatment.

DISCUSSION.

Dr. D. W. Yandell, Louisville: The statement in regard to the course of balls is new to me. A number of cases which I have seen had led me to believe that balls entering the abdomen might deviate very greatly. I am not altogether prepared to accept the statement at present. In one case in which the pistol was held near the individual and in a straight line, the ball entered above the symphysis pubis and was found below the spleen, having wounded the intestines in its course.

The recommendation that in the extreme cases, where the patient is greatly exhausted, the wounded intestine be secured at the abdominal incision, is certainly conservative, and it would seem to me to be wise.

Dr. C. B. Nancrede, Philadelphia: There are such a number of cases on record in which it was supposed that the balls were reflected, that I think that there can be no doubt that this occurs occasionally.

In regard to the incision: from my experience with both the median and the lateral incision, I am forced to the conclusion that unless we are certain that the ball has followed an anterior-posterior course the median incision is to be adopted in every case, with rare exceptions.

I suppose that Dr. McGraw means by evisceration removal of the intestines *en masse*. It makes a great difference, as far as shock is concerned, whether the intestines are removed altogether or simply an inch brought out of the opening, immediately replaced, and another portion examined, at no time exposing a large portion of the bowel. So many cases have been recorded in which death was the direct result of overlooking a single wound of the viscera or blood-vessels, that the only safe rule is to make a thorough examination before closing the abdominal incision.

Dr. J. Ewing Mears, Philadelphia: The median incision is, I think, the one that should be adopted. It can be extended any desired distance, which cannot be done with the lateral incision. By the median incision the entire abdominal cavity can be inspected.

In regard to what has been termed evisceration, I think that it is better to permit the patient to die without operation than that an incomplete or imperfect operation should be performed. I think that the surgeon would be almost criminally culpable if, after subjecting the patient to the dangers of an abdominal section, he closes the abdomen without satisfying himself by thorough examination that he has found every wound that could have been inflicted. It is not necessary to turn all the intestines out. It is sufficient to slip them through the hands, subjecting them to careful inspection.

Dr. R. A. Kinloch, Charleston: After the abdomen is opened in a search for wounds, I think that every wound should be closed. We cannot say that one wound is of less importance than another.

Dr. W. W. Keen, Philadelphia: As regards the line of incision, we should make a distinction between stab wounds and gun-shot wounds. In the former case I think the incision should be made at the point of wound, while in the latter the almost invariable rule should be the median incision. I can but agree with previous speakers that after we have opened the abdomen no case is properly treated if we leave by any possibility a single wound. Every wound should be sutured.

Dr. C. H. Mastin, Mobile: In regard to the course of balls: I treated one case in which the ball entered one inch to the right of the umbilicus, made nine openings in the intestine, passed down through the bladder, out through the prostate, and lodged near the tuber ischii on the left side. The spinal column had not been injured.

Dr. F. S. Dennis, New York: I believe that it is a rule without exception that the median incision should be made where we are going to sew perforations in the bowel or stop hæmorrhage in the abdominal cavity. The point of first importance is the control of hæmorrhage. The median incision will permit the surgeon to enter the peritoneal cavity in half a minute.

Dr. Stephen H. Weeks, of Portland: I have not heard allusion in regard to the use of Dr. Senn's method. He laid stress upon two points, first, the use of the gas in determining whether perforation had occurred; and, second, in locating the openings in the bowel. It seems to me that this latter is *a valuable point*.

Dr. Stephen H. Weeks, M.D., of Portland, Maine, read a paper on

DRAINAGE AND DRAINAGE-TUBES IN THEIR APPLICATION TO THE TREATMENT OF WOUNDS.

The paper first referred to the great importance of drainage, and, after alluding to the various methods proposed for securing it, described a new form of absorbable drainage-tube prepared from the arteries of animals. The arteries used are those of the ox. They are separated from their sheaths, cut into tubes four or five inches long. They are then boiled in water for about five minutes. This sterilizes them and hardens their coats. Holes are next cut in their sides and they are passed over glass rods of different sizes according to the size of tube desired. They are now placed in corrosive sublimate solution one to one hundred and allowed to remain ten minutes. Then they are placed in alcohol 95%, and at the end of twenty-four or forty-eight hours the glass rods are removed, the tubes being kept in alcohol until needed. These tubes are unirritating to the tissues. They are absorbed in from five to seven days, and drain the wound perfectly.

Thursday — Third Day — Morning Session.

John Homans, M.D., read a paper on

A SUCCESSFUL CASE OF NEPHRECTOMY FOR THE REMOVAL OF CANCER OF THE RIGHT KIDNEY.

The patient, a woman of fifty, for a year had suffered with frequency of micturition. The urine had been dark and bloody at times. For three years she had suffered from indigestion. The tumor had been discovered in 1887 in the right iliac region, and since July, 1888, it had grown rapidly. It filled the right iliac region and more or less the umbilical and pubic regions. On palpation, large irregular nodules were felt and in some parts there was fluctuation. Laparotomy was performed January 21, 1889. The incision was made in the linea alba and was four inches in length. The tumor was exposed, and in the upper part was seen the remaining portion of the kidney and two large renal veins. These were tied with silk, and the ureter was next tied and divided, and then the pedicle was readily ligated. The tumor was removed, a glass drainage-tube introduced and the wound closed and dressed with iodoform gauze and absorbent cotton. The tumor measured six by nine inches and weighed 53 oz. There was very little shock. The amount of urine since the operation has varied between 10 and 57 oz. and has been gradually increasing There was but little discharge from the drainage-tube, which was removed on the fourth day. One month after the operation an abscess was opened in the right lumbar region. A slight swelling and some tenderness still remains in the right loin. Whether these are wholly inflammatory or due to a recurrence of the growth cannot at present be determined. The patient is rapidly gaining strength.

The experience of the author led him to say that a large renal tumor which cannot be diminished in size by tapping (he would consider one weighing a pound or more a large tumor), can most conveniently be removed by an incision through the linea semilunaris or in the linea alba. Small tumors and those that can be diminished, may be removed by the lumbar incision. In cases of moderate-sized kidneys, disorganized with pus, or tubercular, or containing calculi, the lumbar incision is preferable.

Dr. Frederick E. Lange, New York: In cases where a large tumor of the kidney is to be removed and where it is desirable not to open the peritoneal cavity, I have found a trap-door incision, with exsection of one or two ribs if necessary, give ample room for operation. I have operated nine times, but never for neoplasm. With free incision and open antiseptic after-treatment, I regard extirpation of the kidney, even in cases of large tumors, as a comparatively safe operation.

Dr. M. H. Richardson, Boston: There is a frequent anomaly of the vascular supply of the kidney which should be borne in mind in operations. Instead of one renal artery there may be three or even four arteries. If such a pedicle is ligated *en masse*, there is danger of slipping of the ligature and hæmorrhage. This is obviated by tying the pedicle in several sections.

Lewis S. Pilcher, M.D., of Brooklyn, read a paper on

THE QUESTION OF THE ANTI-TUBERCULAR POWER OF IODOFORM, WITH A SUGGESTION FOR A MORE EXACT CLINICAL TESTING OF THE SAME.

The paper first called attention to the different results obtained by the application of iodoform to tubercular tissues, according as the results were derived from clinical experience or from observation on tubercular affections artificially induced in animals. The following case was a contribution to the study of this question: — A girl, aged thirteen years, with a family history of tuberculosis, came under observation with an infiltrated and ulcerated patch on each leg; there was also on each thigh an infiltrated patch without ulceration. The disease was of three months' standing. The diagnosis of tuberculosis of skin was made. The patch on the right leg was excised, and microscopical examination confirmed the diagnosis; tuberculous nodules with bacilli were found. The patches on the thighs were also excised, and healed without further treatment. Bismuth was applied to the patch on the right leg and healing progressed satisfactorily. It was then determined to apply skin-grafts. The sore was curetted, the grafts applied, and did well for a time. Later the epithelial elements broke down and a number of small ulcers formed. At the base of each ulcer was found a particle of bismuth. Portions of the tissue removed, however, showed no bacilli. No iodoform had been employed. Boracic acid ointment, and the occasional application of nitrate of silver were now ordered. The ulcer on the left leg was curetted December 10, 1888, sprinkled with iodoform, and covered with absorbent cotton. It rapidly healed, and on January 25th a wedge-shaped piece was removed and examined. It was entirely free from evidences of tuberculosis. A soft natural skin has since formed.

DR. WM. H. PANCOAST, of Philadelphia, made some brief remarks on the following topics: —

I. That the so-called metacarpal bone of the thumb did not belong to the metacarpal group, that its method of development clearly placed it in the class with the phalanges.

II. He next exhibited and described his urethrotome, which he had used with satisfaction twenty years.

III. A delicate knife, which he termed the therapeutic knife, employed for making numerous minute punctures in an inflamed part, for securing an antiphlogistic effect.

IV. A gun breech which had remained for some time unsuspected in the superior maxillary bone of a boy.

V. The use of black silk bandages and black adhesive plaster as adding greatly to the neatness of a dressing.

VI. The use of iron-dyed black-silk ligatures.

VII His method of treating varicocele by passing a silk thread through the scrotum between the vas deferens and the veins, returning it through the same opening in the skin, but in front of the veins, passing the ends of the ligature through holes in a metal plate and tying tightly. The cure is complete in three or four days.

The committee appointed to take action in regard to the death of Dr. S. W. Gross presented the following: —

Whereas it has pleased the Almighty to remove from our midst Dr. Samuel W. Gross, who assisted in founding the American Surgical Association and contributed by his example and work largely to its success, who as a teacher was enlightened and impressive, as an author was accurate and original, as a surgeon was sound in judgment, rich in clinical experience, skilled in manipulation, and as a Fellow was genial and courteous, —

Therefore, be it resolved that the Association deplores his death as an irreparable loss, and directs that a copy of the foregoing be spread upon its minutes and forwarded to his bereaved family.

(Signed) D. W. Yandell, P. S. Conner, J. Ewing Mears.

Officers for ensuing year: —

President, Dr. D. W. Yandell, Louisville, Ky.; vice-presidents, Dr. Claudius H. Mastin, of Mobile, Dr. C. B. Nancrede, Philadelphia; secretary, Dr. J. R. Weist, Richmond, Ind.; treasurer, Dr. P. S. Conner, Cincinnati; recorder, Dr. J. Ewing Mears, Philadelphia; council, Dr. John S. Billings, L. McLane Tiffany, W. F. Peck, and F. S. Dennis; chairman of committee of arrangements, Dr. J. S. Billings, Washington.

The following were elected members: Dr. Stephen H. Weeks, Portland, Me.; Dr. Robert F. Weir, New York; Dr. John Homans, Boston; Dr. Lewis A. Stimson, New York; Dr. Frederick E. Lange, New York; Dr. Lewis S. Pilcher, Brooklyn; Dr. Levi Cooper Lane, San Francisco; and Dr. Arthur T. Cabot, Boston.

The Association then adjourned, to meet in Washington the second Tuesday in May, 1890.

Recent Literature.

Hygiene of The Nursery. By LOUIS STARR, M.D. Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital, Philadelphia, etc., etc. With twenty-one illustrations. Philadelphia: P. Blakiston, Son & Co., No. 1012 Walnut Street. 1888.

This little book has evidently been written with great care, and in many respects is an excellent addition to works of this class. It might perhaps be said, in the way of individual opinion rather than general criticism, that while the early chapters are well adapted for the perusal of intelligent parents, and are full of common sense advice and instruction, the last three chapters, "Food," "Dietary," and "Emergencies," had much better have been omitted, or perhaps brought out as a separate manual for practitioners.

The question of feeding the healthy infant, for instance, is far too important and complex a subject to be intrusted to any guidance but that of the educated physician. Intelligent parents are recognizing this fact more and more, and should be encouraged to refer this question to those who are fitted by especial years of study to deal with it, rather than experiment in a field which may endanger the welfare of their offspring.

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THE STORY OF A MEDICAL PORTRAIT.

The first paper in the present issue of the Journal is a short address recently read by Dr. H. J. Bigelow before the Boston Society for Medical Improvement, and entitled "The Portrait of a Surgeon." Preceding the address is a frontispiece giving reproductions from a photograph of an engraving in the Bibliothèque Nationale at Paris, and from a photograph of a painting owned by the Improvement Society. Unfortunately, the photograph and the reproduction from the photograph of the painting do not do it justice, in its present restored condition; otherwise for purposes of comparison the print suffices.

Dr. Bigelow's admirable and critical address tells the curious story of the picture and of his final discovery of the name of the real subject of the portrait. For the full understanding of the subject by our readers, and that they may share the interest taken in it by the members of the Society to which the portrait belongs, it remains for us, availing ourselves of the facilities offered us by the Society through its secretary, to summarize briefly the discussions excited by this silent old portrait looking down on the Society's meetings, as we find them reflected in the records during the last forty years — discussions which would undoubtedly have been listened to with varied emotions by the old French surgeon of the seventeenth century could he have stepped out of his frame and taken his seat among the Boston doctors of the nineteenth century. Their occasional animation would have caused a gratified smile, but things were said in the heat of debate which would have caused the shoulders to be shrugged in a way to be visible even through the academic gown. We refer, of course, strictly to discussions personal to the Portrait of a Surgeon, outside of which we are not authorized on this occasion to take the public into the confidence of the Society.

Oct. 9th, 1848. "Picture of Ambrose Paré. Dr. Bethune presented to the Society, in the name of Wm. Appleton, Jr., Esq., this picture, which there is good reason to believe to be a portrait of this distinguished surgeon, painted during his lifetime." A vote of thanks was passed; and Drs. Bethune, O. W. Holmes, and H. J. Bigelow were appointed a committee to provide a suitable inscription for the picture. Whether this committee ever reported or not neither the records of the Society nor the memories of living men declare; but, as a matter of fact, the frame of the portrait shortly after bore the inscription, "Ambrose Paré," and, as Ambrose Paré, the old man with the skull and trephine continued tranquilly to assist at every meeting of the learned Society from that time until the year 1885, when a stormy period began, and the repose of thirty-seven years was broken.

Feb. 23rd, 1885. "Dr. H. J. Bigelow asked permission of the Society to remove the portrait of Ambroise Paré in order to have it photographed; permission was granted."

Feb. 23rd, 1886. It was proposed and seconded that "the secretary inquire when the portrait purporting to be of Ambroise Paré, and now in the possession of a member for the purpose of restoration, will be returned."

Oct. 25th, 1886. A letter was received from Dr. Bigelow returning the picture. It had been put in admirable repair, and a vote of thanks to the widow of the donor was proposed and passed. The new frame still bore the inscription, Ambrose Paré.

Nov. 22nd, 1886. Dr. H. I. Bowditch said that the portrait owned by the Society, purporting to be Ambroise Paré, is the portrait of an inferior man with a retreating forehead. In the opinion of an artist whom he had consulted, the painting was of the middle or last part of the eighteenth century. He referred to the fact that a committee had been appointed in 1848 to investigate the picture and had never reported. He offered two resolutions: 1, to thank Dr. Bigelow for his efforts to have the picture restored; 2, to change the inscription so as to read: —

> Presented to the Medical Improvement Society
> By William Appleton, Esq., in 1848
> By the Kindness of Mrs. Appleton
> Restored and Reframed in 1886.

The first motion was carried, the second was referred to a committee.

Dec. 13th, 1886. The committee reported that, in place of the inscription proposed by Dr. Bowditch, an interrogation mark enclosed in parenthesis (?) be added to the name of Ambrose Paré, and that a reference to documents on file respecting the authenticity of the picture be pasted on the back of the canvas. Dr. Bowditch objected, and moved non-acceptance of the report on the ground that the Society would be acting a lie if it continued the inscription. A lively debate, in which various members took part, ended in the postponement of the discussion of the committee's report to a subsequent meeting.

Dec. 27th. Dr. Bowditch requested a further postponement of the discussion.

Jan. 10th, 1887. Dr. Bowditch addressed the Society on the "So-called Portrait of Ambroise Paré." He showed engravings and photographs of all the accepted portraits of Paré, which he had been at great pains and some expense to collect, and pointed out the want of resemblance of the Society's portrait to any or all of them. He challenged the authenticity of the picture as a portrait of Ambroise Paré for the following reasons: 1, the lack of resemblance to other portraits of Paré; 2, the professor's robe: there was no evidence that Paré ever was a professor, his ignorance of Latin would have prevented; 3, the inferiority of the face; 4, it was probably a picture of the middle or last part of the eighteenth century; 5, the picture was bought at auction, coming from no one knew where, and for nine dollars.

At the close of his remarks Dr. Bowditch offered two resolutions in place of the committee's report previously under discussion: 1, that the Society is grateful to the donors for the original gift; the picture, however, is not a portrait of Ambroise Paré, but of an unknown professor of surgery, and should no longer bear the name of Paré; 2, that the president be requested to have the present inscription removed, and the inscription previously proposed by Dr. Bowditch put in its place on the frame of the picture.

The Society, after renewed discussion, passed these resolutions of Dr. Bowditch and rejected the committee's report.

Feb. 14th, 1887. Dr. H. W. Williams said that since the last discussion he had received from London a new book, called the "Healing Art," in which it was stated that Paré was appointed professor of surgery in the College of St. Edmé. It was not impossible that the picture might after all be Paré, and it might be necessary to again change the inscription.

Dr. Bowditch in reply said that it was singular that two such writers as Malgaigne and Le Paulmier (both biographers of Paré) do not mention that he was a professor of surgery. In fact they both state that he was always contending with the faculty; and again his ignorance of Latin was an insuperable impediment.

Oct. 10th, 1887. Dr. Bowditch reverted to the statements in the book called the "Healing Art," cited by Dr. Williams Feb. 14th. He reiterated the statement that there was no evidence that Paré ever was a professor of surgery; he could not find any evidence that any college of St. Edmé ever existed. The book called the "Healing Art" was unreliable: it was by an anonymous writer; it contained many errors, some very absurd ones; he had made several unsuccessful attempts to communicate with the author through the publishers, and he had been led to believe that the author could neither support his assertions nor find the candor to acknowledge his errors. In closing his remarks Dr. Bowditch said: "Meanwhile, however, our painting, though it can never bear the honored name of Paré, has some considerable merit as a work of art; it should be carefully preserved; and I will respectfully leave to the juniors of the profession the solution of the question: Who was the man who, notwithstanding the rather inferior characteristics of the head, was undoubtedly a professor of surgery in some college."

From Oct. 10, 1887, to April 22, 1889, the portrait hung listlessly in the Society's place of meeting, no longer the centre of contention or even of interest; still familiarly referred to, if at all, as old Paré, but proclaiming itself by the inscription borne since January, 1887, as the great unknown.

April 22, 1889, the Society's notices offered, among other announcements, that of Remarks by Dr. H. J. Bigelow on the Portrait of a Surgeon; after hearing which remarks the Society voted, on motion of Dr. Bowditch, that the portrait have inscribed upon its frame the name of François Hérard!

Dr. Bigelow asked the Society to authorize him to express to the erudite Dr. Le Paulmier of Paris, the great pleasure which his skilful identification of their picture had given them.

It was so voted, unanimously.

We have tried to make this long story short, but do not doubt our readers will find it worth the telling, though it lead them for the moment away from the direct consideration of practical medicine.

MODERN SEWERAGE AND DRAINAGE.

The recent advances in sanitary science have been so great as to make the sewerage of most of our large cities abound in defects that can be remedied only at an unwarranted expense, and to render the drainage of the vast majority of dwelling-houses in them chiefly a question of degrees of risk to health. Belgrand's much-praised sewers of Paris are confessedly inadequate to meet the reasonable requirements of an enlightened public opinion; the vast intercepting system of London, constructed at an expense of nearly twenty-five millions, only partly relieves that city of the evils of bad sewerage; and both Thames and Seine are so fouled with the filth of those cities as to give rise to loud and frequent complaints.

The same problems were to be met in London and in Boston, namely, extremely offensive sewer-outlets within the city, and numerous old sewers that were not only not self-cleansing, but which could not be adequately cleansed at all by any practicable method. Boston has a distant final outlet into such a vast body of water as to be never likely to create a nuisance, the proportion of sea-water to sewage being virtually sixty times as great as that of river-water to sewage in the Thames. But we have old, large, foul sewers, and probably shall never get rid of all of them. The late William Lindley, C.E., then the foremost living sanitary engineer, declined to undertake the new sewerage intercepting system of London unless he could abolish all the old sewers and build anew everywhere throughout the city. The city authorities think — the same view prevailed and most properly in Boston — that they were not justified in refusing to undertake so colossal an expense, as, in spite of their old sewers, they have reduced the mortality of London with its four million inhabitants, to an average of 19,310 for each million of the population in the five years 1881–85, being a gradual diminution from 22,595 in the years 1851–65, a rate which looks small as compared with Boston and New York.

In London, however, the same "conveniences" are not demanded as in Boston, and reservoir-sewers, sometimes called cesspool sewers, do not constitute the same danger to health as here, where so many people have water-closets in the centre of their houses and waste-bowls in their living and sleeping rooms.

New towns are constantly requiring sewerage, and the high death-rates of most American cities suggest a most earnest attention to all the means of avoiding preventable disease. We have, also, not as favorable a climate as London, and the evils of bad drainage are by comparison intensified with us. It is, therefore, with great satisfaction that we have read a most timely discussion[1] of these points, although naturally favorable to his own side of the question and largely from his own point of view, ably presented by Col. Waring, to whom we are indebted for important contributions to this subject and for large practical work of the greatest usefulness.

Sewers, by general consent, should be as small as is consistent with carrying all the sewage that may be discharged into them; they must be so smooth, at such a grade, and so constructed with automatic appliances as to be self-flushing and clean; they must drain the subsoil; they must be well ventilated, and the outlets must be so placed as to admit of a disposal of the sewage not detrimental to health and as free from nuisance in bad smells as possible.

The combined system of including street-washings, storm-water, and sewage in one set of sewers is generally accepted still by most engineers as the best, certainly for large cities, and by perhaps the majority of engineers for all cities. Its conveniences and advantages are certainly obvious and great. Its chief disadvantages are the cost of pumping, if the sewage must be raised to its final outlet, and the enormous difficulties of dealing with such a volume of water if sewage-irrigation is a necessity. It has reached its highest degree of perfection with the Lindleys, and it is difficult to conceive a better sewered city than Frankfort-on-the-Main has become under their direction, from an engineering or from a sanitary point of view. It has been defended as the best by Mr. Eliot C. Clarke, whom Col. Waring quotes so fully that we need not go more fully into its details.

What the author names Waring's system of sewerage was first applied by him to a large town, although Mr. Rogers Field of London had previously used it for dwellings. It consists in the separate system of small sewers to convey the excremental sewage alone, with perhaps a little rain-water, and self-acting flush-tanks at the terminal points of the sewer pipes. Storm-water may be provided for by surface gutters or if necessary by sewers which need not be laid so deep as those for the sewage proper. For many, especially inland towns of moderate size, and where the first cost must be as small as possible, this system presents unusual advantages; in some places, where the sewage is utilized in irrigation, and the storm water is easily disposed of otherwise, it is by far the best; it may under certain conditions simplify house-drainage. It is already in successful operation in the whole or part of forty-four towns, and plans have been made for eighteen others. Its first introduction in Memphis, after the yellow fever in one summer had more than decimated the population of that city, and against the opinions or advice of nearly all the leading sanitary engineers in the country, was certainly a bold undertaking, but justified by its success.

Colonel Waring's book is in his well-known clear, concise, and forcible style, and the publishers have nothing failed in their art to make it attractive. Physicians will find much in it of importance to them, particularly the chapter on house-drainage. In towns planning sewerage it is well-nigh indispensable.

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[1] Sewerage and Land Drainage (with twenty-nine plates and seventy-five illustrations), by George E. Waring, Jr., Honorary member of the Royal Institute of Engineers, Holland; Member of the Institution of Civil Engineers, England; Fellow of the Sanitary Institute of Great Britain; Corresponding member of the American Institute of Architects. New York: D. Van Nostrand Company; London: E. and F. N. Spon. 1889.

THE NEW ANALGESIC EXALGINE.

Still another compound of apparently considerable medicinal value (if we may trust the statements) has been obtained from one of the products of the destructive distillation of coal-tar. It has been experimented with by several members of the Academy of Medicine, who have reported favorably; and in consequence of its marked analgesic properties it has received the name exalgine.

At the last meeting of the Société de Thérapeutique M. Bardet presented samples of this substance and made his report.

Exalgine represents, chemically, methylacetanilide, $C_9H_{11}N.O = C_6H_5C_2H_3ONCH_3$. From acetanilide three methylic derivatives are obtained; one of these is the substance in question, and is designated by the name ortho-methylacetanilide. It presents itself in the form of fine needles or large white tablets, is little soluble in cold water, more soluble in warm water, and very soluble in spirit and water. Administered to animals (Paris) this substance acts energetically on the cerebro-spinal axis and speedily kills in the dose of forty-six centigrammes per kilogramme of the weight of the animal. It causes restlessness and trembling, and the respiratory muscles soon become paralyzed. In a less dose all sensibility to pain disappears, and the temperature of the body diminishes gradually.

The physiological effects of exalgine are very similar to those of antipyrine, although the former seems to act in a more marked manner than antipyrine on the sensibility, and less energetically on the heat centres.

The analgesic effects of exalgine are obtained by a full dose of seven grains; in some instances it may be necessary to repeat this dose in a few hours. The relief from pain is more prompt and more lasting than when antipyrine is given; this is emphatically the case in all forms of neuralgia, especially in the visceral neuralgias. So far, no symptoms of gastric or intestinal irritation have been noted when exalgine has been given for its medicinal effects; its use has never been attended by cutaneous eruptions or by cyanosis.

Exalgine is eliminated by the urine, the excretion of which it seems to lessen in diabetic polyuria, at the same time that it diminishes the quantity of sugar in the urine.

MEDICAL NOTES.

— The degree of M.D. was conferred upon ten candidates by the Women's Medical College of New York at its recent commencement.

BOSTON.

— The Massachusetts House of Representatives passed the following Medical Bill to be engrossed May 28th: —

Section 1. Every person who shall practise medicine or surgery for hire, gain, or reward, within this Commonwealth, or who shall publicly profess to practise medicine or surgery, shall first file with the clerk of the city or town in which he resides and in which he has his principal office, an affidavit, duly subscribed and sworn to by him, in which he shall state his full name and residence, place and date of birth, location of his principal office, what medical college or institution, if any, he has attended and for what length of time; what degrees in medicine or surgery, if any, he has received, and from what institutions, with date of granting of same: and of what medical societies or associations, if any, he is a member.

Sec. 2. The city or town clerk with whom the affidavit named in Sec. 1 may be filed shall give to such person a certificate of the filing of the affidavit, which certificate shall state the substance of the facts set forth in the affidavit, and such person shall keep such certificate conspicuously displayed in his principal office or place of practice so long as he shall continue so to practice.

Sec. 3. Whoever shall violate the provisions of this Act shall be punished by fine not exceeding $1000, or imprisonment not exceeding one year, or both such fine or imprisonment.

Sec. 4. Whoever shall wilfully swear or affirm falsely in relation to any matter or thing, respecting which the affidavit is required by this Act, shall be deemed guilty of perjury.

Sec. 5. The provisions of this Act shall not apply to surgeons and assistant surgeons of the army and navy of the United States, nor to any physician or surgeon resident in another State, and lawfully engaged in the practice of medicine or surgery there, who may be called in consultation with a physician or surgeon lawfully practising within this Commonwealth.

Sec. 6. This Act shall take effect on the 1st day of October, 1889.

— The following distinguished strangers, among others, are expected to be present at the annual dinner of the Massachusetts Medical Society next week: Prof. Horatio C. Wood, of Philadelphia, Dr. J. S. Billings, U. S. A., of Washington, Drs. Fordyce

Barker and Mary Putnam Jacobi of New York, Prof. William Osler, of Johns Hopkins University, Baltimore.

NEW YORK.

—The coroner's jury in the case of the late Washington Irving Bishop rendered a verdict May 29th to the effect that his death was due to "coma." In regard to the autopsy the verdict declared that, while acting in good faith, Dr. Irwin, through over-zealousness, had been somewhat hasty. During the inquest Drs. H. M. Biggs, E. C. Spitzka, and Allen McLane Hamilton testified that the hæmorrhage found in the brain was quite sufficient to produce death, and that they had no doubt whatever that Bishop was really dead when the first examination of his body was made.

— Two Brooklyn physicians, Dr. Mary A. Dixon Jones, and her son, Dr. Charles N. Dixon Jones, who managed the Woman's Hospital on Greene avenue, Brooklyn, have been indicted for manslaughter, and held in $7,500 and $5,000 bail respectively.

— Mr. Hiram Hitchcock, of the Fifth Avenue Hotel, is about to erect for the Medical Department of Dartmouth College a hospital which, it is said, will be the handsomest and best-equipped institution of the kind in northern New England.

REPORTED MORTALITY FOR THE WEEK ENDING MAY 11, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhœal Diseases.	Diph. and Croup.	Measles
New York	1,571,558	684	275	20.85	15.15	2.10	8.85	—
Philadelphia	1,040,245	—	—	—	—	—	—	—
Chicago	830,000	250	109	16.00	8.00	1.60	8.40	—
Brooklyn	814,505	300	130	18.15	12.54	1.65	8.58	—
Baltimore	500,343	123	34	9.72	23.49	.81	2.53	—
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	189	60	13.78	12.72	2.12	9.54	—
New Orleans	250,000	141	60	29.82	11.36	26.98	—	—
Cincinnati	225,000	104	—	17.28	11.52	1.92	11.52	—
Washington	225,000	94	24	10.80	20.25	1.35	—	—
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	17	5	23.52	29.40	17.64	—	—
Charleston	60,145	34	18	32.33	20.58	26.46	—	—
Portland	40,000	12	—	—	8.33	—	—	—
Worcester	78,292	21	10	20.80	9.52	4.76	4.76	—
Lowell	71,518	34	12	17.64	20.58	2.94	2.94	—
Cambridge	65,552	26	6	11.55	11.55	7.70	3.84	—
Fall River	62,647	25	12	16.00	20.00	4.00	—	—
Lynn	53,334	19	—	10.52	22.04	—	—	—
Springfield	40,731	14	1	7.14	28.56	—	—	—
Lawrence	40,619	17	9	11.76	17.64	5.88	5.88	—
New Bedford	37,253	14	7	21.42	7.14	7.14	14.28	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	4	1	—	—	—	—	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	8	2	37.50	12.50	—	12.50	—
Haverhill	26,058	6	3	—	33.33	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	3	1	—	—	—	—	—
Newton	21,553	7	4	28.56	14.28	14.28	—	—
Malden	19,774	5	—	20.00	20.00	—	—	—
Fitchburg	17,534	5	—	—	60.00	—	—	—
Waltham	17,332	6	—	—	—	—	—	—
Newburyport	13,875	5	3	20.00	20.00	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	5	2	20.00	40.00	—	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2152; under five years of age 788; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 399, consumption 312, acute lung diseases 270, diphtheria and croup 149, diarrhœal diseases 99, scarlet fever 54, whooping-cough 25, typhoid fever 21, measles 17, malarial fever 13, erysipelas 12, cerebro-spinal meningitis 9. From whooping-cough, New York 11, Brooklyn 9, Boston, New Orleans, Washington, Lowell, and Chelsea 1 each. From typhoid fever, Baltimore 5, New York 4, Chicago 3, Brooklyn and Worcester 2 each, Cincinnati, Nashville, Charleston, Fall River and Malden 1 each. From measles, New York and Chicago 5 each, Brooklyn 3, New Orleans 2, Boston and Cincinnati 1 each. From malarial fever, New York 4, Baltimore 3, Brooklyn 2, New Orleans, Cincinnati, Charleston, and Springfield 1 each. From erysipelas, New York 4, Chicago, Brooklyn, and Boston 2 each, Cincinnati, Lowell, and Chelsea 1 each. From cerebro spinal meningitis, Washington 4, New York and Worcester 2 each, Chicago 1.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending May 11th, the death-rate was 18.8. Deaths reported 3438; infants under one year 829. Acute diseases of the respiratory organs (London) 213, measles 170, whooping-cough 114, scarlet fever 46, diphtheria 33, diarrhœa 31, fevers 20,

The death-rates ranged from 14.8 in Cardiff to 32.2 in Halifax; Birmingham 18.6; Bradford 23.1; Hull, 23.6; Leeds 23.6, Leicester 16.6; Liverpool 19.1; London 15.5; Manchester 31.5; Nottingham 17.1; Portsmouth 22.0; Sheffield 19.5; Sunderland 17.5.

In Edinburgh 17.6; Glasgow 25.0; Dublin 27.3.

The meteorological record for the week ending May 25, in Boston, was as follows, according to observations furnished by sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, May 25, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
May 19	30.25	69.0	83.0	60.0	81	74		78.0	S.	S.		10	12		C.	F.			.00
" 20	29 99	67.0	76.0	56.0	92	90		91.0	S E.	S. E.		11	13		R.	R		8.40	.59
" 21	29.70	66.0	68.0	59.0	95	85		90.0	S.	S. W		5	9		R.	O.		15.30	2 24
" 22	29.74	63.0	71.0	59 0	82	74		78.0	W.	S. W.		8	8		F.	O.			.00
" 23	29.84	59 0	61.0	52.0	75	78		76.0	N.	N. W.		12	7		F.	O.		0 15	.01
" 24	29 85	61.0	68.0	50.0	63	60		62 0	W.	N. W.		10	7		C.	C.			.00
" 25	29.89	61.0	68.0	54.0	79	60		70.0	N. W.	N. W.		12	8		C.	F.		1.20	.41
Means for the Week																			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 25, 1889, TO MAY 31, 1889.

By direction of the Secretary of War, Major **John S. Billings**, Surgeon, is authorized to make, in connection with his duties as supervisor of mortality and vital statistics of the eleventh census, such journeys as may be ordered by the superintendent of the census, provided that, in each case, the approval of the Surgeon-General shall be obtained; and provided further that the journeys shall involve no charge against the fund for transportation of the Army. Par. 12, S. O. 122, A. G. O., May 27, 1889.

Leave of absence for one month, to take effect upon completion of his duties as a member of the Army Medical Examining Board in N. Y. City, is granted Major **Henry McElderry**, Surgeon, U. S. A. Par. 4, S. O. 117, Headqrs. Divis. of the Atlantic, Governor's Island, N. Y. City, May 23, 1889.

Leave of absence for twenty-one days is granted Major **J. H. Patzki**, Surgeon. Par 1, S. O. 44, Headqrs. Dept. of Ariz., Los Angeles, Cal., May 18, 1889.

The leave of absence for one month granted Captain **Walter W. R. Fisher**, Assistant Surgeon, by S. O. No. 30, c s. Department of California, is extended fifteen days. Par. 8, S. O. 7, Hdqrs. Divis. of the Pacific, San Francisco, Cal., May 22, 1889.

By direction of the Secretary of War, leave of absence for six months, on account of sickness is granted Captain **Paul R. Brown**, Assistant Surgeon. Par. 13, S. O. 122, A. G. O., May 27, 1889.

Rafferty, First Lieutenant **Ogden**, Assistant Surgeon, U. S. Army, ordered with troops for field practice to Galveston, Texas, where troops will camp for such time as may be hereafter directed. Par. 1, S. O. 29, Headquarters Department of Texas, San Antonio, Texas, May 13, 1889.

By direction of the Acting Secretary of War First Lieutenant **James D. Glennan**, Assistant Surgeon, is relieved from duty at Willets Point, N. Y., to take effect June 1, 1889, and will proceed to Fort Riley, Kansas. Par. 5, S. O. 121, A. G. O., May 5, 1889.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED MAY 25, 1889.

Hutton, W. H. H., Surgeon, to proceed to New Orleans, La., and inspect unserviceable property, May 25, 1889.

Purviance, George, Surgeon, detailed as chairman, Board of Examiners, May 22, 1889.

Austin, H. W., Surgeon, detailed as member, Board of Examiners, May 22, 1889.

Godfrey, John, Surgeon, detailed as recorder, Board of Examiners, May 22, 1889.

Guiteras, John, Passed Assistant Surgeon, resignation accepted by direction of the President, as tendered, to take effect April 30, 1889 May 11, 1889.

Armstrong, S. T., Passed Assistant Surgeon, granted leave of absence for thirty days May, 11, 1889.

RUSH MONUMENT COMMITTEE.

The Rush Monument Committee will meet in Right Gallery Room at Music Hall, Newport, R. I., on Tuesday, June 25th, at 1 P.M., or immediately after adjournment of the morning session of the American Medical Association.

The attendance of others interested in the project is invited.

Collections and subscriptions should be forwarded to the treasurer, Dr. Joseph M. Toner, 615 Louisiana Avenue, Washington, D. C., before June 15th.

Albert L. Gihon, M.D., *Chairman, R. M. C.*

New York, 25th May, 1889.

SOCIETY NOTICES.

Annual Meeting of the Massachusetts Medico-Legal Society.— The annual meeting of the Massachusetts Medico-Legal Society will be held at 11 o'clock A.M., on Tuesday, June 11th, in the Hall of the Boston Medical Library, No. 19 Boylston Place, Boston.

Papers:—

I. A Murderer's Dying Confession disproved by Surgical and Anatomical Facts, by Benjamin Cotting, M.D., senior consulting surgeon to the Boston City Hospital.

II. Some Problems of the Medico-Legal Relations of Inebriety, illustrated by cases, by F. D. Crothers, M.D., Hartford, Conn., editor of the "Quarterly Journal of Inebriety."

III. On the Evidence in Cases of Arsenical Poisoning, by F. A. Harris, M.D., demonstrator of Medico-Legal examinations in Harvard Medical College.

The profession is cordially invited to this meeting.

W. H. Taylor, *Secretary.*

New Hampshire Medical Society: Ninety-Eighth Anniversary.—Annual meeting will be held in Concord, Monday and Tuesday, June 17 and 18, 1889, at the hall of the G. A. R., 15 Warren street, commencing at 11 o'clock A.M., Monday, June 17.

OBITUARY.

ERASMUS A POND, M.D

Dr. Erasmus A. Pond, a leading and well-known physician of Rutland, Vt., died May 29 after four days illness. Dr. Pond was sixty-seven years old, a native of Franklin, Mass., and studied medicine and graduated at Berkshire Medical College and settled at Rutland. He had been president of the State Medical Society, Rutland County Surgical Society, and Rutland Medical Club. He is best known to the general medical profession as the inventor of the sphygmograph.

S. P. MOORE, M.D.

Dr. S. P. Moore, who was Surgeon-General of the Confederate States, died suddenly at his residence in Richmond, Va., May 31. He was born in South Carolina, and in 1835 was appointed assistant surgeon in the United States Army. In 1848 he was promoted to major and surgeon, but at the breaking out of the war resigned at once to join the Confederate forces.

BOOKS AND PAMPHLETS RECEIVED.

The Animal Suture in Intra-vaginal Plastic Surgery. By Thomas A. Ashby, M.D., Fellow of the American Gynæcological Society, etc., Baltimore, Md. Reprint. 1889.

Diagnosis of Tumors of the Bladder and Stone with the Cystoscope. By Otis K. Newell, M.D. Reprint. 1889.

A New Principle in the Surgery of the Bladder. By Otis K. Newell, M.D. Reprint. 1888.

Change in the Color of the Hair from the White Hair of Old Age to Black. Produced by Jaborandi. By D. W. Prentiss, A.M., M.D., Washington, D.C., Professor of Materia Medica and Therapeutics, Columbian University, Medical Department. Detroit, Mich.: Reprint. 1889.

A Report of Five Hundred Consecutive Cases of Labor in Private Practice in the District of Columbia, between the years 1864 and 1888. By D. W. Prentiss, A.M., M.D., Professor of Materia Medica and Therapeutics, Medical Department of the Columbian University of the District of Columbia; Member of the American Medical Association; Association of American Physicians; Medical Society of the District of Columbia; Medical Association of the District of Columbia; Washington Obstetric and Gynæcological Society of the District of Columbia, etc. Reprint. 1888.

The Arrest of Growth in Four Cases of Cancer by a Powerful Interrupted Voltaic Current. A Case of Pelvic Tumor Treated by Galvano-Puncture: cured. By J. Inglis-Parsons, M.D., Assistant Physician to Chelsea Hospital for Women. Reprint. 1889.

Address.

PREVENTIVE MEDICINE IN MASSACHUSETTS.[1]

BY H. P. WALCOTT, M.D.,
Chairman Massachusetts State Board of Health.

Mr. President and Fellows of the Massachusetts Medical Society:

The Commonwealth of Massachusetts has bestowed little attention upon matters relating to the practice of medicine, so far at least as the care of disease is concerned.

This society was organized for the purpose, among other objects, of making "a just discrimination between such as are duly educated and properly qualified for the duties of their profession, and those who ignorantly and wickedly administer medicine." It has therefore encouraged every movement for the improvement of medical education, and has jealously guarded for this purpose that provision of its by-laws which forbids the adoption by its fellows of any exclusive, and, in the light of human progress, necessarily restricted, system in the teaching or practice of medicine.

It remains then for the public to decide whether it is for the best interests of the community or not that the right to practise upon human life should be placed in the hands of those having a definitely ascertained knowledge of the human body and its workings.

From motives of self-interest merely our profession has no concern in the question so great as that of all other portions of the community. It might fairly enough be assumed that we are benefited by the increase in the injuries of the human body which it is our business to heal. But our profession has never taken that position. We have been interested in the efforts to secure some measure of protection for the ignorant and innocent against the conscienceless greed of the charlatan and quack. We have, at times, asked for legislation to accomplish this purpose, because we know, as no other part of the community knows, all the facts in the case. In the future as in the past the adroit advocate will employ his well-paid skill to prove that with us it is a matter of self-interest.

In answer to this it seems, however, sufficient to reply that nearly all civilized countries have devised some way of ascertaining and making known the qualifications of those who assume the responsibility of treating the diseases of man; and of giving a measurable security to the ignorant and helpless that he who publicly advertises himself as a doctor has a sufficient knowledge of the structure and functions of the human body in health and disease. It is, moreover, of the greatest interest to all that he who undertakes the treatment of disease should know enough to be able to discriminate between the diseases which begin and end with the sick person, and those which are communicable from one to another.

The peculiar importance of the second class lies in the fact that here are found those diseases which we have been most successful in limiting and preventing.

The legislature has decided that no person shall in this State practise dentistry without a certificate from a board of registration recording the fact that the applicant either was engaged in the practice of dentistry at the time the Act was passed, or had undergone an examination as to his knowledge and skill in dentistry and dental surgery satisfactory to the board. Possibly it may some time seem expedient that the same protection should be given to the body as a whole which is here bestowed upon a part.

Several States in the Union have passed laws for the regulation of the practice of medicine; in a majority of these the laws are not enforced. In a few States, where the laws have had the benefit of the enthusiastic labors of intelligent and active administrators, good has been accomplished by driving out of the State those whom Sir Thomas Brown has designated as "Quacksalvers and Charlatans, whose impostures are full of cruelty, and worse than any other, deluding not only unto pecuniary defraudations, but the irreparable deceit of death."

But it is unfortunately true that in the State of Illinois, which has been the leader in this movement, and where also much has been accomplished at the same time in improving the character of medical education, not only in that but in neighboring States, — there has developed in its legislative bodies an opposition to the Registration Board of so virulent sort that the leaders of this opposition are quite willing apparently to sacrifice their whole system of State preventive medicine for the sake of asserting the inalienable right of the people to be deceived, if they so elect; and this too in a State where the work of the State Board of Health has been of very high character.

While Massachusetts has not yet been willing to adopt any decided regulations of medical practice, she has, however, dealt quite differently in the relations ordinarily designated as state medicine. What these now are and should become, will be my topic for the short time during which I can claim your attention.

The State undertakes the care of disease only as a part of the public provision made for the poor, or for a class of the disabled more unfortunate than the poor, the insane. In both instances the care is exercised by humane men and women, educated in schools especially designed for instruction in medicine, by thorough courses of study in anatomy, physiology, and pathology, with observation of disease and its treatment in the wards of well-appointed hospitals.

The State, then, as a whole, does not believe that its dependent classes should be turned over to the care of charlatans and quacks, nor are they dosed with proprietary medicines. The same care is also given to the provision of a proper medical service for the militia.

In exceptional cases, in times of the extended prevalence of epidemic diseases, this State has authorized one of its departments to undertake, if need be, the care of those sick with infectious diseases.

But a far more important exercise of the authority of the State is found in the methods employed for the medical examination of the causes of death, for the registration of vital statistics, and for the prevention of disease. Since the year 1877 the coroner's jury has ceased to exist in this State; and in all cases of suspicious death the probable cause has been ascertained by educated and competent observers selected from our profession. For three years the results of the examinations made by these officers have been published, and present a body of statistics of great value, which indicate very distinctly in some cases the direction to be followed by legislation.

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[1] Annual discourse delivered before the Massachusetts Medical Society, June 12, 1889.

The law regulating the sale of poisons, enacted in 1888, was intended to control the sale of these substances, which the experience gained through the returns of the medical examiners had shown to be too easily obtainable,—the increase in the number of suicides from poisoning being the undoubted result of the unrestricted sale of the arsenical preparations for the destruction of insect pests, and the consequent easy way of obtaining this familiar poison.

It would be wise to add to the functions of these officers the duty of certifying to the causes of all sudden deaths, even when there is no suggestion of violence, and to the deaths occurring without the attendance of an educated physician.

Even if it be desirable that there should be no interference with the liberty which it is assumed that every person in Massachusetts should have in selecting his own physician, there are, it seems to me, very grave reasons of public policy which should require, at the hands of a duly educated physician or disinterested officer of the State, an intelligible statement of the cause of every death. A very hasty inspection of the causes of death returned upon death-certificates in any city or town in this State will reveal absurdities and contradictions which may cover crimes, and are, at least, the evidence of the grossest ignorance of the structure and functions of the human body in health and in disease.

When registration of vital statistics was introduced into this State in the year 1842, closely following upon and probably suggested by the English registration law of 1837, a foundation was laid for sanitary legislation.

Notwithstanding the slow progress of our registration towards scientifically accurate methods, it has contributed very much to the honorable position early taken and maintained by this State in the cause of preventive medicine. Registration is recognized the world over by responsible authorities as the only sure basis of sanitary legislation. Almost without exception the evidence drawn from these public and impartial records has been sufficient to convince any legislative committee charged with the consideration of public health measures. This evidence must naturally be susceptible of clear demonstration; and we shall all probably admit that in medicine, as in the other natural sciences, our anticipations of results, however useful, however indispensable they may be to the practitioner of medicine, however strong the individual's belief as to their certainty may be, still they have not that general acceptance, among physicians even, which should precede legislation.

The present discussion as to the communicability of tuberculosis may be used in illustration. Many here undoubtedly believe that the experimental work inaugurated by Koch has shown that many of the conditions surrounding those suffering from this disease may be controlled, and should be controlled, in the interests of the public health. Does it at the same time occur to any one that legislation is desirable in advance of the convictions of the great body of the medical profession,—or that there would be much chance of obtaining the wished-for legal regulation if this general consent of opinion did not exist?

The registration of deaths at least should be regulated and carried out under some competent medical supervision. However valuable the results may be which have been obtained from the present painstaking tabulation of names and figures on one hand, and faithful editing on the other, the resulting benefit falls far short of what might be effected with competent medical oversight from the beginning to the end of the work.

In the year 1849 a commission was appointed under the authority of this Commonwealth to make a sanitary survey of the State, "with a statement of such facts and suggestions as they may think proper to illustrate the subject." The commission thus constituted prepared a report which justly ranks with the best sanitary reports of the day. They introduce their statement with the following words:—

"We believe that the conditions of perfect health, either public or personal, are seldom or never attained, though attainable; that the average length of human life may be very much extended, and its physical power greatly augmented; that in every year, within this Commonwealth, thousands of lives are lost which might have been saved; that tens of thousands of cases of sickness occur which might have been prevented; that a vast amount of unnecessarily impaired health and physical debility exists among those not actually confined by sickness; that these preventable evils require an enormous expenditure and loss of money, and impose upon the people unnumbered and immeasurable calamities, pecuniary, social, physical, mental, and moral, which might be avoided; that means exist, within our reach, for their mitigation or removal; and that measures for prevention will effect infinitely more than remedies for the cure of disease."

The three commissioners who made this report were Lemuel Shattuck, Nathaniel P. Banks, and Jehiel Abbott. No one of them was a physician; and I have therefore quoted their statement of the province of preventive medicine in order that our profession might be relieved of the public suggestion of making an exaggerated claim for the importance of sanitary science. It cannot be necessary, however, to say more about the claims of public medicine in presence of a body which has itself so unselfishly participated in the work of the prevention of disease, and which has so consistently encouraged those of its members who are more exclusively engaged in this field.

The public statutes contain an amount of legislation which seems to afford ample protection to human life from attacks on any or every side.

Boards of health, State and local, appear to be possessed of all the powers to interfere at every period of human life, from birth to death, and even beyond the grave, or at least into it, which it is safe to trust to fallible mortal hands. Not to enumerate the general functions of the State board, to which allusion will be made later, it may be here said that to the local authorities have been assigned the following powers and obligations: —

The preparation and enforcement of such regulations as they may deem necessary for the health of the people, with reference to house-drainage and sewer connections where sewers exist. They shall make such regulations as seem necessary for the public health respecting nuisances, sources of filth and causes of sickness within the town, or on board of vessels within the harbor of seaport towns, and respecting articles capable of containing or conveying infection which may be brought into or carried out of the town, and may establish quarantines; and shall provide hospitals for the sick in times of epidemic diseases dangerous to the public health. They shall make inspections of nuisance and causes of sickness, and may destroy, prevent, or remove them as the case may require. They may order the occupants of dwelling-houses which are unfit for human habitation, from any cause, to put them in proper condition as to cleanliness, or to quit them, as seems best. They may make compulsory examination of premises when the public health seems to them to require it. Lands injurious to health by reason of stagnant water are declared to be nuisances to be abated by board of health. Householders and physicians knowing that sick people, for whom they are respectively responsible, are infected with small-pox, diphtheria, scarlet fever, or any other disease dangerous to the public health, are obliged to immediately notify the board of health of the facts.

These authorities shall also assign places for the carrying on of noxious and offensive trades, or may prohibit them.

The State has also enacted a system of compulsory vaccination and revaccination; has prohibited the sale of unwholesome food and of adulterated food and drugs. It has regulated the hours during which women and children may labor, and has compelled shop-keepers and manufacturers to make provisions for the protection of the health of those employed by them.

It has recognized the enormous injury to human life caused by the intemperate use of alcoholic drinks; has attempted to regulate such use by appropriate legislation; and has directed that in the teaching of hygiene and physiology in the public schools special instruction shall be given as to the effects of alcoholic drinks, stimulants, and narcotics on the human system. It has provided for the control of contagious diseases among the domestic animals. There might be added to this list many laws which have an influence more or less direct upon health by protecting the body from injury. But this rapid and probably incomplete survey of the State's endeavors to protect life and prevent disease will apparently show that there has been no hesitation in granting extreme powers to the sanitary authorities, and sufficient to meet any emergency.

Yet we know that two at least of the conditions which most seriously threaten life are not controlled as they should be, — a public and private disregard of sanitary cleanliness in the first place; and in the next, the unnecessary and reckless spreading of the communicable diseases, either by ignorance, or through a criminal disregard of the rights of our neighbors. In these directions the laws certainly have promised help.

We find that statutes which ought to be plain, and appear to be so, are, in reality, confused and vague. Those who seek protection for society as a whole are much less importunate than those whose selfish interests are involved; and the latter class is quite sure to be ably represented, and too efficiently for the public good, by trained advocates. There is also an unfortunate lack of direct communication between the general and local health authorities, which delays action in cases of emergency and prevents the co-operation which is, on all accounts, desirable.

Underlying all other reasons for failure to reach the highest measure of success is the absence of the strong influence of public opinion which controls both law and administration, and which cannot be effective till a better knowledge of sanitary matters be more generally diffused, and the people who suffer shall at last realize the interest they have in the prevention of disease. If the population of this State, as a whole, had shown a tithe of the interest and the energetic determination to diminish the agencies injurious to human health that our farmers have shown in procuring efficient legislation for the protection of some of the domestic animals, we should not now complain, as we do, of the unnecessary spread of many of the communicable diseases.

During the past year there has been a very general discussion throughout the country in the various medical societies as to the nature of diphtheria, and the best means for curing or preventing it. The practical deduction from all the facts thus far presented, regarding the disease, seems to be that its cause or causes are not to be sought in any of the conditions peculiar to urban life. A recent report of the Board of Health of Boston for the year 1888 states that 1117 houses in which cases of this disease occurred were carefully examined: 521 houses were found to be in good sanitary condition, and 596 in defective sanitary condition. So that something more than defects in the plumbing of the house must be looked to for a sufficient explanation of the origin of the disease. The most serious epidemics relatively have occurred in this country, as in Europe, among sparsely settled districts.

At present comparative pathology seems to offer the most promising field for careful study, and it may be that some little known disease of the domestic animals is the starting point of a malady which has, during the last year, in a number of localities, proved fatal to a third part of all those attacked by it. It is useless to claim that we have gained much in our resources for the cure of this disease; but its very evident communicability does enable us to use sanitary regulations which would undoubtedly limit the spread of the infection, if they could be constantly applied: these are, prompt notification of cases, isolation, and disinfection. For the carrying out of all these measures we have apparently all the authority which laws of the Commonwealth can give; and yet the result is too evident to all.

No city, even, has yet provided for the use of its health authorities the means of effectual isolation of more than one of the communicable diseases; a few only have a system of compulsory notification in actual use, or a scheme of disinfection that has any real value.

In obedience to the will of the people legislative bodies have made laws, but they have in very few cases created an adequate machinery for the execution of these laws; in fact, it is not easy to see how many of our statutes can be enforced by the bodies actually charged with the supervision of the public health in our smaller towns. In the majority of these the board entrusted with sanitary powers is the board of selectmen, a body representing efficiently in most affairs the capacity of the town for self-government; and that means, in Massachusetts at least, good government. But with scarcely an exception these boards are unacquainted with the vast and somewhat indefinite powers given them by law for protecting the public health, and so, honestly conscious of their ignorance of sanitary work, they do nothing; and, in their incompetence, they are perhaps wise in doing nothing. But they have unfortunately also neglected the provision of law which would amply repair their failure, — the authority given to them to appoint a competent officer of health. The prevention of disease in these communities, an interest of the public, is therefore in the hands of a body of men whose livelihood depends upon their ability to cure the disease for the prevention of which their services are rarely retained.

This apparent neglect of the towns rests, I am sure, very largely on the confidence reposed in the public spirit of the local physicians; it is remembered that they always have done all in their power to protect their neighbors, and this too without the intervention of laws which seem to impair the just powers of the selectmen.

There are, however, many serious objections to this service so rendered. In the first place, it is necessarily of secondary interest to the doctor, whose time may be wholly occupied in the hand-to-hand struggle with death in the case of some one person who for the time being must be of more consequence to him than all others. In the next place, he may be required in the exercise of his judgment as to the influence of some manufacture or trade upon the health of the town, of the neighbors, or of the workmen, to be placed in opposition to the influential members of the small community upon whose good-will his earnings may depend.

Under such conditions it is no reproach to him if he declines a service which does not belong to him, and for which he receives no compensation.

Lastly: the special field which has been opened in late years to the sanitary officer is so extensive, that the whole time of the thoroughly educated physician will be required for its cultivation. The inability of the small towns to properly pay such qualified officials might be overcome by the formation of districts, and bringing several towns under one sanitary head.

For the present, however, the service of public protection is essentially unpaid, and dependent upon the voluntary services of our profession. But if the medical men of this State are substantially agreed upon the necessity of a better provision for the protection of the public health, and are willing to use the influence that properly belongs to them, the means of protection will surely be contrived. It is a matter, then, of much importance that we should examine the present position of the medical profession with reference to the prevention of disease, and more especially the scientific foundations of the many claims of the sanitarian.

From the writings of Hippocrates, down through the many changes of medical opinion to the present generation, are to be gathered expressions which might be used by the most advanced investigators of the present hour in stating the conditions and prospects of preventive medicine. The Father of Medicine built firm the foundation when he declared that a proper investigation of medicine should include a study of the effects of airs, waters, and places, together with a knowledge of the kind and quantity of food; and that from these elements was to be made a diagnosis of the disease and a plan for its cure.

It is only in our own time, however, that the hygiene of the fathers has become a scientific fact, or, more correctly speaking, a collection of scientific alliances, — like a vigorous tree thrusting its roots far out into every near field that contains appropriate food. It has questions to ask in many departments of knowledge, and insists upon finding out how the human body, under the ever-changing physical and even moral relations of life, can best be protected from its multitudinous foes; for the aim of hygiene is the increase as well as the protection of health.

We are met at the very outset by the question, How much can really be done to improve the health of the community and prevent disease? It is never out of place to refer to the benefits of vaccination, and the immense influence it has had on the world. This discovery was the legitimate triumph of observation and experiment. But the condition of mental unrest, and the scepticism which our modern life appears to mistake for the scientific spirit, have led to the reopening of the question, — with the public, it should be said, — as to the value of Jenner's discovery. Some of the doubts are expressed by the writer of an article in the "Encyclopaedia Britannica;" but the fantastic views here expressed represent nothing that we know as fact or are willing to accept as theory. He regards small-pox as "an infectious disease arising out of a common physiological or constitutional eruption on the teat of milch cows, and acquiring its special character by the persistent irritation to which it is subjected at the hands of the milker." Erysipelas, jaundice, vaccinal ulcers and vaccinal syphilis, are included by him among the natural and necessary consequences of cow-pox, — not as results of foreign contamination of the lymph. He also believes that small-pox is destined to die out uninfluenced by vaccination.

The experience of this State is that in the year 1886 there was no death from small-pox; in the following and last registration year there were three deaths from this disease, and this in a community constantly exposed to the introduction of the disease from abroad.

Moreover, a certain number of years of immunity from the prevalence of small-pox inevitably leads to the neglect of vaccination and consequent accumulation of susceptible persons. That the disease itself has essentially changed in its terrible severity is not evident.

In the German empire during the year 1886 the death-rate from small-pox per (1,000,000) million living was 3.5; in cities of the Austrian empire it was sixty-five (65) times greater; in Hungarian cities it was four hundred and eighty-six (486) times greater. Of the 155 deaths from small-pox in Germany, 45 occurred in the interior of the empire, where the community is better protected by vaccination; and 110 in the border lands and seacoast towns, where exposure to the influences of countries not so well guarded is more direct.

A recent experience in the English city of Sheffield is also instructive. Here prevailed in 1887–8 an epidemic of small-pox, so severe that 22 persons of every 1000 living had the disease, and 2 out of every 1000 died. The sanitary condition of the population appeared to have little influence. The death-rate among children was smaller than in any previous epidemic of small-pox, this being due to the increased prevalence of vaccination. The numerical statement of the saving of life in consequence of vaccination cannot be accurately made; but we do know that if the vaccinated children in this English city had been attacked at the same rate as the unvaccinated, they would have numbered 7000 in place of the 353 actually counted, and 3000 deaths instead of the 6 which were recorded.

It is, however, asserted that the protection from small-pox is secured by vaccination only at the expense of many diseases incident to the transfer of organic matter from one being to another. In Sheffield, the annual vaccinations of children in the last three years have averaged 9000, and no death-certificate mentions vaccination as a cause of death.

It is undoubtedly possible that, through a carelessness nothing less than criminal, one contagious disease at least may be inoculated with the vaccinal lymph into a previously healthy person. The use of animal lymph has been recommended as a protection against this danger, and by reason of many evident practical advantages.

Though statistics upon this subject in Massachusetts are wanting, it is probable that lymph from the calf is the matter generally used.

The German authorities have met the question of the possible danger of transmitting any disease from the calf to the human being by certain wise regulations, in accordance with which competent veterinarians determine the health of the animal used, and no matter is distributed until a post-mortem examination of the calf has shown it to be free from disease.

It has long seemed to me just that the state, in making vaccination compulsory, should also give its citizens the fullest assurance that they shall not be exposed to the dangers of matter infected with other diseases. While it may not be desirable to interfere with the private establishments already engaged in the business of cultivating and selling vaccine matter, — a business which it is but fair to say appears to have been faithfully and intelligently carried on, — still there should be some oversight by competent veterinarians at least. At some of the public institutions arrangements could easily be made to provide at least all the material required for vaccinations undertaken at the public expense.

When it is considered that every vaccination involves the introduction of animal matter, rarely in a fresh state, and possibly contaminated in many ways, into the system of the patient, the wonder is, not that some one out of many thousands should suffer, but rather that thousands escape without serious inconvenience, and carry with them almost absolute immunity from the hideous pestilence of small-pox.

It may be remembered that in Jenner's lifetime the idea arose that vaccination might be a means of controlling other diseases besides small-pox. In answer to a communication upon this subject Jenner replied: —

"I never was so sanguine in my hopes of seeing the plague extinguished by vaccine inoculation as some of my friends were. . . . . I will just drop a hint: the vaccine disease, in my opinion, is not a prevention of the small-pox, but the small-pox itself; that is, the horrible form under which it appears in its contagious state is (as I conceive) a malignant variety. Now if it should ever be discovered that the plague is a variety of some milder disease, generated in a way that may even elude our researches, and the source should be discovered whence it sprang, this may be applied to a great and grand purpose.

"The phenomena of the cow-pox open many paths for special action, every one of which I hope may be explored."

Fifty years passed away before Pasteur and Koch took up the suggestion and began the exhaustive investigations of the protective inoculations by means of cultivations which have been so treated as to represent those milder forms of disease anticipated by Jenner. One man, alone and unaided, began this work, which best illustrates the preventive powers of medicine; he met with abuse and ridicule from many of his profession even. For his followers in this field of experiment and inquiry, costly laboratories have been provided by prudent and wise governments in some countries, by grateful fellow-citizens and admirers in another.

The laws upon the statute book have been already noticed, — some of these, and in fact the larger portion, and those which more nearly touch the comfort and safety of the individual, are executed by local health authorities. There are, however, many important questions which concern the interests of several communities, or are of such character that they cannot be properly controlled by local organizations. These questions have in this State been referred to the State Board of Health. This board has also advisory functions, and is authorized "to undertake investigations into the causes of disease and the effects of localities, employments, conditions, and circumstances on the public health;"

to investigate and advise upon the best means of assuring the purity of water-supplies, and of the disposal of refuse matters and sewage.

With the history of that organization you are familiar; its efficiency and influence will always be dependent, to a large extent, upon the favor which the medical profession may bestow upon it. The Board of Health, in its proper sphere, has always received from this society encouragement and assistance.

So far as the investigations into the causes of diseases in the interests of preventive medicine are concerned, there are two methods of inquiry. One is of a statistical nature, and rests upon an accurate recording of all the incidents in the history of the disease under consideration, — that is to say, a registration of vital statistics. In the second place, we have the experimental methods. Of these, what may be called the popular experiments are performed for our instruction by water boards in the case of polluted water-supplies, and by milk dealers in certain epidemics of communicable diseases, — unwittingly in both cases. Now these experiments are always unsatisfactory, from the want of a sufficient knowledge of all the attendant conditions; nor have we satisfactory warning of the time when the experiment is to be made, and can only attempt to acquaint ourselves with causes after the effects have become evident. The other experimental method is that of the laboratory, where, in the examples above taken — a polluted water supply and an infected milk — the direct experiment is made upon some appropriate animal by introducing within its body a certain quantity of the suspected material and carefully noting the results.

It is always to be remembered, however, that man and the lower animals are affected oftentimes in different ways by one and the same substance or influence. The bacillus described by Eberth appears to be now generally recognized as constantly present in those suffering from typhoid fever. It has been detected in suspected water-supplies. Experiments on the lower animals have thus far failed to produce satisfactory evidence of its communicability to them. Yet we have now a mass of facts recorded showing beyond question that an organic entity has, in certain cases, found entrance to a water-supply, as in the historic epidemic of Plymouth, in Pennsylvania, where, in a community of 8000 souls, 1153 were taken sick with typhoid fever and 111 died, all apparently clearly traceable to the infection of the village water supply by the stools of a person ill with typhoid fever; or, as in a recent outbreak in Cambridge, in this State, where a quantity of milk collected from some New Hampshire farms, of more than average neatness, had been exposed in some of the processes of its preparation for market to contamination from a well dangerously near the spot in which had been deposited the dejections of a man ill with typhoid fever. This milk carried to a distant city in another State sickness and death. These experiments, which have been unconsciously performed for us upon this large scale, have their counterparts probably in the experience of every physician here present.

In a State so densely populated as this it is not possible to find a water-supply sufficient for the needs of our large cities free from the dangers of fecal pollution. We must recognize the imminent peril, and take seasonable precautions to ward it off. A thorough policing of the tributary watershed should be constantly kept up, and a systematic notification to some central authority of cases of disease liable to endanger the water-supply would enable that authority to secure at the point of danger the prompt local disinfection that may be necessary. It is also well that we should remember in this connection that of the mere making of laws we have had enough, perhaps; an educated sense of sanitary decency well diffused through all classes in the community will be the most effectual agency for protecting our cities and towns from the dangers of polluted water-supplies.

As the infective material is undoubtedly present in the discharges from the bowels in typhoid fever, the thorough destruction of the stools should be effected either by chemical action or by heat; or, better still, by fire, when some mechanical appliance shall make the kitchen fire available for the purpose without nuisance.

While the evidence of the origin of typhoid fever in fecal pollution is almost overwhelming, it must be admitted, it seems to me, that the particulate contagion of it may have a life distinct from the human body through considerable periods of time.

During the year 1888 typhoid fever was more prevalent in New England than it had been for a number of years. It broke out at nearly the same time in many widely separated districts; the cases appeared in large numbers during the months of July and August, under circumstances which made it generally impossible to trace them back to preexisting cases. The experiences of the bacteriological laboratories indicate that the bacillus assumed to be constantly associated with typhoid fever can be reproduced in various artificial culture media for many generations. What the hand of man can accomplish in the cultivation of these microscopic growths, nature has probably already done in some of her mysterious working places. Our knowledge of the innumerable microphytes is still so limited that we do not seem justified at present in assuming that this bacillus under consideration is necessarily connected with man and man alone.

(To be continued.)

Original Articles.

THE USE AND MISUSE OF DISINFECTANTS AND DEODORIZERS IN MEDICINE.[1]

BY HENRY JACKSON, M.D.

As fatal confusion exists in the minds of the laity as to the meaning of the words disinfectant and deodorizer, so too often medical men, in practice if not in theory, confuse the two classes of substances.

The great advance made during the last ten years in the etiology of all pathological processes has proved that many infectious diseases are due to the growth of bacteria, and rendered it certainly highly probable that all infectious diseases are due to similar organisms. We can, therefore, from laboratory investigations of the biological characteristics of the various known micro-organisms, approach the matter from a scientific standpoint.

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[1] Read at the Annual Meeting of the Suffolk District Medical Society, April 27, 1889.

Many terms are used and often wrongly as synonymous, namely: disinfectant, antiseptic, germicide, deodorizer, sterilizer.

No better definition of a disinfectant in the broadest sense can be given than that of Worcester, "a substance which prevents infection." This definition may be translated into scientific language in the words of Koch as, "a substance which completely destroys micro-organisms." The ease with which different micro-organisms can be destroyed depends upon a great fundamental botanical distinction. Does the micro-organism grow by simple cell division, as is the case with cocci, or through the formation of spores or similar perennial forms ("Sauer-formen"), as is the case with the bacillus of anthrax?

In the first instance the germs are easily destroyed, as for example by a 1 or 2 per cent. solution of carbolic acid; in the second instance the spores are very tenacious of life, resisting a temperature of 100° C. and soaking for hours in a 5 per cent. solution of carbolic acid.

As many diseases have been proved to be caused by micro-organisms which have spore formation, and in others we are yet in doubt as to the botanical history of the pathogenic organism, no disinfectant can be absolutely relied upon except one capable of destroying spores.

An antiseptic is described by Worcester, as "a substance which prevents or checks putrefaction:" from a bacteriological standpoint an antiseptic is a substance which prevents the growth of bacteria. Though the latter is the definition of an antiseptic given by Koch, this word is often used as synonymous with disinfectant, namely, by French writers on bacteriology and in common parlance.

The new word germicide, synonymous with disinfectant, is a desirable addition to the nomenclature of bacteriology, though at present it is used more largely in commercial than in scientific circles.

A most exact word, and one implying no theory, is *sterilize*. On account of the confusion arising from the use of the various terms spoken of, it is highly probable that the words "sterilize" and "sterilizer" may be as widely used in general medicine as they are now universally employed in the laboratory.

A deodorizer is a substance which has the power of destroying fetid effluvia; it has the power of absorbing or chemically destroying foul gases, and not merely of covering up bad odors by a pungent odor inherent in the substance used as a deodorizer.

The deodorizers pure and simple, as various oxidizers, sulphate of iron, and charcoal, are not in any sense even antiseptic; many which act chiefly by covering up foul odors are antiseptics of more or less efficacy, but not disinfectants

As a legacy handed down from the time when foul odors *per se* were considered as the cause of numberless diseases, the various deodorizers are still held by the laity and by too many physicians as the most powerful disinfectants. Many a house is made obnoxious and the patient much annoyed by the foul odors of some pungent substance, perhaps falsely called a deodorizer, and certainly not in the faintest degree antiseptic.

Deodorizers are of great value in practical medicine, in that their use often renders the patient and his attendant much more comfortable by destroying foul odors. In all cases necessarily having, for a time at least, a foul discharge, they are indispensable, but here their use ends: no physician should order that a deodorizer be placed in a chamber under the impression that thereby the disease can be in any way affected, or the danger of contagion prevented. Yet it is a very common thing, in the poorer parts of the city at any rate, to see a small saucer of chloride of lime, a little carbolic acid or phenyle, placed in the sick room. Even camphor is still in some repute.

Within a few months a new substance was brought forward in Boston which was claimed to be a most powerful disinfectant and deodorizer. A sample was given to me by one financially interested in the discovery. It proved to be a most powerful deodorizer, as, though itself free from all odor, it removed almost instantly all stench from foul meat. But as a disinfectant it was useless, as in five days several kinds of bacteria grew in a fluid which contained 25 per cent. of the so-called disinfectant. Such is the general history of almost all deodorizers. Chlorine and bromine gas are powerful deodorizers as well as disinfectants, but it is much to be regretted that, in spite of the proofs to the contrary given by Koch, chloride of lime, chloride of zinc, etc., still hold their position as disinfectants.

The chief use of disinfectants is in cases where they can be directly applied to some external surface. All organisms on the surface, and often those in exudation upon the surface, can be destroyed or removed, but it is of the greatest importance to remember that in almost all diseased surfaces the organisms are present, not only in the part microscopically diseased, but extend into the underlying tissues, which, to the naked eye at least, present as yet no pathological changes. So far as at present known no disinfectant possesses the power of penetrating living animal tissues and destroying micro-organisms situated in its meshes, except the actual cautery.

We are limited in our use of disinfectants by many conditions: —

1. The substance must be used in such strength and in such a way as not to injure the integrity of the surface to which it is applied and not to cause constitutional symptoms; 5% solutions of carbolic acid, chlorine, and bromine are powerful irritants. Strong solutions of corrosive sublimate are very likely to cause poisoning when so used that absorption is possible. Carbolic acid is also a violent, though less dangerous, systemic poison.

2. The disinfectant must be brought in contact with the micro-organism for some considerable time. A solution of corrosive sublimate 1 to 1000, dry heat of 140°, destroys organic life almost instantly. In laboratory experiments this condition frequently exists, but in practice the micro-organisms are usually buried in some fluid, as pus, situated in necrotic tissue or in some new cell formation. In such cases we must remember that an instantaneous

exposure to the disinfectant, as in washing, destroys no micro-organisms except such as are situated superficially. The element of the time necessary to destroy the germs must always be considered.

3. The chemical nature of the disinfectant used. Corrosive sublimate, the most powerful and cheapest disinfectant, cannot be used to disinfect an albuminous fluid. For instance, it is useless for the disinfection of sputa: corrosive sublimate causes at once a coagulation of the albumen of the sputum, and in the centre of the coagulated masses the bacilli may lie securely in the strongest solution of corrosive sublimate.

4. The mechanical difficulty of reaching many parts of the body. It is very difficult to distend any of the internal cavities so completely that the disinfectant fluid shall be brought into all the folds. Practically the difficulty confronts us especially in treatment of the nose, bladder, and vagina.

This leads me to speak of the second use of disinfectants, the empirical. We know already from clinical experience that a few drugs exist which are specific in certain diseases, namely, mercury in syphilis, quinine in malaria. Investigations of recent years render it highly probable, at any rate, that these diseases are due to the development of some organic forms; hence we may fairly infer that the action of the drugs mentioned in the treatment of these diseases is to destroy the specific organism.

It is certainly possible that we may find drugs which have a similar action in other infectious diseases. Therefore it is not unreasonable to experiment in cases of typhoid fever, diphtheria, etc., with various antiseptics which are from time to time brought to the notice of the medical world. This is entirely different from the indiscriminate use of numberless weak antiseptics in the hope of destroying the germs of local inflammatory products, where we know the organisms with which we have to deal and the harmlessness of the agent which we employ.

To give an instance in the treatment of a most severe infectious disease, diphtheria, we have here a disease associated with the necrosis of the surface and underlying tissues of mucous membranes: the specific micro-organisms extend into the surrounding tissues, far beyond the reach of any antiseptic locally employed. As the disease is at best so fatal a man may feel justified in using various internal remedies in the hope of combating the disease by internal medication; but he is unjustified in annoying his patient by the constant application to the surface of weak antiseptics which can have little or no effect upon the existing micro-organisms.

In one disease, erysipelas, we have seen the signal failure of all antiseptic treatment. There we have a disease situated on the surface, open to inspection at all times; we know that it is due to the growth in the lymphatics of the skin of a micrococcus very susceptible to mild antiseptics, and yet no treatment with antiseptic solutions has proved itself efficient to prevent the spread of the disease.

In our desire to *cure* disease we should never forget that in prophylaxis, in asepsis, lies our greatest hope. There we can often work out our proper course on an exact and scientific basis.

If the hands of the operator and the instruments are sterile we can feel reasonably sure that the chief danger of sepsis is removed. The hands and instruments may be sterilized as follows: —

First. All fatty substances and coarse dirt must be removed by hot water and soap. A surer method is to wash the hands with turpentine, and rewash them with soap.

Secondly. Our hands may be sterilized by corrosive sublimate, our instruments by heat or 5% carbolic acid.

Here again we must remember that it is not time alone which renders our hands aseptic, but thorough cleansing. This is well exemplified in the history of several obstetric clinics of Europe. In some of the clinics there used to be a rule that no student should enter the lying-in wards for ten days, two weeks, or perhaps longer after having had any connection with septic matter or infectious diseases. In Prague, in 1883, the rule was different and founded on much more scientific ground. When a student had had any connection with septic material he was debarred from the clinic until he had changed all his clothes, bathed, and disinfected his hands. Several times during a summer course I saw the first assistant attend an autopsy and in a few hours go into his wards again; yet in the Prague lying-in wards sepsis is almost unknown.

In closing I would urge that physicians, in the use of disinfectants, should in the first place consider what organisms they have to deal with, and where in all probability they are situated, and in the second place should choose a substance capable of performing what they intend to accomplish.

A CASE OF COMPOUND FRACTURE OF THE SKULL;

WITH EXTENSIVE LACERATION OF THE BRAIN: RECOVERY.[1]

BY S. J. MIXTER, M.D.,

Surgeon, Carney Hospital; Surgeon to Out-patients, Mass. General Hospital; Demonstrator of Anatomy, Harvard Medical School.

The patient, a strong, healthy man weighing nearly two hundred pounds, while sitting on a tricycle fell backwards to the ground and the machine turned a somersault on top of him, the bolt or pin of the front wheel striking him on the side of the head, producing a wound which bled freely. He was stunned for an instant, but was able to walk soon afterwards.

A physician was called, but, owing to the excited condition of the patient, who refused to allow a thorough examination, was unable to do more than bring the edges of the scalp together with a few stitches.

The next day the patient, who was a hotel-keeper, was about the office of the hotel, and for the next three days spent but little time in bed. The injury was received on October 7th. On the 11th Dr. J. H. Wright, of Natick, saw him in consultation, and, finding the patient beginning to complain of slight pain in the head, and there being a tumor at the seat of injury, opened one corner of the wound, which had healed by first intention, and introduced a probe, which struck rough bone and easily dropped through an opening in the skull an inch or two into the interior.

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[1] Read before the Suffolk District Medical Society, April 27, 1889.

I saw the patient at his home that evening. Up to this time there had been almost no unpleasant symptoms. Somewhat restless nights, some pain in wound, and during the previous twelve hours slight frontal headache, were the only things complained of. No paralysis of motion or sensation could be detected.

On the right side of the head, above and somewhat posterior to the external auditory meatus, was a pulsating tumor two inches in diameter and elevated about one-half to three-quarters of an inch, with the line of the united scalp-wound across it.

The patient was etherized, and on opening and enlarging the original wound a considerable quantity of soft white material, evidently brain, together with some clotted blood, was found between the scalp and bone. On removing this, an almost circular opening, about one inch in diameter, was seen in the skull, through which the finger could be introduced one and a half inches, and at the bottom could be felt loose fragments of bone. These were carefully removed with forceps, as well as several pieces of depressed inner table and masses of hair. Fifteen pieces of bone, from one-fourth to three-fourths of an inch in diameter, were removed, and at the same time a considerable quantity of brain substance also flowed out or was wiped out. When the last fragment was removed there remained a considerable cavity, about which the finger could be swept freely. The removal of the last fragments was followed by a sharp hæmorrhage from a large branch of the meningeal and a couple of arteries in the brain substance. To secure the first it was necessary to take out a button with the trephine, while the latter were secured by tying a considerable piece of brain, in which the vessels were situated, with silk.

The wound was washed out, and a drainage-tube and iodoform gauze placed in the wound.

The patient was left in charge of Dr. Wright, and I next saw him nine weeks after, when he came into my office. At that time there was some loss of power in the left hand, but it was rapidly returning. There had at no time been total loss of power and little of sensation. No disturbance of vision. One of the most marked symptoms during recovery, when he began to walk about, was that he would drop his cane or packages held in the left hand without knowing it. The wound had nearly healed, only a small granulating spot remaining.

He has now entirely recovered in every respect. There is no paralysis, and he is apparently as well as ever.

The case is of interest, as it shows how severe a laceration of the brain may exist without giving rise to any symptoms of importance, and what an amount of brain tissue may be actually taken away without bad effect. In this case between ℥ss and ℥i must have been lost. The laceration was just behind the motor tracts, so that the only symptoms of paralysis were apparently due to extension forward of the inflammation, or to indirect violence inflicted during the operation, and entirely disappeared in a short time.

This region of the brain has been supposed to be the seat of a centre of muscular sense, and the fact that objects were dropped without the knowledge of the patient would seem to show that such a centre was involved, though now this symptom is not present.

Clinical Department.

TWO CASES OF PSEUDO-LOCOMOTOR ATAXY FOLLOWING DIPHTHERIA.

BY MORTON PRINCE, M.D.,

Physician for Nervous Diseases, Boston City Hospital, Out-Patient Department.

Ataxia following diphtheria is sufficiently uncommon to make the two following cases worth recording. The first one is additionally interesting from the fact that the original diphtheritic infection was occasioned by an autopsy wound, and its specific character would have been overlooked but for the later development of a pseudo-ataxia. I say pseudo-ataxia, because the case at first sight had all the appearance of a true posterior sclerosis, and might easily have given rise to much difficulty in diagnosis — as it in truth did at first — as there was the still further coincidence of a history of absence of knee-jerks for some two or three years past.

Case I. The subject was at the time an interne at one of our hospitals. When he first consulted me there was complete *absence of the knee-jerks,* slight *ataxia of hands,* as indicated by his inability to touch the tip of his nose with precision when his eyes were shut, and moderate *ataxia of legs.* This was sufficiently marked to attract my attention, before being consulted, as I casually met him about the hospital attending to his duties. His gait was "jerky," ataxic, and he was unable to draw circles with his toes with normal precision. He *swayed* abnormally with eyes shut and feet together. His hands and legs were slightly *paretic,* though he was able to be about and attend to his duties. The weakness of his legs he was principally conscious of going up stairs. Very slight *anæsthesia* of fingers and feet. He complained of numb, pricking feeling in the ends of his fingers. The pupils were normal, and an examination of the eyes by Dr. O. F. Wadsworth showed them to be without change. No atrophy, or muscular irritability to percussion; no paralysis of soft palate, bladder, or bowels; no tenderness of muscles or nerves, or lightning pains. Faradic reaction of muscles good.

In consideration of the statement of the patient that he was confident of the fact that about three years before, when, as a medical student, his attention was for the first time attracted to the knee phenomenon, he had found on testing his own reflexes an entire absence of the knee-jerk, and had never been able to obtain any since, the case had a most suspicious look.

This was October 15th last. Inquiry, however, elicited the following history. About the middle of the preceding August, while making an autopsy on a diphtheritic subject, he had cut his finger. The accident was followed by swelling and inflammation of the finger and arm, but no membrane developed in the wound. The glands of the arm were noticed to be enlarged. There does not appear, however, to have been any particularly marked constitutional symptoms. About ten days to a fortnight later he had difficulty in swallowing liquids, which regurgitated through his nose (paralysis of palate). About two weeks later still, that is, about the middle of September, he noticed his legs and then his hands began to grow weak. This developed into the condition present at the time of my examination. He never had syphilis.

The subsequent course of the case may be briefly told. The legs began, during the following weeks, to improve, but the hands to grow worse, the ataxia being replaced by a paretic condition of both sensation and motion, so that, for example, he had great difficulty in buttoning his clothes. Grasp of hands, dynamometer L. 60, R. 70. He persisted, however, in keeping about his work, and as long as he did so his hands failed to improve. Finally he consented to take absolute rest in bed, and as soon as he did so he began to improve, and about the middle of December he was practically well. At that time the knee-jerks were still absent, but a few days ago he wrote me that they were "as good as they ever were," whatever that may mean.

The story of Case II. may be more briefly told. It was a child four and a half years old. Ten weeks previously he had had diphtheria. Two or three weeks after recovery the mother had noticed a nasal character to the voice. Nothing else was noticed until October 7th, when the boy complained of pain in right ankle, and on the next day the condition present at the time of my first examination (October 19) developed suddenly, according to the mother, namely, *paralysis of soft palate, absence of knee-jerks,* and great *ataxia* of legs. He could walk only with great difficulty, owing to inability to control his legs. The legs tested separately seemed to be strong enough to carry him, though there was undoubtedly some paresis. *No anæsthesia,* such as would be elicited by the prick of a pin or coarse touch. The age of the patient precluded finer tests. Some awkwardness in use of left arm, whether due to ataxia or paresis difficult to say. No tenderness of muscles or nerves. No atrophy. Head tends to fall forward, and he can only turn it slightly towards median line to right (paralysis) but easily to left. Pupils react very sluggishly and incompletely to artificial light; in strong daylight well, but left less than right, and rhythmical oscillation of pupils can be made out under latter conditions. Muscles of legs respond well to faradic current.

In the course of the following week the boy grew worse, paralysis rapidly developing, obscuring the ataxy and making it almost impossible for him to stand or walk. As he became too weak to attend the out-patient clinic, the case was lost sight of.

Curiously enough, both cases came under observation at the same time.

The points of interest in the first case are: the paralysis of the palate, without primary inflammation of the throat, showing that this is not due to the local action of the poison, as is commonly assumed (Leyden); the infection following an autopsy wound; and the accidental association of the disease with original absence of knee-jerks, the latter in itself rare. These cases also suggest the probability that many of the cases of locomotor ataxia reported as cured may be of this kind — a pseudo-ataxy following unrecognized attacks of diphtheria. When occurring in children this probability becomes almost a certainty.

APPARENT PLACENTA PRÆVIA.

BY WM. H. LATHROP, M.D., LOWELL, MASS.

I attended an obstetric case February 6th which had a feature of special interest. The woman was confined prematurely — at seven months — the miscarriage being caused probably by the separation of the placenta.

I felt the placenta when the os had just commenced to dilate, and supposed that I had a case of placenta prævia, but was surprised that she had no hæmorrhage. I soon found that the placenta was entirely loose. It had become detached from its original position, and found its way to the os, lying across the opening. It thus gave every appearance of being a placenta prævia, until it was observed to be detached, while its manipulation also was seen to cause no bleeding.

The patient was quite pale. She lost some blood when the placenta separated, and this passed in the form of one large, hard clot, after the delivery of the child.

This clot was unusually firm, and the serum from it had discolored the amniotic fluid. She had no hæmorrhage to speak of, excepting this.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

H. F. VICKERY, M.D., SECRETARY.

The annual meeting of the Suffolk District Medical Society was held April 27, 1889, the President, Dr. John Homans, in the chair. Besides other incidental business, the following officers were elected for the ensuing year: —

President, George W. Gay; vice-president, Edward N. Whittier; secretary, H. F. Vickery; treasurer, E. M. Buckingham; librarian, B. J. Jeffries; commissioner of trials, C. W. Swan; member of the nominating committee, Massachusetts Medical Society, Francis Minot; committee of supervision, F. Minot, R. M. Hodges.

Dr. Homans thereupon vacated the chair in favor of the President-elect, Dr. G. W. Gay. The president of the Massachusetts Medical Society, Dr. D. W. Cheever, then made the following remarks: —

Mr. President and Fellows of the Suffolk District Medical Society: I thought it was proper to make a few remarks at this meeting so nearly preceding the annual meeting of the State society, and therefore I ask permission to take up a few moments of your time with regard to the affairs of the society in the whole State.

I have visited fifteen out of the eighteen districts of the society throughout the State, and it seems to me very proper that I should make a semi-official visit among my friends here of the Suffolk District, because, although perhaps you may not realize the fact, the Suffolk District comprises one fourth of the entire State society. Two other districts are, however, of enormous size, — the Middlesex South has quite two hundred members and the Worcester District has one hundred and twenty or thirty. It seems to me quite probable, therefore, that before many years two additional districts will be created.

In going about among the districts of the State I find several very noticeable changes have taken place, which I wish to speak of. Perhaps this society does not realize that there are now in the State, outside of Boston, some ten to twelve special hospitals in the large cities and towns. I was quite surprised to find it so. The larger cities and towns have very fine hospitals, notably Springfield, Pittsfield, Cambridge, Lowell, and a great many other towns. This seems to me a very important fact in medical education, inasmuch as it gives the gentlemen throughout the country districts opportunity for clinical study at home; and it is also a great safeguard against epidemics, and is of great service in cases of severe and sudden railroad accidents, which occur all over the State.

The meetings of the other districts throughout the State are regularly held; some of them meeting but twice a year; most of them quarterly; some every two months; some every month; and when we realize how much harder it is for those gentlemen to get together than for us to come down on the horse-cars to this meeting in Boston, I think we must admit that they do remarkably well. In some places I heard excellent papers; and in some of the smaller societies one very interesting point was this — that every member took part in the discussion of the papers. That is not always the case in this society, I have noticed; or in other societies of smaller size in Boston, in some of which remarks seem to fall, as it were, still-born. One plan which some of the district societies, are now pursuing, and which I have brought to the notice of a number of the other district societies, is this: that every second or third meeting they invite a specialist to come from the city to give them a paper or lecture illustrating some of the more special topics in medicine, especially such departments as the ear, — which I heard very well illustrated in one of the districts by a gentleman from Boston, — the eye, the skin, and a great many other specialties which would occur to one; not that a great amount of instruction can be given in one half-hour, but still it brings up all the new points, and is of great benefit to the country districts.

Returning to ourselves, I am happy to say that it seems to me for the last four or five years the division of the Suffolk District into sections has been of immense value, and that it was never more flourishing than now; and I am happy to say also, that there seems to be good prospect at the annual meeting of having some excellent section work done; the affair being in the hands of vigorous chairmen and secretaries, and the papers I have already seen being very promising indeed.

With regard to the annual meeting I will only say one word: probably most of you know that we have succeeded in getting a hall large enough for the annual dinner; that we are to hold the annual meeting in the Mechanics' Building on Huntington avenue; that we have secured it for two days; that all the section meetings, the annual meeting, and the dinner will be there; so that those who come from a distance can go to this building and spend the entire two days without loss of time or fatigue; and if this succeeds, I think we shall find the Mechanics' Building will be our permanent home for annual celebrations for a good while to come. I am happy to say that the anniversary chairman has succeeded in attracting to the next annual meeting some very distinguished gentlemen from distant parts of the United States, who will be present and address you, and whom it will be a pleasure for you to see and know. We promise, then, to have a very good annual meeting, and we hope there will be a very large attendance. In this connection I may say what I have felt it proper to say to the district societies throughout the State, that this annual meeting will cost a great deal more than any previous one has done; that the hire of the hall, etc., will enlarge the expenses probably to the extent of five hundred dollars; that we shall have to run in debt for this amount, and that it will have to be taken out of the next year's assessment.

A paper was read by Dr. Henry Jackson on

THE USE AND MISUSE OF DISINFECTANTS AND DEODORIZERS IN MEDICINE.[1]

Dr. J. C. White: I must take exception to the reader's statement with regard to our lack of control over the course of erysipelas. I would like to ask him what he considers the natural duration of life in the coccus if left untreated entirely?

Dr. Jackson: I think that is a very difficult question to answer. In case the coccus were grown in nutritive media it might live indefinitely provided the medium was renewed as exhausted.

Dr. White: I mean in the skin.

Dr. Jackson: The history of a case in practice I should say extends over three or four to ten days. I consider erysipelas a self-limited disease very similar to pneumonia.

Dr. White: I would like to state that I consider that one may get absolute control over erysipelas generally within three days by simple treatment. Of one hundred cases of ordinary facial erysipelas treated I should not expect more than three that would not yield within three days, very likely within forty-eight hours with the simplest antiseptic treatment. My custom is always to treat cases of that sort by the application during alternate hours of the day and evening of a mild solution of carbolic acid in alcohol and water as an evaporating lotion. It is only in very exceptional cases that the disease is not almost completely under control and has disappeared within forty-eight hours; but after three days it would be extraordinary if by this means every vestige of the disease had not disappeared. That is my only treatment in erysipelas for many years. I have never known it to fail. I have never given a drop of medicine internally. I feel that I have absolute control over the disease. I am speaking now of ordinary erysipelas, not of the deep-seated phlegmonous erysipelas, of course.

Dr. Jackson: I would like to ask Dr. White the strength of the solution.

Dr. White: ℞. Crystallized carbolic acid ʒss; alcohol, water, āā ℥jv.: Sig.: applied as an evaporating lotion. The part kept constantly wet one hour; the patient does nothing for an hour and the next hour applies it again.

Dr. Sinclair: I would say that Dr. White's success in treatment is extraordinary. I don't think we have had the equal of it in this disease. The disease usually goes on a week, usually spreading, and it is fortunate when, if it is on the face, where it closes the eyelids, they are opened at the end of a week in the ordinary run of things.

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[1] See page 578 of this Journal.

Dr. Jackson: While I was still writing this paper I saw reference in a German article to the use of a 5% solution of carbolic acid, claiming that the method did check the progress of erysipelas; but certainly I have known instances of failure on injection of strong solutions of carbolic acid about the edge of the erysipelas. That method, I think, had been employed in the hospitals here.

Dr. S. J. Mixter read a paper entitled

COMPOUND FRACTURE OF THE SKULL, WITH EXTENSIVE LACERATION OF THE BRAIN: RECOVERY.[2]

Dr. J. H. Wright: As to the subsequent treatment: at no time was there any very marked difference in the pulse, and the temperature remained about 100°, at one time 103°, but it subsided very quickly again. No treatment as far as medicine was concerned, except keeping him quiet. One-half grain doses of morphia subcutaneously. I found on the third day that the drainage-tube was irritating him a little. The drainage-tube was about three inches in length. I removed that, and took plenty of absorbent cotton and carefully wiped out the well in the brain, which I found was anæsthetic; he did not make any fuss on using the probe clear to the bottom of the cavity, provided I did not touch the external skin, and I took strips of iodoform gauze and packed the well, — as the granulations took place in the bottom packing it less deep. He took egg nogg, and during the twelve weeks that I had him under care he took about six bottles of brandy; his pulse would flag, but he got well under it. There was a little loss of power of the left arm, and as the doctor has remarked he would drop packages, but that has entirely disappeared. He is now just as well as he ever was. Hair has grown out over the wound, and no one could ever tell by looking at the man where the wound was. The man was thirty-eight.

Dr. Knapp: Has the field of vision been tested?

Dr. Wright: No; he has not complained of it at all; he only complained of loss of sensibility of the left arm.

Dr. Knapp: Was there loss of sensation at all in the left arm?

Dr. Wright: There was at that time, but not now, no anæsthesia. He does not complain of that arm now more than the other. He uses them both equally well. I found him cutting meat the other day at the hotel, and he handled it perfectly well.

Dr. Knapp: Judging from the situation of that injury it looks as if the motor tract ought to have been involved, but otherwise I should say the injury lay just about as Dr. Mixter says, in the centre for muscular sense, if the theory be true that the muscular sense is in the parietal lobe and not wholly in the motor tract, and just a little too high up to involve the fibres of the optic tract as they pass into the angular gyrus.

Dr. Mixter: The centre of that wound shown in the photograph does not correspond to the loss of brain substance: it was a little bit behind that. What you see there, I think, is the opening made by the trephine, which was in front in order to tie the branch of the middle meningeal artery, so that the wound made by the bolt was a little back of it.

Dr. Knapp: The opening there looks as if pretty near the fissure of Rolando.

Dr. Mixter: The incision as you see was carried in these directions, so that it exposed a very large portion of the skull. This opening that you see in the front edge was in front of the main opening.

Dr. Knapp: I supposed the chief injury must be further back, from the man's symptoms.

Dr. Mixter: I should say that in this case there must have been more than an ounce by volume of brain substance lost.

The Chair asked Dr. Mixter what substance was used as a ligature.

Dr. Mixter: Silk, as the wound was to be entirely open.

Dr. Wright: I was a little afraid of it at one time. Looking down this well the pulsation was very strong, so that I had grave doubts about the ligature holding, and expected every little while to hear that this artery had ruptured, but there was nothing of the kind. He was kept perfectly still, and it seems to me that was one reason why we did not get secondary hæmorrhage.

The Chair: There was one important point brought out in this report, and that is the free administration of morphine in injuries of the brain. When I was a medical student there was great fear about using morphine or opium in any form in injuries about the head. I think that has pretty well passed away; and so far as I know there is nothing which will take the place of opium in acute inflammation of the brain, and this case would certainly seem to carry out that idea.

The society then adjourned.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

ELEVENTH ANNUAL CONGRESS, HELD IN WASHINGTON, D. C., MAY 30, 31, AND JUNE 1, 1889.

May 30th — First Day — Morning Session.

The Association was called to order by the President, **Dr. Ethelbert Carroll Morgan**, of Washington, who delivered the

PRESIDENTIAL ADDRESS,

expressing the profound pleasure which he experienced in welcoming the association to the national capital, the home of the scientific libraries, laboratories, and museums fostered and encouraged by a liberal government. The association had wisely followed in the wake of numerous other scientific bodies which make pilgrimages to our city and exert a healthy influence toward popularizing their special fields of scientific investigation. The noble work of this association during its eleven years of existence has resulted in placing laryngology upon a substantial basis and in demonstrating its truths and benefits alike to the profession and to suffering humanity. The outlook for laryngology was never brighter than at present.

The tenth volume of the transactions is now in press, and, in addition to the papers read at the last meeting of the association, contains a table of contents of all the papers read to the association since its organization.

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[2] See page 580 in this Journal.

An important amendment to the constitution, increasing the limit of active fellowship, comes up at this meeting. The present limit is fifty, and there are at present no vacancies.

Our library now contains nearly 900 separate titles. The librarian thinks that the collection would be more accessible if in charge of the surgeon-general's office, and recommends its donation to that library.

The association has lost no members by death since the last meeting.

After some suggestions in regard to the social features of the annual meetings, the president closed by reiterating the assurance of his heartfelt appreciation of the good-will and friendship which had influenced the association in selecting him as the president of this distinguished body.

Dr. E. Carroll Morgan, of Washington, D. C., read a

REPORT OF THE REMOVAL OF A SUPERNUMERARY TONSIL. (SPECIMEN AND DRAWINGS.)

The patient, a male æt. twenty-six years, vigorous and otherwise healthy, came under observation September 7, 1886, with what he feared was malignant disease of the pharynx. The growth was discovered four years previous. It had occasioned considerable pain, especially after smoking. During the past two months the growth had rapidly increased in size and the pain had become of a shooting character, extending to the ears, larynx, and top of the head. Examination revealed a pendent tumor between the right palatine folds, near the uvula, and protruding beyond their borders half an inch. The tumor was as large as a small almond. Its color, as well as that of the pillars, was a dusky red. Slight engorgement of the cervical glands appeared to exist. The patient's mother had died of cancer of the breast, and he felt convinced that the growth was malignant. Local and general treatment having no effect, the tumor was excised and the raw surface cauterized with the galvano-cautery In ten days the wound had healed. The patient was recently examined and there has been no recurrence, now four years after the operation. The specimen removed was examined by Dr. W. M. Gray, microscopist to the Army Medical Museum, who stated that its structure was identical with that of a faucial tonsil which had undergone hypertrophy. The location and microscopic characters of this tumor, as well as the history of the patient prior and subsequent to operation, prove that this was a hypertrophied accessory or supernumerary tonsil, an exceedingly rare anomaly. A search of the literature had revealed only two other cases of a similar character, reported by Jurasz in 1885. In the first case the tumor was as large as a hen's egg and was found to spring from the lower anterior portion of the right posterior pillar by a small and short pedicle. It was removed, and found on microscopical examination to present the structure of a hypertrophied tonsil. In the second case the tumor was of the size of a hazel nut, and attached below the right tubal prominence. The microscope revealed a structure similar to that of the faucial tonsil.

Conclusions.—1, The lymphoid follicles of the soft palate and pharynx are liable to be aggregated, resembling in arrangement the faucial tonsil; 2, the condition is exceedingly rare, since, excepting the so-called "pharyngeal tonsil," the author had found but one case reported; 3, these lymphoid follicles are also liable to hypertrophy; 4, such hypertrophies probably occur oftener than is generally supposed; 5, the indications for operative interference in this condition are identical with those for the faucial tonsil.

DISCUSSION.

Dr. D. Bryson Delavan, New York, thought that possibly cases of supernumerary tonsil were not so infrequent as was commonly supposed. Pedunculated tumors of the tonsil, which on examination show a fibroid structure, are not rare, and it may be that these are degenerated supernumerary tonsils; just as the tonsil may from long-continued inflammation become the seat of fibroid change.

Dr. George W. Major, Montreal, read a paper on

THE RELATION BETWEEN FACIAL ERYSIPELAS AND ERYTHEMA ON THE ONE HAND AND INTRA-NASAL PRESSURE ON THE OTHER.

The following cases were cited as showing that facial erysipelas may be produced by nasal conditions, particularly when they are productive of pressure.

Case I. A girl aged twelve years came under observation in March, 1884, for the treatment of nasal catarrh. There was a general hypertrophic condition, with pressure of the middle turbinated body of one side against the septum. On the cheek bone of the same side there was a red patch of erythema which had existed for five months. Treatment of the nasal condition by scarification, puncture, and galvano-cautery was followed by the disappearance of the erythematous rash, and it has not returned.

Case II. A child four years of age was seen in February, 1885, suffering with facial erysipelas commencing on the bridge of the nose and extending to the cheeks. It had already lasted five days and was not disposed to yield to treatment. Both nostrils were occluded by swelling. All treatment directed to the relief of the erysipelas was suspended and attention directed to the relief of the nasal condition. In twenty-four hours the erysipelas had disappeared.

Case III. In the winter of 1884 a boy aged twelve years, the subject of recurring attacks of erysipelas, was seen with an attack involving the nose and cheeks. Nasal injections were alone used and the erysipelas disappeared in thirty-six hours.

Case IV. February, 1889, a female aged fifty-six presented herself with an erythematous patch on the left cheek. This had lasted four months. There was swelling of the left turbinated bone, which pressed against the septum. Under treatment of the nose the erythema disappeared in the course of a week.

Six other cases were alluded to in which the same connection was seen.

DISCUSSION.

Dr. J. O. Roe, of Rochester, had seen a number of cases of erythematous rash due to the nasal trouble. A case recently seen was that of a girl twenty-three years of age. There was a very red erythematous patch on the face, associated with blebs. She had been treated by various physicians without benefit. In both nares the middle turbinated bodies pressed firmly against the septum. This was relieved, and there was immediately a subsidence of the erythematous trouble. He, however, could not admit that erysipelas is due *per se* to the intra-nasal trouble. He held that erysipelas was an infectious disease due to a distinct germ. The presence of erosions in the nasal cavity would render the patient more liable to become infected.

Dr. J. N. Mackenzie, Baltimore, said: The fact of the relation between erythema of the nose and face and intra-nasal trouble had been recognized centuries ago, in the times of Willis and by Sylvius. He himself had seen many cases of this kind, but he had never seen true erysipelas due to this cause. So-called facial erysipelas seems to be comparable to an accentuation of the act of blushing — a sort of chronic blush.

Dr. William H. Daly, Pittsburg, was not a believer in the theory of intra-nasal pressure. The evils referred to pressure are really due to intra-nasal turgescence. The condition of erythema is nothing more than a condition of hyper-nutrition due to a permanently dilated and enlarged blood-supply. He believed that the term chronic facial erysipelas is a misnomer.

Dr. F. I. Knight, Boston, remarked that in these cases of erythema of the nose and face he always looked for necrosis and very often found it. Where the trouble has been relieved, the affection of the skin has disappeared.

Dr. D. Bryson Delavan, New York: I have seen several of these cases, and in three or four the erysipelatous attacks have been severe. One case, a girl of seventeen years, had recurrent attacks of severe erysipelatous swelling from the alæ of the nose, extending over the cheek. These recurred at intervals of two or three weeks. There was marked turgescence of the nasal mucous membrane. This was treated topically, and with the subsidence of the catarrhal trouble the attacks of erysipelas disappeared.

Dr. Samuel W. Langmaid, Boston, read a paper on

A CASE OF ACUTE MULTIPLE ADENITIS (SEPTIC ?), ŒDEMA OF THE LARYNX, WITH SPONTANEOUS CURE.

The reader was called to see a lady, aged forty, who had been sick for seven days under the care of an irregular practitioner. The patient was found restless, with an anxious expression, breathing with difficulty, and with a dry, croupy cough. There was no lividity of the face, but it was stated that during the preceding twenty-four hours there had been danger of strangulation. The submaxillary glands as well as those in the region of the neck were much swollen. Temperature 99°. Voice fairly loud and clear. No enlargement of the tonsils. Nothing unusual in the naso-pharynx. With the laryngoscope a tumor apparently as large as a filbert was seen occupying the posterior arytenoid space. The anterior third of the vocal cords could be seen approximated and scarcely moving during respiration. I learned that the throat had not been examined until four days after the commencement of the attack. As the patient was breathing fairly well it was decided to do nothing. If necessary, the tumor in the larynx was to be incised. A few hours later something was felt to break in the throat, and a free mucoid discharge took place. Three hours later nothing could be seen but the erect epiglottis, with muco-purulent matter welling up. There was a continued discharge, but the relief to breathing was not complete. There had been also the discharge of half an ounce of pus. The discharge continued for several days, and the patient gradually recovered.

It was thought that the case was in all probability due to diphtheria, the evidences of which had passed away when the author examined the throat. The patient stated that at the commencement of the illness the throat had been sore, and that on one side she had noticed red spots on which there had been a white covering.

Dr. William C. Glasgow, St. Louis, read a paper on

AN ŒDEMATOUS FORM OF DISEASE OF THE UPPER AIR-PASSAGES.

The paper described an œdematous form of disease which had been epidemic around St. Louis for some two years. During the existence of this affection there has been disturbance of the ordinary catarrhal throat troubles. In all cases of this disease there is found a pale, œdematous condition of the fauces. This is a solid œdema. A peculiar glistening appearance is at times very marked. In the majority of cases the soft palate is the seat of the œdema. At times the nasal mucous membrane is found in the same condition. The epiglottis and different portions of the larynx may be involved. In some cases the true cords are markedly œdematous. A swollen condition of the veins, particularly the palatine veins, is present. This sometimes causes purpura-looking spots and the mucous membrane appears mottled. In two cases these purpura-looking spots had been seen in the trachea. In one case enlarged veins were seen on the true cord. In some cases ulceration occurs. In some cases, in addition to œdema, there were patches of exudation in different parts of the throat. These, when removed, leave a bleeding surface. The symptoms of the disease and the appearance of the throat preclude the diagnosis of diphtheria. In six cases spots of mycosis were seen. Glandular enlargement of the neck is quite frequent. In two cases suppuration occurred.

The symptoms are constitutional and local. The affection occurs suddenly in persons of previous good health. There is languor and weakness and general pains throughout the body. Headache is present, usually frontal, sometimes occipital. In many cases it is simply a dull heavy feeling; in others it is an intense, violent, throbbing pain. Pain in the back, in the region of the sacrum, is a characteristic symptom. Fever is present in varying degree. In the exudative cases the disease commences with chill, followed by fever, and the temperature may reach 105°. This soon passes off, and we have a sub-febrile condition remaining, possibly with a temperature of 101°. This continues a short time and then there is a return to the normal temperature. When there is simply œdema, the temperature scarcely ever rises above 101° or 102°. This remains for only twelve hours, and during the remainder of the attack the temperature is normal. The pulse is always rapid, soft, and compressible. There has been no exception to this noted. The pulse ranges between 90 to 110 per minute. Profuse sweating is often present, especially during the night. It may be localized.

The local symptoms vary with the part of the throat involved. Sometimes they are prominent, sometimes they are wanting. Hæmorrhages are common. They are usually slight but recur frequently.

This is a constitutional disease, due, the author believes, to some change in the blood, exactly what he was unprepared to say, but probably due to micro-organisms. He thought that the disease described was nothing more than influenza, the same influenza which has been described so often, particularly by Graves. The disease has not been limited to the Mississippi Valley, for the speaker had seen cases of it from all parts of the country.

The treatment is very simple. The system must be saturated with benzoate of sodium. Under this remedy the affection subsides in a few days or hours. If left to itself it may continue for weeks and even months.

DISCUSSION.

Dr. Wm. H. Daly, Pittsburg, had seen a number of cases similar to those described. He did not consider the condition as one of œdema, but rather as a subacute inflammatory condition of the mucous membrane. There was a sufficient number of these cases which had thin and superficial diphtheritic patches in various parts of the fauces to warrant him in considering the disease of a diphtheroid character. This view was confirmed by the subsequent occurrence of glandular enlargement in nearly all the cases.

Dr. J. C. Mulhall, St. Louis, confirmed the statements of Dr. Glasgow from his own experience with the disease in St. Louis, and reported a case in which the affection had recurred three times.

Dr. S. H. Chapman, New Haven, had seen cases similar to those reported, but agreed with Dr. Daly that they were rather of a diphtheritic character. In one case the disease attacked a child of seventeen months. In the same family was a boy, nine years of age, with well-marked diphtheria. The first thing noted in the case of the child was a dense swelling of the submaxillary gland. There was great prostration and some fever, 101° to 102°. The swelling increased until it extended from the jaw to the clavicles. There was hoarseness and difficulty of breathing, which daily increased. By the seventh day it had increased so much that deep incisions were made into the gland, but no pus was found. A tube was then inserted into the larynx, and allowed to remain four days. The child, during this time, was kept alive by rectal alimentation. At the end of thirteen days the swelling began to diminish. The knife was again used and a quantity of pus discharged. The child recovered.

Dr. C. E. Sajous, Philadelphia, referred to a case of this disease which occurred in a young man living on a farm in New Jersey, twenty miles from any neighbors, and who had not been exposed to diphtheria. The throat presented small white patches not resembling the yellowish, leathery membrane seen in diphtheria. Slight œdema of the soft palate was also present. The temperature was high throughout the entire course of the disease. There was incessant pain in the back and in one limb. After trying a number of remedies, he was placed upon benzoate of sodium.

Dr. W. C. Glasgow, St. Louis, remarked that he had at first regarded these cases as diphtheritic. In these cases the membrane is adherent. It can be torn away, but a bleeding spot is left. Applications made it worse. If left to itself, it gradually grows thinner and thinner until it resembles a white, pearly patch. Diphtheritic membrane does not present such a course. The glandular enlargements always occur even where there is no exudation. He did not think that any one would assert that this œdema was diphtheria.

Dr. W. H. Daly, Pittsburg, made

SOME DISCURSIVE REMARKS BASED UPON A FEW OBSERVATIONS OF THE INTIMATE RELATIONS OF CHRONIC DISEASE OF THE UPPER AIR TRACT AND NEURASTHENIA.

His experience had led him to believe that there was an intimate relation between the conditions of the intra-nasal cavities and neurasthenia in some of its forms. This view was based upon the study of twenty-five cases. In these cases removal of the nasal trouble was followed by relief of the neurasthenic condition, no special treatment being directed to the general condition.

DISCUSSION.

Dr. J. O. Roe, Rochester, said that most of the members had seen many such cases, and they illustrate the effect that a constant local irritation will have upon the system. A constant nagging of a local irritant will sooner or later produce a depressed condition of the system.

Dr. F. A. Hinkel, Buffalo, remarked that before we could admit that a neurasthenic condition could be the result of any nasal lesion as the sole cause, a careful analysis of all the constitutional conditions would be required.

Dr. S. W. Langmaid, Boston, thought that often the nasal trouble was the result of the neurasthenia. It often happens that operative interference fails to relieve the nasal condition because the neurasthenia is not cured.

Dr. C. E. Sajous, Philadelphia, was inclined to support rather vigorously the view of Dr. Daly. In a number of cases he had observed that there were fluctuations in the nervous condition according as the local disease improved or became worse. In one case of neurasthenia associated with deviated septum, correction of the displacement was followed by improvement in the nervous condition. The operation, however, failed to be permanent, and with a return of the deviation the neurasthenic condition recurred, to again disappear with a more thorough operation upon the septum.

PRESENTATION OF INSTRUMENTS.

Dr. Samuel Johnston, Baltimore, referred to the ease with which the mouth and nose could be washed out by means of an ordinary seltzer bottle filled with soda water, a rubber tube being attached to the delivery pipe.

Dr. J. O. Roe, Rochester, exhibited œsophageal bougies made of hard rubber, with a flexible tip of soft rubber.

Also jeweller's saws in frames, suggested to overcome the objection of flexibility in the ordinary Bosworth saw.

Also a powder blower with reservoir.

Dr. E. Carroll Morgan exhibited an instrument to pull forward the velum in applying the galvano-cautery to the pharyngeal tonsil.

[*To be continued.*]

Recent Literature.

The Diseases of the Chest. By Vincent D. Harris, M.D., London, F.R.C.P. Student's Guide Series. Philadelphia: P. Blakiston, Son & Co. 1888. pp. vi. 404.

In this little work the author has fairly attained his object as stated in the preface and produced a book which is likely to be useful. Its value is much enhanced by the illustrations and diagrams, which are clear and well-chosen.

We have noted a few errors and omissions, among which are the following: The angle of Louis is persistently called the angle of Ludwig. Louis was a Frenchman in this world and will always remain such in the world of science. On page 31 the apex beat is placed two inches below and one inch to the right of the nipple; on page 86 it is added that it is found in the fifth interspace, often in the fourth in children. The first statement is misleading. The seat of the nipple is not exactly the same in different persons, and the distance of the cardiac impulse longitudinally from the nipple varies widely according to the type of the chest and the width of the intercostal spaces. Moreover, in children the apex is often found normally in the mammillary line. In the description of the sputum in disease no mention is made of Curschmann's spirals; and in a discussion of the voice sounds in health and disease the whispered voice and the valuable information which it may be made to yield are overlooked. Pulsation of the liver and the distention of the jugulars on pressing the liver upwards are not mentioned among the signs of tricuspid regurgitation.

—The government offices at Washington are fairly overflooded with retired M.D.'s, most of whom are working for a mere song, whose melody, however, is more voluminous than the clink of the scattering dollars that were wont to jingle into their coffers while they were still practising physicians. The young doctor assuredly traverses a hard road, but there are prizes to be won by him who pegs it out to the end.—*Philadelphia Record.*

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REPORT ON TUBERCULOSIS TO THE NEW YORK BOARD OF HEALTH.

Drs. Prudden, Biggs, and Loomis, pathologists to the New York City Board of Health, have now presented the statement regarding the contagiousness of tuberculosis which they were requested some time ago by the board to prepare for general circulation. In it they say that it has been proved, beyond a doubt, that the tubercle bacillus is the cause, and the only cause, of the disease; the observations of Koch having been confirmed so often and so completely that this now constitutes one of the most absolutely demonstrated facts in medicine.

The bacilli thrown off in the discharges of human beings or animals suffering from pulmonary tuberculosis do not grow outside the body, except under artificial conditions, although they may retain their vitality and virulence for long periods of time, even when thoroughly dried. When the disease is acquired, therefore, it follows that it must result from receiving into the system the living germs that have come from some other human being or animal affected with the disease. Although the meat and milk from tuberculous animals constitute actual and important sources of danger, the disease is acquired, as a rule, through its communication from man to man.

Tuberculosis is commonly produced in the lungs by breathing air in which the living germs are suspended as dust. The material which is expectorated by persons suffering from consumption often contains these germs in enormous quantities, and after drying, in one way or another, it is very apt to become pulverized and float in the air. It has been shown experimentally that dust collected from the most varied points in hospitals, asylums, prisons, private houses, etc., where consumptive patients are present, is capable of producing tuberculosis in animals when used for their inoculation. It should, however, be distinctly understood that the breath of tubercular patients, and the moist sputum removed in proper cups, are not elements of danger, but only the dried and pulverized sputum. If all discharges are destroyed at the time of exit from the body the greatest danger of communication from man to man would be removed.

It thus follows that tuberculosis is a distinctly preventable disease. The frequent occurrence of several cases of pulmonary tuberculosis in a family is to be explained, not on the supposition that the disease itself has been inherited, but that it has been produced after birth by transmission directly from some affected individual. When parents have the disease, and especially the mother, the children from the earliest moments of life are exposed to it under the most favorable conditions for its transmission. The measures which are suggested for the prevention of the spread of tuberculosis are: (1) the security of the public against tubercular meat and milk, attained by a system of rigid official inspection of cattle; (2) the dissemination among the people of the knowledge that any tubercular person may be a source of actual danger to his associates if the discharges from the lungs are not immediately destroyed or rendered harmless; (3) the careful disinfection of rooms and hospital wards that are occupied or have been occupied by phthisical patients.

This report reflects the position taken by Cornet as exhibited in the regulations of the Berlin Police Board.

THE FUNCTIONS OF THE STOMACH IN THE PHTHISICAL.

It has long been known that phthisical patients are often able to digest more food than their appetite craves. The functions of the digestive tube may be normal while the tuberculous disease is progressing; abundant feeding, in such cases, has often contributed to stay the march of the malady. It was found, moreover, that when the patient could not voluntarily take the amount of food desirable, forced feeding, according to the method of Dettweiler and Penzold in Germany, of Debove in France, was sometimes attended with wonderfully beneficial results.

Immermann, of Basle, has recently published a valuable contribution On the Functions of the Digestive Tube in the Phthisical.[1] His personal researches, he believes, have warranted the conclusion that there exists generally a manifest independence between the general condition of the patient and the state of the gastric functions. He formerly published twenty-five cases of tuberculosis in which the gastric juice had preserved its normal characters. He has lately made numerous new observations, from which it results that in the phthisical the gastric secretion generally continues normal while the disease advances, unless there be a marked febrile condition, in which event there is an impairment of the gastric functions in common with those of other organs.

In fifty-five patients, he found that fifty-one digested in less than six hours the test meal of Leube, and that their stomachs were generally empty at the end of this time, even when the hectic condition and cachexia of the subjects would lead one to expect an opposite result. One of his patients was in an extremely cachectic state, and was under forced alimentation by the stomach siphon; five days before death he proved, by examination of the contents of the stomach, that that viscus was healthy.

In forty-five patients who were in a fair state of nutrition, thirty-eight presented a normal gastric secretion, for Günsburg's reagent indicated, after twelve hours of abstinence, a proportion of hydrochloric acid equal to one or two per cent.; there was, besides, neither lactic nor butyric acid. In several phthisical patients where the gastric symptoms were very marked (dyspepsia of the tuberculous), he also noted a healthy condition of the gastric mucosa. In a number of patients whose general state was one of great prostration, he found at times a high proportion of hydrochloric acid.

He has also observed, on estimating the time necessary to obtain, in a stove, the digestion of albuminous disks of a millimetre in thickness in the liquid siphoned from the stomach in the morning, that this organ performed its functions well, as far as pepsin was concerned; and whenever Günsburg's reagent revealed a normal quantity of hydrochloric acid the digestion of the albuminoid disks was effected generally in the space of an hour.

The conclusion to draw from these experiments is one of real importance from the point of view of medical practice, as they demonstrate the integrity of the functions of the stomach, even in cases where there may be repugnance to taking food, and they warrant us in expecting favorable results from forced feeding in the great majority of cases, by reason of the (generally) purely nervous nature of dyspepsia in the tuberculous.

MEDICAL STATISTICS OF THE ELEVENTH CENSUS.

It is with great pleasure that we publish this week a circular letter from the superintendent of the eleventh census, and ask the hearty co-operation with him of all the physicians in the State to secure full and accurate returns of the deaths for the census year from June 1, 1889, to May 31, 1890.

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[1] Congress of Internal Medicine, Wiesbaden, April 18, 1889.

It is an unfortunate fact that there are very few States in the country where there is any registration of vital statistics of sufficient accuracy to be depended upon except for approximate estimates of the public health; and in many States there is almost, if not quite, none at all, at least in large portions of the State. It is also true that the vital statistics collected and collated for the United States census are far from complete. But physicians can remedy its defects to a large extent if they will be sufficiently interested to do so, and the labor devolving upon them to that end is not great. Moreover, in all countries, even in those where the mortality of the population has become the basis of calculations for life-insurance companies, health-officers, physicians, and the general public, models of exactness, it has been only by degrees that a system almost perfect has been built up. Such a system we must in time have here, and it is by physicians chiefly that the educating work must be done.

In the matter of climatology alone, in ascertaining what diseases prevail in various places and in what locality there is an immunity from particular diseases, in a word, how to select suitable health-resorts for our patients suffering from maladies demanding a great variety of conditions of climate, the trouble asked of physicians by the superintendent of the census will be amply repaid. Indeed, the results as to prevalence of disease in various parts of the United States, either for themselves or as a study in the science of public health, as drawn from the returns of the tenth census for his London address by Dr. Billings, are alone doubly worth the labor expended upon the original record by physicians; and double the pains on their part for the next census will enhance its value to more than a corresponding degree. The fact that its compilation is to be in the hands of Dr. Billings will insure the best possible utilization of the facts collected.

MEDICAL NOTES.

— A movement is on foot in New Orleans to secure a proper system of underground sewerage in place of the surface drainage so long in use.

— The friends of Dr. Richard J. Levis propose to perpetually endow a free bed in the Philadelphia Polyclinic Hospital, in recognition of his professional eminence.

— Dr. James F. Foulkes died at Oakland, California, May 23rd. During the late war he was surgeon of Pettigrew's Confederate brigade, and afterwards surgeon-in-chief of Winder Hospital, Richmond.

— The smell that arises in places from the scene of the great calamity in Pennsylvania is stated not to proceed from the bodies of the dead, except in part, though it is a natural mistake to ascribe it to that source. One correspondent, who was on the spot immediately after the great Mill River calamity in the Western part of Massachusetts some time since, the most frightful occurrence of the kind in this country up to the present calamity, says that the air of the valley there was likewise filled with a disgusting stench, which was found to proceed from the decaying vegetable matter, myriads of trees and shrubs having been killed and crushed by the force of the rushing water and floating debris.

— Druggists in no-license towns in Connecticut must sell only on a prescription signed by a reputable physician living in the State and known to the druggist; the prescription must give the time and place in which, and the name and residence of the person for whom it is written, must specify that the liquor is for medicinal purposes, must be filled within three days of its issue, and must be filed by the druggist in a book to be open for inspection. Heavy penalties are provided for a violation of the law by physicians or druggists, and also for the individual who should obtain such a prescription on false pretences.

— Some months ago Coroner Mahan, of Wilkes Barre, Pa., held an inquest over the body of a lady who died suddenly, and Dr. P. J. Higgins, who saw the lady during the latter stage of her illness, was summoned to testify as an expert witness. The doctor was asked these two questions: "Please state in what condition you found the lady at the time you first visited her and the symptoms she presented? Did you think the medicine administered to her injured her?" The doctor refused to answer these questions, on the ground that he would receive no compensation for testifying as an expert, desiring to make of it a test case. The case was taken into court and Judge Rice has rendered a decision on a rule to quash the indictment. The judge says the doctor was bound to answer both questions He was better able to testify than a non-professional man, but that furnishes no reason for withholding his knowledge of the facts observed by him, upon the ground that it was his property, which could not be taken from him without compensation. A physician is not compelled to attend a *post mortem* or a man mortally wounded, but when he does he cannot withhold his knowledge in a judicial investigation. It is a duty which he owes to the public, although there is no compensation attached to it. The remedy, in order to secure compensation, must be sought before the legislature.

BOSTON.

— The proposed medical bill, which we printed in full last week, has failed of passage by the Massachusetts legislature, having been finally refused a third reading in the Senate by a vote of five to eighteen, after passing the lower branch.

— Dr. Charles Harrington, of the Harvard Medical School, has reported to the Boston school committee upon the condition of the Prince schoolhouse, as several of the pupils of this school lately had diphtheria. Dr. Harrington anticipated that portion of his report on the general ventilation of the Boston schools which applies to this building. He finds the schoolhouse both overcrowded and poorly ventilated. The average cubic capacity per pupil is only 170 feet, against a normal requirement of from 250 to 500 feet. The average amount of carbonic acid was found to be 15.58 parts per 10,000, against 7 parts which is considered permissible. The report of Dr. Harrington, which is to the same effect as others which have been made, has been published. What seems to be now needed in the matter by the school committee is to do rather than to know.

— The portrait of Dr. D. Humphreys Storer, intended for presentation to the Medical Library Association, through the courtesy of the artist, Mr. Vinton, has been placed in the gallery of the St. Botolph Club, 2 Newbury street, for exhibition from June 10 to 15, 11 A.M. to 3 P.M. All interested in seeing the picture are cordially invited.

NEW YORK.

— A new diploma mill has come to light in Chicago. It is known as the Chicago College of Science, and one of its medical "graduates" has offered his diploma for registration in New York.

— The Congress of Medical Jurisprudence was in session at Steinway Hall June 5, 6, and 7, with Clark Bell, Esq., presiding. Among the papers read were "Eccentricities of Insanity," by ex-Judge Noah Davis, of New York; "The Criminal Insane," by Dr. Samuel W. Smith, State Commissioner in Lunacy; "Medical Expertism," by Dr. Simeon T. Clark, of Niagara University; "Medical Expertism from its Legal and Medical Standpoint," by Dr. Le Monnier, of New Orleans; "Live Birth in its Medico-Legal Relations," by Dr. John J. Reese, of Philadelphia; and "Volitional Insanity," by Austin Abbott, Esq., of New York.

— The late Hon. S. B. Chittenden left in his will $5,000 for the Brooklyn Eye and Ear Hospital.

— The free baths of the city, so widely appreciated by the public, are to be opened June 15. Three more baths are added this year, making the whole number fifteen.

Miscellany.

A HOSPITAL FOR DARTMOUTH.

Mr. Hiram Hitchcock, of the Fifth Avenue Hotel has, according to the New York *Times*, given to Dartmouth College a hospital, which is to be attached to the Medical School of that institution. The plans for the new building are still in the hands of the architect, but it is expected that the structure will be completed within a year. The ground has been purchased in Hanover and everything is now in readiness to proceed with the work as soon as the plans shall have been approved. Mr. Hitchcock, who is a Dartmouth alumnus, was led to make this gift by an appreciation of its necessity and by a desire to establish a fitting memorial to his late wife, the hospital being given and accepted as such. It will be the handsomest and best-equipped institution of the kind in northern New England.

BOOK INFECTION.

In many of the European cities extensive investigations are making to prove or disprove the infectiousness of books handled by the sick, such as must of necessity frequently occur in large circulating libraries. The editor of the *Christiania* (Norway) *Sanitary Journal*, in commenting on the subject, remarks that it is the universal pastime of invalids and convalescents to read or look over books, which, if not procurable at home, are brought from some library. Even children are fond of looking at picture-books, and the editor relates the following personal experience: "In 1846 an eight-year old brother of my wife was taken down with scarlet fever and died. During his illness he frequently amused himself by looking over a large picture-book. This, together with several other of his useful playthings, was packed away in a trunk after his death. Twenty-six years afterward, in 1872, a sister-in-law of mine journeyed across the channel to England, where I was then residing, and with her came the chest and the picture-book. On the second day the chest was opened, and the book presented to my two-year-old son. Within the next two weeks the little fellow was taken down with scarlet fever. The doctors who were called in consultation wondered how the disease was contracted, as there had been no scarlet fever in the town for years. The circumstances of the book were called to mind, and the indications were clearly that the twenty-six-year-old book had retained the poison and communicated it to the child." The process of disinfection now in use in Denmark and Norway, in many of the circulating libraries and bookstores, is a good one, and it is claimed to disinfect the books without damaging them in the least. It consists in placing the books, fully opened out, in a suitable compartment, and subjecting them to dry, hot steam at a temperature of over 100° C. for several hours.—*The Analyst*, May 30, 1889.

A CONTEMPORANEOUS REPORT OF WASHINGTON'S LAST ILLNESS.

An esteemed correspondent sends us the following letter, published in an Alexandria paper of December, 1799: —

Presuming that some account of the late illness and death of General Washington will be generally interesting, and particularly so to the professors and practitioners of medicine throughout America, we request you to publish the following statement.

Some time in the night of Friday the 13th inst., having been exposed to a rain on the preceding day, General Washington was attacked with an inflammatory affection of the upper part of the windpipe, called cynanche trachealis. The disease commenced with a violent ague, accompanied with some pain in the upper and fore part of the throat, a sense of stricture in the same part, a cough, and a difficult rather than a painful deglutition, which were soon succeeded by fever and a quick and laboring respiration. The necessity of blood-letting suggesting itself to the General, he procured a bleeder from the neighborhood, who took from his arm in the night from twelve to fourteen ounces of blood. He would not by any means be prevailed upon by the family to send for the attending physician till the following morning, who arrived at Mt. Vernon at about 11 o'clock on Saturday. Discovering the case to be highly alarming, and foreseeing the fatal tendency of the disease, two consulting physicians were immediately sent for, who arrived, one at half after 3, the other at 4 o'clock in the afternoon. In the interim were employed two copious bleedings; a blister was applied to the part affected; two moderate doses of calomel were given; and an injection was administered, which operated on the lower intestines, but all without any perceptible advantage, the respiration becoming still more difficult and distressing. Upon the arrival of the consulting physicians, there being as yet no signs of the accumulation in the bronchial vessels of the lungs, it was decided to try the result of another bleeding, when about thirty-two ounces of blood were drawn without the smallest apparent alleviation of the disease. Vapors of vinegar and water were frequently inhaled; ten grains of calomel were given, succeeded by repeated doses of emetic tartar, amounting in all to five or six grains, with no better than a copious discharge from the bowels. The powers of life seemed now manifestly yielding to the force of the disorder. Blisters were applied to the extremities, together with a cataplasm of bran and vinegar to the throat. Speaking, which was painful from the beginning, now became almost impracticable, respiration grew more and more contracted and imperfect till half after eleven on Saturday night, when, retaining the full possession of his intellect, he expired without a struggle. He was fully impressed at the beginning of his complaint, as well as through every succeeding stage of it, that its conclusion would be mortal, submitting to the severe exertions made for his recovery rather as a duty than from any expectation of their efficacy. He considered the operations of death upon his system as coeval with the disease, and several hours before his decease, after repeated efforts to be understood, succeeded in expressing a desire that he might be permitted to die without interruption. During the short period of his illness he economized in the arrangement of such few concerns as required his attention with the utmost serenity, and anticipated his approaching dissolution with every demonstration of that equanimity for which his whole life has been so uniformly and singularly conspicuous.

James Craik, attending physician.
Elisha C. Dick, consulting do.

The signature of Dr. Gustavus Brown of Port Tobacco, who attended as consulting physician, on account of the remoteness of his residence from the place, has not been procured to the foregoing statement.

CAMPHORATED NAPHTHOL IN ITS APPLICATION TO THE TREATMENT OF TUBERCULOUS AFFECTIONS.

At a recent meeting of the Société de Thérapeutique, Fernet read a paper in which he called attention to the value of camphorated naphthol as an antiseptic application to tuberculous ulcerations. This substance is a mixture of one part of naphthol with two parts of camphor; it is a liquid of syrupy consistence, and may be applied by means of a camel's-hair pencil.

This preparation of naphthol appears to possess energetic antiseptic properties, and has been used to advantage, not only to modify tuberculous ulcers on mucous membranes or on the integument, but also in furuncular diseases and in diphtheria. Fernet reports a case of scrofulous lupus of the tongue and throat, in which the immediate effects of camphorated naphthol were most gratifying. The patient, a young girl of seventeen years of age, entered the St. Louis Hospital for a tuberculous ulceration of the base of the tongue, resembling an almond in form and size. This was treated by deep cauterizations with the thermo-cautery, repeated once a week for about two months, with, however, only temporary benefit. The ulceration continued to spread along the median line of the tongue till it reached the point; the posterior half of the tongue was tumefied and hard, and was manifestly the seat of a tuberculous infiltration. The patient had grown very thin, and had night sweats. Repeated applications of a ten per cent. solution of lactic acid failed in any way to arrest the disease. The tongue continued to swell till it almost filled the cavity of the mouth; it was hard to the touch throughout almost its entire extent; some new ulcerations had formed on its under surface. The margin of the velum pendulum was also ulcerated, the uvula destroyed, the tonsils were invaded; deglutition had become very difficult.

Under these circumstances, Fernet began the treatment with the camphorated naphthol. Every day an application was made to the whole extent of the lingual ulcerations, and to the diseased parts of the palate and isthmus; this application being painful, it was found necessary to precede it by a free swabbing with a solution of cocaine. After a month and a half of treatment, a complete transformation was effected; the hard tumefaction of the sides and base of the tongue had completely disappeared, and the organ had shrunk to nearly its natural size; the velum pendulum and the tonsils presented a nearly healthy appearance. There, however, still remained a small ulcer in the centre of the tongue, surrounded by a narrow zone of induration which remained rebellious to treatment. The general condition of the patient was greatly ameliorated.

In commenting on this case, the writer expressed the opinion that in a certain number of cases tuberculosis begins as a local peripheral disease, followed by a secondary general infection. Hence the importance which is attached to remedial agents capable of curing the local primary lesion.

At the same meeting Constantin Paul referred to a case of his own which bore a resemblance to the one above reported; the patient was affected with tuberculosis of the end of the tongue; camphorated naphthol applied every day for a fortnight had produced a notable amelioration.

Correspondence.

MORTALITY AND VITAL STATISTICS FOR THE ELEVENTH CENSUS.

Washington, D. C., May 1, 1889.

To the Medical Profession: — The various medical associations and the medical profession will be glad to learn that Dr. John S. Billings, surgeon U. S. army, has consented to take charge of the Report on the Mortality and Vital Statistics of the United States as returned by the Eleventh Census.

As the United States has no system of registration of vital statistics, such as is relied upon by other civilized nations for the purpose of ascertaining the actual movement of population, our census affords the only opportunity of obtaining near an approximate estimate of the birth and death rates of much the larger part of the country, which is entirely unprovided with any satisfactory system of State and municipal registration.

In view of this, the Census Office, during the month of May this year, will issue to the medical profession throughout the country "Physician's Registers" for the purpose of obtaining more accurate returns of deaths than it is possible for the enumerators to make. It is earnestly hoped that physicians in every part of the country will co-operate with the Census Office in this important work. The record should be kept from June 1, 1889, to May 31, 1890. Nearly 26,000 of these registration books were filled up and returned to the office in 1880, and nearly all of them used for statistical purposes. It is hoped that double this number will be obtained for the Eleventh Census.

Physicians not receiving Registers can obtain them by sending their names and addresses to the Census Office, and, with the Register, an official envelope which requires no stamp will be provided for their return to Washington.

If all medical and surgical practitioners throughout the country will lend their aid, the mortality and vital statistics of the Eleventh Census will be more comprehensive and complete than they have ever been. Every physician should take a personal pride in having this report as full and accurate as it is possible to make it.

It is hereby promised that all information obtained through this source shall be held strictly confidential.

Robert G. Porter,
Superintendent of Census.

TREATMENT OF ABORTIONS.

202 Main Street,
Charlestown, May 24, 1889.

Mr. Editor, — Upon reading the report of the discussion of Dr. J. P. Reynolds' paper on "The Treatment of Abortions," before the Obstetrical Society of Boston, in the Journal for May 23, I was surprised that no mention was made of a method of treatment of unavoidable abortion which is quite popular in England and on the Continent, and which according to my observation and experience is most satisfactory in its results. This method consists of the injection of two quarts or less of carbolized water, as hot as bearable, between the ovum and the uterine wall. This is usually performed by means of the "Boseman Catheter," an instrument which insures the escape of all the injected fluid through a tube which encases the one through which the fluid enters the uterus. In fact, the instrument is an ingeniously constructed double tube, one within the other. After the injection the patient is kept quiet in bed, and ergot is administered or not, according to the opinion or judgment of the physician. This injection is repeated at intervals of three or four hours until the ovum is ejected from the uterus.

The effect of this procedure is to diminish the hæmorrhage to a minimum, through the hæmostatic action of the hot water and to set up an energetic contraction of the uterus, with the consequent expulsion of its contents. According to my observation the ovum is expelled sooner, and less hæmorrhage occurs, than when plugging or the colpeurynter is used.

This method has been invariably pursued for several years at the Rotunda Hospital, Dublin, in both in-patient and out-patient practice, with most gratifying success.

The advantages of this method over plugging and the colpeurynter are: 1, the hot water has a direct hæmostatic action; 2, it is more antiseptic than the other methods can be; 3, it is more quickly and invariably effective. It is extremely rare that resort to ovum forceps, or other methods of forcibly emptying the uterus, is necessary after employing this method.

Yours truly,
W. D. Holmes, M.D.

LETTER FROM PARIS.

FROM OUR SPECIAL CORRESPONDENT.

IMPALUDISM — INFECTIOUS PERIODS OF MEASLES AND DIPHTHERIA — SUPRAPUBIC LITHOTOMY.

Paris, 17th May, 1889.

In France the fair sex have been rather slow in taking to medicine as a profession, for till now there have not been more than a dozen French doctresses in practice. Mademoiselle Marie Pierre has just taken her degree of doctor of medicine of the Faculty of Paris after having passed a most brilliant examination. The title of her thesis was, "Contribution to the Study of Impaludism." The authoress defines impaludism to be a predisposition to intermittent fevers produced by the emanations and miasmata of paludial countries. It is well known that this predisposition is not in the same degree for everybody. If the paludial plague strikes the majority of the inhabitants of marshy countries, it constantly spares certain subjects while it affects certain others. This mode of selection has long been a mystery to the profession, but Mademoiselle Marie Pierre believes she has found the clue to it. According to our author, it is not chance, aided or not by microbes, which decides the evolution of intermittent fevers; "it is the law of the non-superposition of diatheses." As one diathesis generally excludes another, and as impaludism is considered by the author to be a diathesis, intermittent fever, being a manifestation, does not show itself in lymphatic, scrofulous, syphilitic or other diathetic subjects. This is perhaps only a hypothesis, but it certainly is an ingenious one, as may be seen by the following summary of the author's conclusions: "Is it necessary to add impaludism to the group of diatheses already recognized? This would perhaps be unnecessary for every disease well known, seriously studied, but this is necessary as regards impaludism, for two reasons: 1, because it is more diffused than is believed; 2, because it has no pathognomonic symptoms. The paludial malady does not require special climatic conditions or appropriate soils for its development. Although more frequent in spring and in autumn, it may break out in all seasons. It may rage in countries absolutely free from marshy surfaces, in countries artificially raised, in waste lands, in Algeria, on certain table-lands in Spain, etc. Deep marshes, invisible, may, if the soil which covers them be turned up, become an occasional cause of paludial accidents. At Paris, where intermittent fevers were formerly unknown, they have made their appearance and are now acclimatized. In 1811 an epidemic broke out in the quarters of the Temple, La Villette, and Pantin, when the Canal Saint Martin was dug. In 1840 a similar epidemic was observed while the fortifications of Paris were being constructed. Each opening of a new street or a boulevard, each construction of an edifice, each establishment of a sewer or the laying of gas pipes underground, may give rise to cases of impaludism. The quantity of stagnant water necessary to produce intermittent fever need not be considerable. A plant in an apartment, too much watered, may become the source of paludial accidents. In all seasons and in all places one may be struck with impaludism. The other diatheses, when well marked, have evident lesions, whereas impaludism simulates all maladies, and even in the organism which it has affected as profoundly as possible, it still remains an obscure diathesis." Although Mademoiselle Marie Pierre's thesis may not prove acceptable to the profession it was highly approved of by the board of examiners. The ideas it contains are at least original, and are susceptible of useful applications.

The notions prevalent in the profession respecting the management and the modes of infection of infectious diseases are undergoing great modifications. In a note recently read at the Société Médicale des Hôpitaux, Dr. Sevestre, physician to the Hospice des Infants Assistés at Paris, gave the results of his experience respecting measles and diphtheria. Dr. Sevestre stated that he had no doubt that measles is infectious from the very first appearance of any symptoms, three days before any eruption can be seen, and of this he gave some clear cases. As to the length of the infective period he is not quite so certain, but said he has only seen one case which proved infective on the fifth day after the beginning of the eruption, and none which were infective later. His usual practice is to give the children a bath containing corrosive sublimate on the seventh or eighth day after the beginning of the rash, and to discharge them from the hospital, with no bad results. According to the author, the infections germ first appears in the bronchi and is transmitted by the expired air; it may travel ten feet, but not as much as thirty feet, from the child's bed; it dies very quickly in the air. A room which has been occupied by children with measles becomes non-infectious two or three hours after they have left it. It is very seldom carried by a third person or by anything that has been in contact with the patient. Dr. Richard, who joined in the discussion, recalled that the rôle of the hygienist consists, on the one hand, to protect the healthy subjects, on the other hand to preserve the patient against secondary infections: he would therefore recommend individual isolation in measles. He stated that experience has proved that for measles it is delusive and useless to wish to protect healthy subjects, but that rubeolic patients must be preserved from superadded infections, and that with as much more care that they are more difficult to preserve than parturient women. For them, the germs the most to be dreaded are broncho-pneumonia and tuberculosis. Dr. Richard concluded by proposing that individual isolation should be effected in cells *ad hoc* easy to disinfect as also the furniture in them. As regards diphtheria, Dr. Sevestre observed that in this affection, though infection is sometimes carried by the air, it is more often by a third person or some inanimate intermediary object. To give an idea of the long vitality of the germs of diphtheria, Dr. Sevestre related a remarkable case in which, after the death of a woman from this malady, some articles she had used in her last illness were put away in a drawer and not touched for two years. After these two years her daughters opened the drawer and cleared it out, and a few days later one of them got diphtheria. Having satisfied himself that no other cause of infection could be found, Dr. Sevestre came to the conclusion that this was a genuine case of diphtherial infection from the contents of the drawer.

At a recent meeting of the Société de Chirurgie Dr. Pozzi exhibited a stone eight centimetres long by five centimetres broad, which he had removed by hypogastric lithotomy in a man eighty years of age. He practised the complete suture of the bladder in a double row, the first with catgut, the second with silk thread at one centimetre from the first. He effected pre-vesical drainage, and caused the urine to be drawn off with a catheter so as not to leave one permanently in the patient's bladder. This method was followed by success.

At a subsequent meeting, Dr. Schwartz read a note on the advantages of immediate suture of the bladder after hypogastric lithotomy. He said that last year he had occasion to practise the immediate suture of the bladder to remedy a hypogastric lithotomy he had performed with the object of extracting a stone developed, according to the account of the patient, around a foreign body. The patient was forty-two years of age. The bladder incised, he did not find any appreciable cystitis and conceived the project of immediately suturing it. Two rows of sutures with carbolized silk thread were disposed on the vesical wound. A drainage was established in the pre-vesical cavity and a catheter placed permanently in the bladder. The cure was very easily obtained, with the exception of a small fistula which was spontaneously obliterated after a short time, thanks to appropriate care. Dr. Schwartz therefore believes that the immediate suture of the bladder after hypogastric lithotomy is altogether recommendable in the cases where the bladder is healthy and where the urine may be only slightly altered.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 1, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption	Diarrhœal Diseases.	Diph. and Croup.	Scarlet Fever.
New York	1,571,558	629	249	19.20	14.08	3.20	7.20	4.48
Philadelphia	1,040,245	393	144	17.42	14.04	4.91	2.86	1.82
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	335	145	18.85	12.18	2.90	9.28	2.03
Baltimore	500,343	136	39	8.14	13.33	.74	2.22	—
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	164	50	14.03	9.76	1.83	6.09	1.22
New Orleans	250,000	169	70	27.73	4.13	20.06	.59	—
Cincinnati	225,000	106	—	12.22	15.98	3.76	6.58	—
Washington	225,000	84	23	16.66	16.66	1.19	1.19	1.19
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	14	6	28.56	21.42	14.28	—	7.14
Charleston	60,145	43	22	18.64	16.31	11.65	—	2.33
Portland	40,000	12	2	16.66	—	—	—	—
Worcester	78,292	27	11	3.70	3.70	3.70	—	—
Lowell	71,518	25	6	16.00	12.00	4.00	4.00	—
Cambridge	65,552	19	6	26.30	15.78	—	21.04	5.26
Fall River	62,647	22	10	18.20	18.20	9.10	4.55	4.55
Lynn	53,334	15	5	6.66	26.64	—	6.66	—
Springfield	40,731	8	1	12.50	12.50	—	12.50	—
Lawrence	40,619	23	7	13.05	17.40	—	4.35	4.35
New Bedford	37,253	10	2	40.00	—	10.00	20.00	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	9	1	33.33	11.11	—	22.22	—
Salem	29,011	16	5	6.25	18.75	—	6.25	—
Brockton	28,813	9	0	11.11	—	—	—	—
Chelsea	28,167	7	0	28.56	28.56	—	28.56	—
Haverhill	26,058	8	1	—	50.00	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	3	0	—	—	—	—	—
Newton	21,553	3	1	33.33	33.33	14.28	33.33	—
Malden	19,774	4	0	25.00	50.00	—	25.00	—
Fitchburg	17,534	4	0	—	25.00	—	—	—
Waltham	17,332	7	2	14.28	—	14.28	—	—
Newburyport	13,875	5	0	—	20.00	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	—	—	—	—	—	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2309; under five years of age 908; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 405, consumption 304, acute lung diseases 282, diphtheria and croup 128, diarrhœal diseases 105, scarlet fever 49, whooping-cough 34, typhoid fever 29, measles 24, cerebro-spinal meningitis 12, malarial fever 10, erysipelas 7, puerperal fever 7. From whooping-cough, New York 15, Brooklyn 7, Philadelphia 6, Boston 2, Baltimore, Cincinnati, Washington, and Charleston 1 each. From typhoid fever, Philadelphia 13, Boston and Washington 3 each. From measles, Philadelphia 8, Brooklyn 7, New York 5, New Orleans 2, Boston and Charleston 1 each From cerebro-spinal meningitis, Washington 4, New York 2, Philadelphia, Boston, Nashville, Lawrence, Somerville, and Brockton 1 each. From malarial fever, New Orleans 5, Baltimore 3, New York 2. From erysipelas, Philadelphia 2, New York, Brooklyn, Baltimore, Charleston, and Lowell 1 each. From puerperal fever, Washington and New Orleans 3 each, Boston 1.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending May 18th, the death-rate was 17.2. Deaths reported 3144; infants under one year 728. Acute diseases of the respiratory organs (London) 217, measles 138, whooping-cough 100, diarrhœa 45, diphtheria 37, scarlet fever 35, fever 26.

The death-rates ranged from 11.1 in Leicester to 38.1 in Preston; Birmingham 18.6; Bradford 20.0; Hull 18.6; Leeds 19.3, Liverpool 16.0; London 14.8; Manchester 28.2; Nottingham 14.5; Sheffield 16.7; Sunderland 19.8.

In Edinburgh 17.2; Glasgow 25.0; Dublin 25.1.

The meteorological record for the week ending June 1, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, June 1, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in Inches.
May 26	30.06	49.0	50.0	44.0	96	77		78.0	N. E.	S.		20	7		C.	F.			.00
" 27	29.95	51.0	54.0	45.0	72	93		91.0	E.	S. E.		5	15		R.	R.		8.40	.59
" 28	29.79	58.0	73.0	49.0	82	69		90.0	S. W.	S. W.		12	7		R.	O.		15.30	2.24
" 29	30.18	54.0	68.0	42.0	67	64		78.0	W.	S. W.			13		F.	O.			.00
" 30	30.24	62.0	73.0	49.0	82	86		76.0	N.	N. W.		12			F.	O.		0.15	.04
" 31	30.20	73.0	80.0	64.0	64	83		62.0	W.	N. W.		14	12		C.	C.			.00
June 1	30.09	72.0	77.0	58.0	78	81		70.0	N. W.	N. W.		21	16		C.	F.		1.20	.41
Means for the Week	30.07																		

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JUNE 1, 1889, TO JUNE 7, 1889.

The resignation of Captain **George F. Wilson**, Assistant Surgeon U. S. Army, was accepted by the President, and took effect May 31, 1889.

By direction of the Acting Secretary of War, Captain **James C. Merrill**, Assistant Surgeon, is detailed as a member of the Board of Medical Officers appointed by par. 9, S. O. 108, May 10, 1889, from this office, to meet at the U. S. Mil. Academy, West Point, N. Y., on June 1, 1889, or as soon thereafter as necessary, to examine candidates for admission to the academy, etc., vice Captain Fred. C. Ainsworth, Assistant Surgeon, hereby relieved as a member of the board. Par. 4, S. O. 127, A. G. O., June 3, 1889.

The leave of absence for seven days granted Captain **W. O. Owen, Jr.**, Assistant Surgeon, in orders No. 48, c. s. Fort Gibson, I. T., is extended twenty-three days. Par. 2, S. O. 67, Hdqrs. Dept. of the Missouri, Fort Leavenworth, Kansas, May 29, 1889.

By direction of the Secretary of War, the leave of absence granted First Lieutenant **Jefferson R. Kean**, Assistant Surgeon, in S. O. No. 48, May 13, 1889, Department of the Platte, is extended fifteen days. Par. 3, S. O. 129, A. G. O., June 5, 1889.

Wales, Philip G., appointed Assistant Surgeon, with rank of First Lieutenant, from June 7, 1889.

DeWitt, Theodore F., appointed Assistant Surgeon, with rank of First Lieutenant, from June 7, 1889.

Ten Eyck, Benjamin L., appointed Assistant Surgeon, with rank of First Lieutenant, from June 7, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 8, 1889.

Page, J. J., Assistant Surgeon (Retired), granted one year's leave of absence to leave the United States.

Bailey, Thos. B., appointed an Assistant Surgeon in the Navy, May 23, 1889.

Barber, George H., appointed an Assistant Surgeon in the Navy, May 23, 1889.

Rothganger, George, appointed an Assistant Surgeon in the Navy, May 24, 1889.

Smith, George Tucker, appointed an Assistant Surgeon in the Navy, June 3, 1889.

Bailey, T. B., Assistant Surgeon, ordered to the Receiving ship "Dale" at Washington, D. C.

Barber, George H., Assistant Surgeon, ordered to the Receiving-ship "Vermont" at New York.

Ogden, F. N., Assistant Surgeon, ordered to examination preliminary to promotion.

Bryant, P. H., Assistant Surgeon, detached from Naval Hospital, Chelsea, and granted a month's leave of absence.

Mayo, H. O., Med. Director (Retired), granted one year's leave of absence, with permission to leave the United States.

SOCIETY NOTICE.

Annual Meeting of the American Climatological Association. — The sixth annual meeting of the American Climatological Association will be held in the Boston Medical Library Association Hall, No. 19 Boylston Place, Boston, Monday and Tuesday, June 24th and 25th, 1889.

J. B. Walker, M.D., *Secretary.*

NEW YORK POST-GRADUATE MEDICAL SCHOOL.

At the Spring meeting of the Board of Directors of the New York Post-Graduate Medical School and Hospital the following additions were made to the Faculty: — **J. H. Ripley**, M.D., Professor of Diseases of Children; **R. W. Taylor**, M.D., Professor of Diseases of the Skin; **J. B. Emerson**, M.D., Professor of Diseases of the Eye and Ear; **Frederic Bagoe**, Ph.B., Professor of Pharmacology.

AWARD OF WARREN TRIENNIAL PRIZE.

The Board of Physicians and Surgeons of the Massachusetts General Hospital have awarded the Warren Triennial Prize of $580 to Dr. H. A. Hare and Dr. Edward Martin, of Philadelphia, for their essay entitled, "Practical Studies on the Nervous and Mechanical Government of Respiration, designed to determine the Best Methods of treating Disorders of the same, more particularly those produced by Traumatism to the Phrenic Nerves or the Inhalation of Gases."

BOOKS AND PAMPHLETS RECEIVED.

Die Syphilis des Herzens. Von Dr. T. Lang. Wien, 1889. Braumüller.

The American Armamentarium Chirurgicum. George Tiemann & Co., New York.

Warner's Therapeutic Reference Book. Philadelphia: William R. Warner & Co. 1889.

Morrow's Atlas of Venereal and Skin Diseases. No. 13. William Wood & Co., New York.

The Essentials of Physical Diagnosis of the Chest and Abdomen. By J. Wallace Anderson, M.D. New York: McMillan & Co. 1889.

Transactions of the Gynecological Society of Boston. New Series vol. i. Boston: Cupples and Hurd. 1889.

Lectures on Bright's Disease. By Robert Saundby, M.D. Edin., F.R.C.P. Lond. With 50 Illustrations. New York: C. B. Treat. 1889.

Second Biennial Report of the North Carolina Board of Health to the General Assembly of North Carolina. Session of 1889. Raleigh 1889.

Diphtheria: its Nature and Treatment, by C. E. Billington, M.D.; and Intubation in Croup, and other Acute and Chronic Forms of Stenosis of the Larynx. By Joseph O'Dwyer, M.D. New York: William Wood & Co.

Electricity, and the Methods of its Employment in Removing Superfluous Hairs and other Facial Blemishes. By Plym. S. Hayes, A.M., M.D., late Professor of Chemistry and Toxicology, Woman's Medical College. Chicago: W. T. Keener. 1889.

Examination of Water for Sanitary and Technical Purposes. By Henry Leffman, M.D., Ph.D., Professor of Chemistry in the Woman's Medical College of Pennsylvania, etc., and William Beam, M.D., Demonstrator of Chemistry in the Pennsylvania College of Dental Surgery. Philadelphia: P. Blakiston, Son & Co. 1889.

Elements of Histology. By E. Klein, M.D., F.R.S., Lecturer on General Anatomy and Physiology in the Medical School of St. Bartholomew's Hospital, London. Illustrated with 191 engravings. New and enlarged Edition. Philadelphia: Lea Brothers & Co. (Manuals for Students of Medicine.)

Address.

PREVENTIVE MEDICINE IN MASSACHUSETTS.[1]

BY H. P. WALCOTT, M.D.,
Chairman Massachusetts State Board of Health.

THE question of the best way of protecting our milk-supplies from several of the communicable diseases is not only a very pressing one, but one very difficult to answer. Milk is a substance peculiarly favorable to the growth of many micro-organisms; a water polluted with specific bacteria, even when used in the limited way customary in cleansing the ordinary receptacles of milk, is still capable of infecting a relatively unlimited quantity of the latter.

There is certainly no substance, used so generally for food as milk, which is prepared for the market with so slight regard for scientific purity, not to mention ordinary cleanliness, as is the case with this. The cow herself is often improperly cared for, is milked so long as anything that passes for milk can be obtained; her diseases are not properly recognized; she is too often in a state of actual filth. The milk itself, in the process of milking, is brought into contact with the oftentimes foul skin of the animal, the unwashed hands of the milker, and may be finally deposited in an unclean receptacle.

Scarlatina in the cow, the so-called Hendon-disease, which has been carefully examined in all its relations by the medical officers of the English Local Government Board, has been clearly proved to be transmissible to persons using the milk from diseased animals. Quite recently more extended studies upon this subject by Dr. Klein have confirmed his previous statement that, from the blood of persons suffering from scarlatina, an organism can be separated, which, in microscopical and cultural characters corresponds with the strepto-coccus obtained from the sores of particular Hendon cows, which Mr. Power has conclusively shown to stand in direct relations to an outbreak of milk scarlatina in certain portions of North London at the end of 1885 and beginning of 1886. Dr. Klein's recent experiments with newly calved cows have shown that this strepto-coccus, whether derived directly from the human body, or after its passage through the system of the cow, will, when inoculated subcutaneously at the root of the animal's ear, cause the ulcers on the teats of the cows which were observed in the cases at Hendon. He finds these ulcers to be amongst the earliest evidences of disease in the animal; that they occur whether the animal is milked by hand or is suckling her calf. The teat-sores are seen in from four to nine days after the inoculation; then comes a general affection of the whole skin, with more or less febrile disturbance, and sometimes disease-processes are observed going on in the lungs. In the disease so induced changes are found after death in various organs, such as would naturally be looked for in acute specific disease, and so constant in character as to make them indicative of the existence of cow-scarlatina.

He also asserts that the post-mortem appearances found in animals affected by this disease bear much resemblance in essentials to those found in human subjects dying of scarlatina.

More recently the same department has described another disease of milch cows that had been observed at Edinburgh. The milk from the dairy, where these cows were kept, had distributed a form of febrile sore throat among those using it. This form of sore throat was not recognized as peculiar to either scarlatina or diphtheria. A cow suffering from this "Edinburgh disease" was placed under careful observation during life. The post-mortem appearances and the bacteria associated with them were studied, with the result that the disease was found to be inoculable, and though having certain affinities with the "Hendon disease," still evidently was not identical with it. One of Dr. Klein's conclusions is of a scientific interest beyond the limits of the consideration of this disease. Criticism of Dr. Klein's researches has repeatedly taken shape in asserting the unity of those forms of the chain-forming micro-cocci, which he and others have been at pains to distinguish. At the end of his long investigation he finds himself in a position to enumerate seven sets of characters serving for differentiation between one and another organism of this group, — that is, he has reached a point where the application of seven tests is needed before an assertion of the identity of any two strepto-cocci can, even provisionally, be made. All the nine strepto-cocci examined were from the bodies of animals variously diseased. Some of the distinguishing characters were obtained by the microscope, others by cultivation in suitable media, and all apart from evidence that is obtainable by inoculation of animals and from pathological changes resulting therefrom.

The foot and mouth disease — a contagious eruptive fever of cloven-footed animals — is also communicable to man in various ways, chiefly through the use of uncooked milk. It came to this country with imported stock in 1870. Children are most exposed to the disease, both on account of the relatively large quantity of milk used by them, as well as from their smaller powers of resistance to disturbing influences.

Since Koch in 1882 discovered the bacillus of tuberculosis, and demonstrated the identity of tubercle in man and animals, there has arisen the most important question of all, — under what conditions may milk become the vehicle for the transfer of the bacillus and the disease from the cow to man. At the congress for the study of tuberculosis lately held in Paris it was, among other resolutions, "Voted, that the sale of milk from tuberculous cows should be absolutely prohibited." The full significance of this vote will be realized when it is added that in France tuberculosis is officially held to be one of the communicable diseases. Where there is tuberculous disease of the udder, it is of course agreed that the milk should not be used. But it is not true that tubercle not affecting the udder has been generally regarded as a sufficient reason for prohibiting the use of the milk. Certain observers of repute have claimed positive results from the intra-peritoneal injection in guinea-pigs of the milk of tuberculous cows without local disease of the udder.

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[1] Annual discourse delivered before the Massachusetts Medical Society, June 12, 1889. Continued from page 578.

The evidence from other sources is already sufficient to cause serious apprehension of danger to man from the use of milk from tuberculous animals; of course the inference is also inevitable that tuberculous mothers cannot safely suckle their own infants.

The Massachusetts Society for the Promotion of Agriculture, with a large and enlightened sense of the general importance of this question, has employed a competent physician and distinguished bacteriologist to conduct an investigation of this most important subject, and has placed at his disposal stock and suitable buildings, together with the co-operation of a skilled veterinarian. We may therefore confidently look forward to substantial additions to our knowledge of this, the most fatal disease in Massachusetts.

The number of cattle in New England suffering from tuberculosis is undoubtedly very large. From the reports of the veterinary surgeons attached to some of the large public slaughter-houses in Germany it appears that more than 10% of the cows brought to these places are tuberculous. There are no equally valuable statistics, to my knowledge, on this side of the Atlantic; but an intelligent non-medical observer, connected with one of the largest slaughter-houses in New England, believes, as the result of his own observation, that the proportion of animals so diseased and brought to our slaughter-houses probably exceeds the rate above given. It is also stated that Western cattle are not found to be tuberculous in the same relative numbers.

In the course of the legislative hearings which preceded the enactment of the present wise and quite effective statutes to prevent the sale of adulterated milk, it was held by the opponents of that legislation that the standard of pure milk sought to be established — 13% of milk solids — was unjust, because many apparently healthy cows never yielded a milk which reached that standard of solid parts per hundred. There is but little question as to the truth of this statement. Cows of certain breeds give a very large quantity of watery milk which does not reach the legal standard, while cows of other breeds give a milk which exceeds the legal requirement. This idea, that whatever issues from the udder of the cow is authoritatively stamped as milk of unquestionable purity, lies at the foundation of many of our difficulties in securing a healthful milk.

The use of cows of certain breeds, which produce milk of low grade, is not essentially different from the unnatural feeding, which has the result of increasing quantity at the cost of quality, and amounts to the commercial fraud of watering the milk inside the cow; and does have a definite injurious effect upon bottle-fed infants, by depriving them of a portion of the nourishment which should be contained in a definitely measured quantity of milk. The udder is, moreover, an organ of excretion as well as secretion, and the experience of the human mother is probably repeated in the animal, which is so often called upon to provide for the human infant: the milk, by reason of some quality beyond the reach of chemistry, does not agree with the stomach of the child.

The milk that reaches the consumer in the cities is, almost invariably, a mixed product. Possibly more good than harm results from this. In the majority of cases injurious qualities in any one milk would be so diluted by the addition of many times that quantity of normal milk as to give a mixture better than the single objectionable specimen. If the injurious quality, however, should be found to reside in an organic body capable of development in a suitable medium, we should have gained little by increasing its opportunities for growth. Well-considered legislative action has made it a punishable offence for a man to sell milk which falls below a certain standard. It seems to be an unnecessary concession to allow the cow to produce for the market the article which her owner is forbidden to sell as standard milk.

The importance of this subject must be my excuse for dwelling so long upon this detail of public health work. It must be plain to you that many of the dangers to which allusion has been made can only be dealt with by the authority of the State. Much of the information requisite for a decision, in special cases of injury to health, can only be obtained through an agency which acts in all portions of the Commonwealth.

Excessive infant mortality is one of the saddest social facts of the present day. With all the improvements that have been brought about in public and personal hygiene, it is far above the rate which can be secured and does exist in other parts of the world. Our experience shows that a large part of this is the result of improper feeding. It is probably not true that female vanity has triumphed over the maternal instinct so far as to cause that marked deficiency in the capacity of the human mother which has promoted the cow to her vacant post of honor.

There is no reason given by chemistry, however, why the milk of the cow should not be all-sufficient for the human infant. Milk, very evidently, is only occasionally treated with the care which it deserves and requires. If human milk were prepared in the same slovenly fashion, and given to the infant from the same dirty apparatus, I do not believe that the results would be essentially better.

The nursing-bottle, as we ordinarily find it in use, is a culture apparatus for the micro-organisms in general, which can only be harmless from the fact of the antagonisms of the bacteria. The chemical products of decomposing animal matter also present are positively dangerous.

Dr. Böckh presented to the Sixth International Congress of Hygiene at Vienna, in 1887, some facts in relation to infant mortality in Berlin which are very instructive. A table of deaths of infants before the end of the first year of life shows that the mortality of those fed on cow's and goat's milk was three times, and of those fed upon artificial substitutes for milk five times, that of infants nursed at the breast.

Very successful attempts by private organizations have been made, in different parts of the world, to secure satisfactory conditions of cleanliness in the preparation and distribution of milk; and these attempts would gain much in number and effect if the members of our profession would help on the movement by directing attention to the dangers attending habits on the part of the milk-producers which have, perhaps, been thoughtlessly adopted and retained.

It is not overlooked that many other external conditions have a great influence upon the mortality of infants. I have only attempted to deal with one influence, which can, without great difficulty, be controlled.

(To be concluded.)

Original Articles.

CREOLIN.[1]

BY EDWARD O. OTIS, M.D.

At a previous meeting[2] of this society I made a short statement regarding creolin, which I had then been using for some weeks in the Surgical Department of the Boston Dispensary. Since that time I have continued its use, both surgically and medically, with increasing satisfaction and a firmer conviction of its great utility. The experience of others as to its use is also accumulating, and I have therefore thought it might be of interest and service to the society to give a rather more systematic and extended account of the compound and its varied uses, with the results which a longer trial of its virtues has given us.

Creolin, which first came to be known through its use in veterinary medicine, is an organic compound of rather complex composition. Pearson & Co., of Hamburg,[3] who offer it in the market, give the following analysis of it: 66 per cent. of neutral hydrocarbonates; 27.4 per cent. phenols (without carbolic acid); 2.2 per cent. organic bases; 4.4 per cent. ash.

My friend, Prof. H. B. Hill, of Harvard University, has kindly made an examination of a specimen of Pearson's creolin, and finds it is a mixture of the sodium salts of some resinous acids, with the part of oil of tar known as "irod oil." Although he is not positive, he thinks the sodium salts are probably what is known as "Harzseife," a resin soap. The oil contains a small amount of carbolic or cresylic acid. It is obtained from English pit coals by distillation, and in appearance is a brownish-black oily fluid; easily soluble in alcohol, ether, and chloroform; with water it forms a homogeneous, slightly alkaline emulsion, milky white and opaque. It is of tarry odor and of an aromatic, burning taste. The preparation I use is from the firm of William Pearson & Co., Hamburg, who are, so far as I know, the only manufacturers of creolin, and who guarantee the uniformity of composition of all that bears their stamp. In Germany creolin is cheaper than carbolic acid, sublimate, or iodoform; here I think it is about the same price as carbolic acid.

Creolin is claimed to be — and the evidence seems to verify the claim — a non-poisonous germicide and antiseptic; one of the most perfect deodorants; to a certain extent a hæmostatic; and possessing qualities which diminish secretion and promote granulations. Moreover, it exercises a most happy effect upon unhealthy and pus-secreting mucous membranes. Finally, it is a non-irritant.

That creolin is non-toxic is immensely in its favor as an antiseptic; from this fact, other things being equal, its advantage over corrosive sublimate, carbolic acid, and iodoform is great, and the range of its use greatly enlarged, as, for example, it can be used with safety in washing out the pleural and abdominal cavities, as a gargle, and in nasal, uterine, vaginal, and bladder douches. In my experience which has not been inconsiderable, I have met with nothing which approximated to a toxic effect. In the experiments and experience of others the conclusion has been reached, with one or two exceptions, that, used of sufficient strength to make it thoroughly antiseptic, either internally or externally, it is innocuous to higher organisms. Rosin[4] and Baumm[5] report a case or two of possible poisoning where creolin was used as a vaginal and uterine douche in the puerperal state. Against these cases we have the one hundred and forty of Minopoulos[6] in the Munich Lying-in Hospital, in which he used douches of creolin of one-half, one, and two per cent. solutions, with no record of poisoning; also the one hundred and twenty-four cases of Born[7] with the same results.

Spaeth[8] says that in about thirty cases of general surgery in which the antiseptic used was creolin he met with no toxic results; nor does any other observer report poisoning from its use.

That creolin is a reliable germicide the investigations of Esmarch, Eisenberg, Parks, and Sedgwick abundantly prove. Esmarch[9] made comparative tests of the germicidal power of creolin and carbolic acid, and found that a solution of the former, even weaker than one per cent., destroyed the bacilli of cholera, typhus, and Staphylococcus pyogenes aureus quicker and surer than a like percentage of carbolic acid; the anthrax bacillus, however, was rendered inert more surely by the carbolic acid than by creolin.

Eisenberg,[10] in the Vienna Hygienic Institute, instituted tests also of the germicidal properties of this new antiseptic. He tried it with bouillon cultures of various bacteria, Streptococcus pyogenes, Streptococcus erysipelatus, Staphylococcus pyogenes aureus, and others, and the result was in favor of creolin over carbolic acid, even in the case of anthrax bacillus.

Parks[11] found creolin, in the strength of 1:200 and 1:1000, an efficient germicide. My friend Prof. Sedgwick, of the Massachusetts Institute of Technology, has kindly made some experiments with creolin for me in the biological laboratory of that institution. To dilute sewage containing 1400 bacteria to the cubic centimetre, creolin to two per cent. was added, and there was no growth. Again a one-half per cent. creolin in a solution of pepsin containing 6,435 bacteria to the cubic centimetre stopped all growth. Lormuscan[12] makes the general statement that the germicidal power of creolin is ten times that of carbolic acid, and its action on the spores is even more pronounced than that of the sublimate.

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[1] Read before the Boston Society for Medical Observation, February 4, 1889.

[2] Boston Med. and Surg. Jour., August 9, 1888.

[3] Centralblatt für Chirurgie, 1888, No. 21.

[4] Therapeutische Monatshefte, October, 1888.

[5] Centralblatt für Gynäkologie, 1888, 21.

[6] Münchener Med. Wochenschrift, 1888, 45.

[7] Centralblatt für Gynäkologie, 1888, No. 20.

[8] Münchener Med. Wchnschr., 1888, No. 4.

[9] Centralblatt für Bacteriologie und Parasitenkunde, Bd. ii., 1887, 10, 11.

[10] Wien. Med. Wchnchr., 1888, xxxviii. 17-19.

[11] Study of Some of the Pyogenic Bacteria and of the Germicidal Activity of Certain Antiseptics. Medical News, Dec. 1, 1888.

[12] Moniteur du Practicien, March 25, 1888.

The marvellous deodorant power of creolin is another of its excellent attributes. Rausche[13] refers to the remarkable deodorizing effect a one per cent. creolin solution produced in the case of an enormous, filthy, stinking carcinoma when other means had failed. The odor was not only destroyed, he says, but there was an evident and continued diminution of pus. We all know, in such cases as this, how very difficult it is to prevent odor. Minopoulos,[14] in his obstetric clinic, found creolin a most excellent deodorant in cases of abortion with evil-smelling discharge; he used for this purpose tampons soaked in a one per cent. solution of creolin, and allowed them to remain twenty-four hours. In ozæna Pleskoff[15] found that the odor quickly disappeared, together with the cessation of the formation of crusts, by the use of creolin. Inhalations of creolin vapor in cases of phthisis with expectoration and odor are reported by Klamann[16] to reduce the expectoration and destroy the odor. So of the bad odor of cystitic urine. Jessner[17] narrates a case of chronic cystitis, in which after sublimate injections and other means had failed, he used a one-half per cent. solution of creolin, which at first produced a strong burning which later disappeared. In the afternoon of the same day on which the creolin was used he found a very different picture, he says: the patient presented an appearance of well-being; and when the urine was drawn it was light and clear, instead of being thick and of bad odor; the sediment was also diminished. How perfectly two per cent. of creolin will destroy the penetrating odor of iodoform is perhaps the best test of its power as a deodorant. In brief, in all cases of foul discharge and odor, chronic suppuration, sloughing, gangrene, and the like, creolin appears to be the best and quickest deodorant yet discovered. Creolin, in a solution of two or three per cent., has been found to possess hæmostatic properties also. In the parenchymatous bleeding of fresh wounds, the bleeding from mucous membranes, ulcers, cavities which can be plugged with creolin tampons, and in the many smaller hæmorrhages, often annoying and persistent, creolin acts as a hæmostatic of no mean value. In the removal of sloughs caused by chromic or glacial acetic acids, from the nose, there is often more or less hæmorrhage, which, Dr. Leland writes me, is controlled by a two per cent. solution of creolin.

In order to obtain to any great extent the hæmostatic power of creolin I believe the solution should be as strong as two per cent.

The peculiar and happy effect creolin exerts upon unhealthy surfaces, mucous or other, has been noted by all who have used it. I have observed this in suppurations in different parts of the body, in abscesses, sinuses, and carbuncles. In a case of this latter malady I applied the pure creolin deep into the suppurating mass. One notices that the pus secretion is diminished, unhealthy wounds and ulcers become clean, and indolent granulations fresh and firm. Spaeth,[18] in referring to its use in burns of the second and third degree, varicose ulcers, wounds where there was not union by first intention, says he was not only satisfied with the results but indeed surprised to see how rapidly the sloughs disappeared and healthy granulations appeared. The change was more rapid than when sublimate, iodoform, or carbolic acid was used. He also narrates a case of amputation of the thigh for pyæmia, where the pyæmic fever continued and sloughing went on in the stump in spite of applications of iodoform, sublimate, and the like. Finally, when the patient was nearly *in extremis*, he applied gauze soaked in a two per cent. creolin emulsion. Two days thereafter the condition of the patient and wound was entirely changed. The granulations were healthy, under which the bone stump quickly disappeared. The sloughs were quickly thrown off; the fever soon subsided; and the pulse grew stronger. Twenty days later healing was nearly accomplished.

Altered and unhealthy mucous surfaces, as in chronic naso-pharyngeal catarrh, cystitis, chronic gonorrhœa, tracoma, and the like, both in the quantity and quality of the secretion, change under the use of creolin, and the character of the mucous membrane tends towards a more normal condition. I shall later give results and opinions as to its use in the special mucous membranes. A creolin solution may, and generally does, produce at first a burning sensation, which, however, soon disappears in most cases if the solution is not too strong. I have noticed this effect in washing out the bladder, and in nasal douches especially.

Baumm[19] says that in his experience a solution stronger than two per cent., applied to mucous membranes and portions of the body where the skin is delicate, produces a severe and continuous burning, even to erythema. In moist surgical dressings I have had this burning complained of, and Klamann[20] speaks of it in a like use of creolin, where a lotion of more than two per cent. is used. In the nose, Dr. Leland says, a two per cent. solution and five per cent. powder causes some smarting. I have never, however, seen any true irritant effect from its use, and all who have written of it from their experience agree with Hiller[21] in ascribing to it the virtue of being a non-irritant antiseptic. Spaeth[22] says he has never met with local eczema from its use, such as one sometimes sees from sublimate or carbolic, or with general eczema, as from iodoform.

From the foregoing it will be seen that creolin has a large range of usefulness; and my account will not be complete without giving some of its specific uses and the results.

First, its use in general surgery, in

- Fresh wounds: (operative or accidental)
- Burns.
- Suppuration, such as
  - suppurating wounds.
  - bed sores.
  - sloughing.
  - abscesses.
  - carbuncles.
  - sinuses.
- Empyæma.
- Gangrene.

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[13] Centralblatt für Chirurgie, 1888, 21.

[14] *Loc. cit.*

[15] Therapeutische Monatshefte, Oct. 1888.

[16] Allg. Med. Centr. Ztg., Berlin, 1887, xxv 676.

[17] Deutsche Medizinal-Zeitung, 1887, No 102.

[18] *Loc. cit.*

[19] *Loc. cit.*

[20] All. Med. Centr. Ztg. Berlin, 1887, xxv 676

[21] Deutsche Med. Wochenschr., July 5, 1888

[22] *Loc. cit.*

For the ordinary purposes of an antiseptic in operative surgery two solutions are required,— the one of two per cent., for cleansing and disinfecting the hands; the portion of the body to be operated upon, and for the instruments; the other of one-half per cent. for irrigating the wound, and in which to wet the gauze dressings, if used. Where a powder is desired to dust over the line of sutures, or for other uses, creolin with boracic acid can be used (creolin 3, boracic acid 100). To complete the dressing there is creolin gauze of different per cents. strength, which one can use either moist or dry, and absorbent cotton impregnated with creolin. Rausche[23] recommends moist dressings, and says that fresh wounds, either open or closed, do excellently well under them.

On open wounds creolin appears to have a peculiarly calming and curative effect, says Lormuscan.[24] Unfortunately a creolin solution is opaque, which is an objection to its use as an antiseptic fluid for instruments. I have used diatomaceous earth impregnated with creolin, at the suggestion of Mr. Bassett, of J. T. Brown & Co., for a powder dressing, but am not altogether pleased with it: it is inclined to form an impenetrable crust and shut in whatever discharge there may be. The creolin-boracic powder is better.

For burns, I think creolin oil can be used, — one per cent. suggested by Klamann,[25] who found that it acted exceedingly well, — or creolin ointment of one or two per cent., with vaseline, lanolin, or agnine as a base. In large burns Kortüm[26] found a permanent bath of creolin water very useful. If a dry dressing is preferred, creolin absorbent cotton of two per cent. strength can be used.

Where there is suppuration, either with or without sloughing, creolin is most effective, diminishing the amount of secretion and producing a healthy condition of the tissues, as I have before mentioned. In bed sores Kortüm[27] suspended the part affected in a pan containing a one-half per cent. solution. Sinuses can be syringed out with a solution of it; and in abscesses or suppurating wounds I have used largely what I call a creolin poultice, wringing out absorbent cotton in a one-half per cent. solution and applying it, with a covering of dry cotton. This makes a clean, antiseptic, moist dressing readily and quickly renewed. I generally give the patient a small bottle of the pure creolin, and tell him to put a few drops in a glass of warm water and saturate his cotton with the solution. This answers all the purposes of an ordinary poultice and adds the advantages derived from the peculiar properties of creolin. Gauze, either plain or with one or two per cent. of creolin, can be used in the same way.

In the incision of abscesses, felons, suppurating buboes, and the like, a bath of warm creolin solution for some minutes, preparatory to the dressing, not only renders the cavity antiseptic, but tends to check any undue hæmorrhage. In extensive suppuration, especially of the extremities, a permanent bath of creolin water, as suggested by Kortüm[28] for burns, can be used. The non-poisonous and non-irritant properties of creolin together with the favorable influence it exerts upon pyogenous membranes, render it an ideal antiseptic for washing out the pleural cavity in empyæma.

Owing, however, to the delicate structure of the pleura, a mild solution should, at least at first, be used. Hiller[29] uses a solution of from one-tenth to one-half per cent. for this purpose.

Creolin has been applied to the mucous membranes in almost every part of the body, from the eye to the urethra. It has been used in the

Eye.
Ear.
Nose (douche and tampon).
Throat (douche and gargle).
Bronchi and lungs (inhalations).
Urethra (injection and irrigation).
Bladder (washings).
Vagina and uterus (douche).

In the eye Purtscher,[30] Mergl,[31] and Amon[32] have used it in a one per cent. solution for conjunctivitis, acute and chronic, simple and phlyctenular; tracoma; blennorrhœa of the tear passage; and keratitis. As there is severe burning when first applied, Purtscher first uses cocaine. The best results were obtained in tracoma and corneal ulcers, particularly in the latter. Mergl says that in pannus or in ulcers of the cornea combined with tracoma he found creolin a most excellent application. The ulcers quickly cleaned up and the pannus was stayed in its course and improved. Grünhut,[33] however, reports less favorable results.

Eitelberg[34] recommends a solution of creolin — ten drops to half a litre of warm water — for syringing the ears and as an application to the auditory passages in active middle ear inflammation. Pain in the neighborhood of the mastoid process disappears very quickly, he says, under this treatment. Being non-poisonous it is admirably adapted, he further says, for syringing the eustachian tube, especially in children.

Pleskoff[35] reports a series of cases of rhinitis chronica, ozæna, and pharyngitis sicca treated with creolin. He used a solution of one per cent., and tampons ten to fifteen centimetres long and about the thickness of the little finger, which, after being wrung out in the creolin solution, he inserted deep into the anterior nares and allowed to remain for twenty minutes for rhinitis sicca. In a comparatively short time he found the quantity of the secretion was lessened and the character of the mucous membrane changed to a more normal condition. In ozæna the odor quickly disappeared and the formation of crusts stopped. In pharyngitis sicca the tampons were inserted into the posterior nares so that they projected into the posterior nasal space. Creolin was also applied locally to the pharynx. In conclusion he says that we have in creolin a remarkable remedy which promises to play an important part in diseases of the throat and nose. In ordinary cases of naso-pharyngeal catarrh I have been in the habit of giving the patient a small amount of creolin and telling him to begin with one or two drops to a tumbler of warm water and use the solution with a nasal syringe. The mucous membrane of the nose, like that of the eye, is very sensitive, and sometimes only a drop or two to a glass of water can at first be borne.

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[23] Centralblatt für Chirurgie, 1888, 21.
[24] Moniteur du Practicien, March 25, 1888.
[25] Allg. Med. Centr. Ztg. Berlin, xxv. 676.
[26] Berlin. klin. Wchnschr., 1887, 46.
[27] *Loc. cit.*
[28] *Loc. cit.*
[29] Deutsche Med. Wochenschr., July 5, 1888.
[30] Centralblatt für Augenheilkunde, March, 1888.
[31] Ibid., August–September, 1888.
[32] *Loc. cit.*
[33] Prager Medicinische Wochenschrift, 1888, 39.
[34] Wiener Med. Presse, 1888, No. 13.
[35] Therapeutische Monatshefte, Oct., 1888.

Dr. Leland writes me that he has used creolin in the nose for several months with satisfactory results.

In setting up deflected septa, he says he uses pervious hard rubber plugs wound with absorbent cotton and saturated with some antiseptic fluid. Previous to the use of creolin it was necessary to change these plugs every day, or every other day, on account of the extremely disagreeable taste and odor, notwithstanding frequent washings with Dobell's solution. By saturating the cotton-wound plug with a two per cent. solution of creolin, and washing thoroughly once daily with the same solution, he is enabled to keep the plugs in place for six days without removal. Also in dilating narrow nostrils or in keeping wounded or cauterized surfaces apart, he uses smooth splinters of wood wound with cotton and soaked in a two per cent. solution of creolin; with the use of a wash of one-half to one per cent. solution by the patient the nostrils are kept clean and sweet, so that these plugs can be worn with comfort.

The two per cent. solution, he says, and the five per cent. powder (with infusorial earth) cause some smarting in the nose, but this is insignificant when the surfaces are well under cocaine, and lasts but a short time otherwise. He also notes the hæmostatic effect of the two per cent. solution, which I have before referred to.

Amon[36] speaks of the excellent results he obtained from the use of creolin in diphtheria; by the use of no other remedy had he seen the symptoms so quickly disappear. He uses from one-fourth to one per cent. solution locally applied and as a gargle.[37]

Schnitzler[38] uses the following formulæ for gargle, mouth wash, and insufflation in the stubborn forms of angina follicularis: —

℞. Creolin, one or two parts.
 Aquæ destill. vel.
 Aquæ Menth. Pip., one hundred to five hundred parts.
M. Sig. As a gargle.

℞. Creolin, one to five parts.
 Aquæ destill., fifty to one hundred parts
M. Sig. Apply with a brush.

℞. Creolin, one to five parts.
 Acid boric, ten parts.
 Ol. Menth. Pip., q. s.
M. Sig. For insufflation.

Amon[39] also used inhalations of creolin vapor in phthisis, which, he says, reduced the expectoration and stopped the odor when present. He used from one half to two per cent. solution. I am also using the same for a case of apex catarrh, together with the internal administration of the compound, but the case has not been under observation long enough to obtain any definite results. In urethritis, especially when chronic, creolin has been used with more or less success. Dr. Allen has kindly given me the results of its use in thirteen cases which he treated in the Genito-Urinary Department of the Boston Dispensary in the summer of 1888. It was used either as an injection or as an irrigation; in some cases both methods were employed. It was used in six cases as an injection with an ordinary urethral syringe three or four times a day; these were the more acute cases. The strength of the solution was one-half per cent., to be diluted if necessary. In nearly all these cases the injection was painful, even when considerably diluted, and either seemed to increase or failed to diminish the discharge. In one case it seemed to work quite well. In ten cases irrigation was used once or twice a week. A quart of warm one-fourth per cent. solution was used through a soft catheter passed down to the bulbus urethræ. This method was more satisfactory, he says. In several cases it was more or less successful in reducing the discharge to a minimum, although in a few there was no noticeable improvement. In two or three cases the benefit was very decided, and in one the discharge was absolutely stopped in a month after three months of unsuccessful treatment by other means. The more chronic the cases the slighter the discharge, and the less inflamed and sensitive the urethra the better was the result. Where there is much active inflammation, he says, it is irritating. Probably still better results would have been obtained by the irrigation method if it had been used more frequently than once or twice a week. I have used creolin solutions for washing out the bladder in the chronic cystitis from enlarged prostate. A one to five hundred solution was about as strong as could be borne without causing severe pain. In one rather extreme case creolin has served me as well as, if not better, than permanganate of potash or any other antiseptic used, although I have not obtained such brilliant results as Jessner did in his case before narrated. If I had been able to use a stronger solution than one-fifth per cent. I probably should have seen more marked effects. In purulent cystitis of long standing, accompanied with pain and an offensive odor to the urine, the creolin washings seem to have produced the most favorable results. I would advise that a solution not much stronger than one to five hundred should be used, at least to begin with.

In obstetric and gynecological practice creolin has been extensively used. Minopoulos,[40] at Prof. Winkel's clinic in Munich, made a comparative test of it with sublimate. In two hundred and eighty lying-in cases he used the bichloride with half and creolin with half. The solutions of creolin were one-half, one, and two per cent.. Irrigations were made immediately before and after birth, and in the subsequent lying-in period only when the temperature rose to fever point. Before each examination the hands and instruments were thoroughly disinfected with creolin. Of the one hundred and forty cases treated with creolin, two were severely infected, one dying, and nineteen were less severely infected. The two septic cases were treated with one-half per cent. solution and only during labor, and not immediately before or after delivery. Of the remaining nineteen, two were examined in their own dwellings and probably were already infected when they came to the hospital. There then remained seventeen slightly infected cases. Of the one hundred and forty cases treated with the sublimate, three were severely infected, with one death, and thirteen less severely. His conclusions are that the results obtained with creolin are as favorable, if not more so, than those obtained with corrosive sublimate. Born[41] obtained equally satisfactory results in his one hundred and twenty-four cases.

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[36] Münchener Med. Wochenschrift, 1888, 26.

[37] *Vide* also Koehler: Creolin in the Local Preventative and Curative Treatment of Infectious Throat Diseases. Medical Record, January 19, 1889.

[38] Deutsche Medicin Wochenschrift, August 16, 1888.

[39] *Loc. cit.*

[40] *Loc. cit.*

Baumm[42] concludes from his experience that creolin as a prophylactic and as a means of fighting puerperal fever shows itself as good as any of the previous antiseptics. Injuries of the parturient tract heal under creolin, he says, strikingly well. Kortüm used tampons saturated with a two per cent. solution in severe atony of the uterus, with favorable results. For lubricating the fingers of the operator he used a two per cent. creolin oil.

In fetid lochia, cases of abortion with evil-smelling discharge, leucorrhœa, cancer of the uterus with ready bleeding and foul discharge, creolin would appear to be a most excellent application, both as a vaginal and uterine douche.

It will be noticed that in all these uses of creolin in treating mucous membranes the more chronic the condition the better the results obtained.

It only remains for me to speak of the internal use of creolin and to enumerate the different creolin preparations. I have used creolin internally in phthisis and in dyspepsia due to fermentation, but not extensively enough to obtain any definite results, except that it is a very unpleasant compound to take, unless enclosed in gelatine capsules, as Hiller[43] recommends.

Amon,[44] from the results of several months' trial of it in pulmonary tuberculosis, and simple inflammatory affections of the lungs, — using it internally and by inhalation, — gives it a high place among remedies for these diseases. He also declared his belief in the future importance of creolin in the prophylaxis and therapeutics of infectious diseases. Hiller[45] is enthusiastic over creolin for diseases of the alimentary canal. He gives in strong gelatine capsules, containing from three to fifteen grains, an hour after meals. Given in this way it promptly and certainly relieves meteorism from whatever cause, he says. He found it also efficient in simple flatulence, gastric dilatation, acute and chronic gastric catarrh, typhlitis, diarrhœa, and especially typhoid fever. Its antizymotic properties come out most clearly, he concludes, when used against the numerous processes of fermentation and decomposition which accompany most, if not all, such diseases; and used in such conditions he considers it the best remedy, excelling naphthalin, creosote, thymol, calomel, and all others. He also reports prompt and complete results from its use in tænia and oxyuris.

The preparations of creolin I have are: —

Creolin gauze, one and five per cent.
Creolin absorbent cotton, also one and five per cent.
Creolin jute, five per cent.
Creolin lint, one and five per cent.
Creolin silk, for sutures and ligatures.
Creolin powder, with infusorial earth, two and five per cent. creolin.
Creolin powder with boracic acid, three to one hundred.
Creolin oil, two per cent.
Creolin soap, five and ten per cent.
Creolin ointments, of from two and a half to ten per cent., with vaseline, lanolin, agnine, cerate, etc., as a base; and
Creolin mixed with iodoform (one or two per cent. of the former), which renders it disinfectant and deodorant. This combination applied to wounds, ulcers, abscesses, etc., gives results, it is said,[46] at least not less favorable than from pure iodoform.

I have to thank Mr. Bassett, of the firm of J. T. Brown & Co., and Messrs Grosvenor and Richards, for kindly preparing for me much of this creolin material.

This is the story of creolin, and although we may not exclaim with the enthusiastic Lormuscan, "l'iodoform est morte, vive le créolin," still, from the favorable results thus far obtained, I think we are warranted in accepting it as a valuable addition to our list of antiseptics, and prompted to investigate its virtues still farther.

Since the above was written further results and observations upon the use of creolin have been published, and it still appears to be regarded as a valuable antiseptic. My continued use of it, also, confirms my belief in its efficacy. E. O. O., June 18, 1889.

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[41] *Loc. cit.*
[42] Centralblatt für Gynäkologie, 1888, 21.
[43] Deutsche Med. Wochenschrift, July 5, 1888.
[44] *Loc. cit.*
[45] *Loc. cit.*
[46] Medical News, December 1, 1889.

SOME POINTS IN THE ETIOLOGY OF TYPHOID FEVER.[1]

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IN the excellent paper just read Dr. Swarts has presented a resumé of the experimental work which has established the diagnostic worth of the typhoid bacillus, and he has also presented the experimental evidence of the etiological as well as diagnostic importance of the organism. As long as our knowledge of typhoid in the lower animals remains as uncertain as it is at the present time, it is unwise to base any conclusions as to the etiological rôle of the bacillus upon the laboratory experiments which have been made upon these animals. It is only by similar experiments made upon man that the actual rôle of the organism can be positively determined, and such experiments are of course not permissible. I therefore consider of the greatest value certain clinical evidences, if I may so call them, of the causative relation of the bacillus to typhoid in the human subject. If we can find the bacilli in water or other media which we know to have caused the disease, we shall have evidence of very great weight of the pathogenic property of the organism.

In epidemics of greater or lesser magnitude, traceable to drinking-waters, the water has in a number of instances been examined for the bacilli. That they have not always been found need not surprise one who is at all familiar with the difficult processes of bacteriological analysis. Even such skilled observers as Gaffky[2] at Wittenburg, Kock and Cramer[3] at Zurich, Simmonds[4] at Hamburg, and Rietsch[5] at Pas des Lanciers were unable to detect the bacilli, although the water was certainly the cause of the epidemics observed at the above-named places. On the other hand, we have as positive evidence the finding the bacilli in a well at Mulheim,[6] the water of which was known to have caused typhoid in fourteen persons. Beumer[7] found it at Greifswald under similar circumstances, and so did Rodet at Sous-Ville-Charmoux,[8] and Arloing at Cluny.[9] Widal[10] found it in Paris, and Chantemesse at Clermont-Ferrand[11] and Pierrefonds.[12] The latter was a particularly interesting case, as large numbers of the bacilli were found in a well — twenty-five thousand to the litre — the water of which caused typhoid fever in every one of a party of twenty persons who came there from Paris, and who drank the water. There was no typhoid elsewhere in the place at the time. The chemical analysis of the well did not indicate any great pollution; indeed, was better than the neighboring wells in which the bacilli were not found, and which did not cause the disease. In Italy the bacillus has been found in drinking-water which was the cause of the disease, by two observers.[13] Kowalski[14] found it at Vienna in 1886, and da Rocha[15] at Coimbre. In this country, Vaughn[16] found it in water which caused an epidemic at Iron Mountain, and in air which produced the disease at the Michigan State Prison.[17] At Cincinnati, in 1887, there was a moderate epidemic of typhoid, and Rochford[18] found the typhoid bacilli in the city water. In all, there are thirteen recorded instances in which the bacillus of Eberth has been found in waters known to have caused typhoid, and once in air. Since this organism is so constantly found in cases of typhoid, in the essential lesions of the disease, and in the evacuations of the patient, which are known to be contagious, and since it has been found repeatedly in water and air which were known to cause the disease, we are forced to the conclusion that it is the essential factor in its production. And this is rendered still more certain by the negative evidence of its absence, as shown by repeated biological examinations of drinking-water, as at Pierrefonds mentioned above, and by the fruitless search that has been made for it in other diseases. In a paper published in 1885 I said that there was no good evidence that the so-called typhoid bacillus of Eberth was really the cause of the disease; but since that time the evidence has accumulated so that one is justified in considering the germ theory a theory no longer, so far as typhoid fever is concerned.

Our present knowledge of this disease explains many things which were formerly a great puzzle to us, and reconciles what were apparently contradictory views. Thirty years ago Budd was a strenuous advocate of the contagiousness of the disease, while Murchison as strongly argued in favor of its *de novo* origin. Budd was correct, for it is contagious; but so was Murchison, in a measure, for the ability of the organism to live outside the body in almost any organic substance, and to resist months of freezing weather,[19] shows that it may propagate and be transported independently of any human agency, and so substantially arise *de novo*. That the typhoid bacillus may grow outside of the body, the poison remaining latent, as it were, even for many years, is not at all improbable; and the journals contain many instances like the following, which illustrate this point: Janeway,[20] in giving the history of the epidemic at Princeton in 1880, says that, with one exception, and that in a distant part of the town, there had been no typhoid in the place for forty-five years, when there were several cases in the same yard in which the disease first appeared in 1880. Low[21] narrates a case where it is probable that the bacilli continued to propagate in one place for thirty years. In cases even where the time is much shorter than this, the first infection may readily be lost sight of, and in this way are to be explained the many cases of apparently *de novo* origin. How numerous such cases are may be inferred from the answers received by Cabell[22] from sixty-eight correspondents in the rural parts of Virginia, fifty-eight of these replying that they believed in the *de novo* origin of the disease. Murchison thought that the poison was generated by filth, and hence called the disease pythogenic fever. He was both right and wrong. The typhoid organism grows on almost any dead vegetable or animal matter; better on the latter; but it grows best when such matter is not decomposing. But dead organized matter, except in freezing weather, speedily becomes filled with hosts of putrefactive organisms, and so the typhoid bacillus is obliged to struggle with them, and is hence found in filth, as we call it. But it does not prefer the company it keeps. It grows better alone on fresh material; but this it cannot get, except as it is prepared for it in laboratory cultures. It is probably the checking of putrefactive growths in the cool autumn weather which gives the typhoid bacilli a better chance, and makes the disease most prevalent just before the advent of frost. The typhoid bacillus is of slow growth, and hence the rapidly multiplying germs of putrefaction crowd it out in the hot summer season: but it grows well in the cool autumn, which is not so favorable for the other organisms.

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[1] Read before the R. I. Medical Society, March 11, 1889.
[2] Mitt. aus d. k. k. Gesundhtsamt., ii. p. 372, 1884, Berlin.
[3] Deut. Vtljschr. f. öff. Gesundhtspflg., 1886, xviii. 537.
[4] Deut. Vtljschr. f. öff. Gesundhtspflg., 1886, xviii. p. 142.
[5] Jour. de l'anat. et phys., Paris, 1886, xxii. 221.
[6] Ergänz. zum Cbl. f. allg. Gesundhtspflg., ii. 2, p. 133, 1886.
[7] Deut. med. Woch., 1887, No. 28.
[8] Lyon méd., 1887, lvi. 583.
[9] Lyon méd., 1887, lvi. 371, 414.
[10] Gaz. heb., 1886, p. 726.
[11] Ann. d'hyg., 1887, 3, s. xviii. p. 385.
[12] Gaz. heb., 1886, 2. s. xxiii. p. 829.
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[15] Coimbre Med., 1887-88.
[16] Phil. Med. News, 1888, i. 92.
[17] Sanitary News, 1888.
[18] Cincinn. Lancet-Clinic, 1888, p. 33.
[19] N. Y. Med. Rec., April 2, 1887.
[20] N. J. State Board of Health Rep., 1880, iv. p. 60.
[21] Br. Med. Jour., 1880, ii. p. 733.
[22] Trans. Am. Med. Ass. Phil., 1877, xxviii. p. 41.

There are three ways in which the typhoid organisms can gain access to the body: in the inspired air, in the drink, and in the food. Of course they must very frequently be taken into the lungs, but how often they pass from the lungs to the intestines is an open question. Probably rarely. Experimentally we know that they are rapidly destroyed in the blood of animals into which they have been injected, and they do not appear in human blood until it has been profoundly altered by the disease. It seems unlikely that they can often make their way into the pulmonary capillaries and reach the intestines alive. Clinical evidence, too, is against it. If typhoid fever spreads by the absorption of the organisms by the respiratory tract, we ought to find the disease constantly develop in hospital wards, where all sorts of patients are crowded together, and usually little or no attempt at disinfection is made. But Murchison[23] says that in the London Fever Hospital, between 1848 and 1870, nearly six thousand cases of typhoid fever were treated, and during that time only four attendants upon them were attacked. Thirty-five hundred typhoid cases were treated in the same wards with over five thousand other patients, and not one of the latter contracted the disease. During this period almost no attempt at disinfection was made. Yet there is evidence to show that aerial infection does sometimes take place. Thus a case is reported where three young ladies, guests in a large hotel, who slept close by a privy containing typhoid stools, were attacked, although their food and drink were above suspicion.[24] None of the other guests were affected. At Mt. Desert, the persons who slept on the side of a hotel next to an open cesspool were attacked, while the other guests escaped.[25] At Princeton College, in 1880, the cases occurring in the college dormitories were shown to have a close relation to defective plumbing, which admitted infected air into the rooms.[26] The water was certainly not the source of the disease, and it is not likely that the students had much if any food in the rooms which could become contaminated. While in this city cases of typhoid seem often to be caused by contaminated air, it is almost always possible, and it seems to me probable, that it becomes effective by secondarily contaminating the food.

That well water may be the medium of infection in typhoid fever has been demonstrated beyond question. The epidemic at Pierrefonds, already mentioned, is perhaps as good an instance as any. The much-quoted account by Dr. Flint of the polluted well at North Boston, which caused twenty-eight cases among those who drank from it, is another bit of conclusive evidence. Dr. Abbott, of the Massachusetts State Board of Health, a short time since told me of an epidemic at Canton Junction last spring, where a well belonging to a foundry was polluted from a cesspool fifty-three feet up the hill, which had received the stools of a typhoid patient the Fall before. The water caused a large number of cases among the workmen who used it, while the men in an adjoining building, who had other water, escaped. I can give no such striking instances as these in the history of Providence, though a number of times I have found typhoid among those who drank from a well known to be polluted with excrement, though not necessarily from a typhoid patient. As only a small proportion of our people use wells (there were only 1400 in use in 1885, while there were 12,500 service-pipes for the Pawtuxet water), it is possible that this may account for my inability to trace typhoid more frequently to this source. Nevertheless it is a fact that, with the exception of the past year, more cases of typhoid have occurred proportionally among the users of well water than among the users of Pawtuxet. And during the thirteen years since Pawtuxet water came into general use, the death-rate from typhoid has been nearly 40% less than in the preceding nineteen years. But the figures for the last thirteen years do not include the three epidemics which I believe were due to transient pollution of that water. There has been, as we should expect from the increasing interest in sanitary matters, a decrease in other parts of the State, but it has only been 25% as compared with 40% in the city.

While we can readily understand how the entrance of excreta from a case of typhoid into a well may infect the water so that those who drink it may become attacked, it is by some considered highly improbable that a running stream of considerable size can be thus infected. But the facts here, as in the case of wells, are incontestable. The history of Plymouth, Penn., is well known to you all. The stools from a single patient were thrown on the bank of the stream furnishing the water-supply of the town. The rains of the last of March washed these excreta into the water. This supply had for a time been shut off, but was turned on again on March 26. From April 5 to 9 over three hundred cases occurred, and ultimately twelve hundred out of a population of eight thousand sickened with this disease. I do not know the siz of this stream, but, as it was sufficient for eigh thousand persons, it probably had a flow of not less than 600,000 or 800,000 gallons a day. At Clermont and Mont-Ferrand,[27] in France, there was an epidemic in the Fall of 1886 which was traced to the pollution of the water-supply by the stools of a typhoid patient in August. Twenty days later the epidemic appeared, and at one time there were 231 cases among 40,000 people. Adjoining towns with a different water-supply escaped. The finding of the typhoid bacillus has been mentioned.

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[23] Enteric Fever, p. 462.

[24] Soc. méd. des hôp., 1887.

[25] Boston M. & S. Jour., 1873, lxxxix. 421.

[26] N. J. State Board of Health Rep., 1880, iv. p. 65.

At Bordeaux,[28] in 1886–7, between Dec. 1 and Jan. 31, 841 cases were reported, mostly in those districts of the city which were supplied with water which was liable to contamination from typhoid stools.

At Geneva,[29] in 1884, there was an epidemic of typhoid, lasting six months, clearly produced by the contamination of the water of the lake (which was used temporarily at that time) with sewage containing typhoid excreta. The largest number of cases reported in one month was 964. The population of Geneva is about 50,000. The facts of this epidemic indicated that the incubation of the disease is about two weeks.

At Zurich,[30] in 1884, there was an epidemic, traced to the public water-supply, lasting four months, and attacking 1621 out of 83,000 persons.

At Hamburg,[31] in 1885, there was an epidemic, beginning and ending abruptly, lasting several months, and including 2415 cases in a population of 550,000. One suburb, supplied with the same water (taken from the Elbe, and known to be polluted), suffered equally with Hamburg, while another section, continuous with the city, but with a separate water-supply, escaped.

At Cincinnati,[32] in 1887, there was an epidemic of typhoid which attracted considerable attention from the medical profession. This epidemic was traced to the public water-supply, which is taken from the Ohio river.

Numerous instances of a similar fatal pollution of large bodies of running water could be given, and it would be interesting to follow the steps by which the various epidemics were traced to their true origin; but lack of time forbids, and enough has been said to show that such pollution is by no means rare. We will now consider the influence of the public water-supply on typhoid fever in Providence.

During the latter part of November, 1888, typhoid fever began to increase quite rapidly, and quite abruptly, at about the 23rd of the month. The increase culminated on Dec. 1st, when twenty-eight cases were reported, and the epidemic ceased almost as suddenly as it began, on Dec. 12th. The following are the cases reported during the weeks ending

Nov. 17	Nov. 24	Dec. 1	Dec. 8	Dec. 15	Dec. 22
6	11	21	139	84	16

There were fifteen deaths in November, forty-seven in December, and five in January. It will thus be seen that the epidemic was short, severe, and abrupt. The increase in typhoid was at this time confined to this city. It did not affect the neighboring towns. It was pretty evenly distributed throughout the city. As soon as these facts were determined, which was not till Dec. 1st, suspicion was at once thrown on the public water-supply as being the one cause most likely to affect the whole city, and not affect our near neighbors. Inquiry was made of the physicians in the valley of the Pawtuxet, to see if typhoid had been prevailing there. It was found that it had been prevailing from August to December 1st at Natick. It had attacked some twenty persons living in tenements near the river. The place was visited, and it was found that the inhabitants of the houses had been accustomed to throw slops and excrement on the banks of the stream, where they would be sure to wash in with a heavy rain, and where they might get in at other times. On Nov. 9 and 10 there was a heavy rain. Natick is situated three and a quarter miles above the pumping station, where the water is pumped directly into the Sockanossét reservoir, which holds ten or twelve days' supply. I am informed by the city engineer that two or three days might elapse (owing to the volume contained in the mains) before water taken in at the pumps would actually reach the consumer. As ten to eighteen days is the probable incubation of typhoid, the ascertained facts are all in accord with the view that the epidemic was caused by the infection of the public water-supply. But another test was applied. Dr. Swarts[33] had shown that domestic filters are collectors and incubators of the microbes found in the water which passes through them. This fact was made use of, and several filters taken from houses where there was typhoid were examined for the bacilli. The water itself was only partially examined Dec. 1st. Attention was given to the filters because it was thought that they surely would contain the organism of the disease, if it had been in the water, even if it had then disappeared. Two filters were examined by Dr. Prudden, of New York, and the typhoid bacilli found in one. Two were examined by Dr. Ernst, of Boston, and the bacilli found in both. Two were examined by Dr. Swarts, and the typhoid bacilli found in neither. All observers found other organisms characteristic of human fæces.

There is no doubt that the disease which we had here was typhoid. This is shown by the clinical history, the mortality, the post-mortem appearances, and the finding of the characteristic bacilli in the spleen. The cases where the filters were removed were undoubted typhoid. There was no possibility of infection of the filters from the patient, particularly as in every instance they were removed before the patient had had any characteristic evacuations. These facts are a complete demonstration that this epidemic was caused by the pollution of our water-supply by the stools from typhoid patients.

It has been objected that it is incredible that such an enormous volume of water, probably six hundred million gallons per day at that time, could be infected by such a comparatively infinitesimal amount of fecal matter. It is also objected that if the water was at fault more persons would have been attacked.

But these two objections explain each other, for we know by experiment that the smaller the dose of an infective material the less likely is a person to succumb to it. Moreover, as we have seen, facts are not wanting to show that other cities have suffered in just the same way that we have. In 1882 and 1883 Providence suffered severely from typhoid fever, and as we had not at that time the means for thoroughly investigating the epidemic, its cause was not determined; but as it began suddenly October 23rd and caused nearly four hundred and fifty cases between that time and November 17th, when it somewhat abruptly ceased, and as it was general throughout the city, and as the disease was not unusually prevalent in other parts of the State, it is probable that it was due to the pollution of the Pawtuxet water. With the thawing which occurred in March the epidemic again made itself felt in about the same way as in the Fall, and was confined exclusively to the city. In the Fall of 1883 the rest of the State suffered, but the city did not. There is no evidence that our water-supply has been contaminated with the typhoid poison at any other than the times mentioned.

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[27] Ann. d'hyg. Par., 1887, 3. s. xvii. 365.
[28] Jour. de med. de Bordeaux, 1887-8, xvii. 273 *et seq.*
[29] Rev. med. de la Suisse Romande, 1887, p. 378.
[30] Deut. Arch. f. k. Med., xxxix. p. 271.
[31] Deut. Vtljschr. f. öff. Gesundhtspfl., 1886, xviii. 587.
[32] Cincin. Lancet-Clinic, 1888, p. 33.

[33] Trans. R. I. Med. Soc., 1887, p. 138.

For several years Dr. Swarts, our medical inspector, has kept a watchful eye upon our milk-supply, but typhoid fever has in no instance been traced to it. Last year Dr. Swarts found that of three hundred and eighty-nine cases of typhoid in no instance were more than four persons supplied by the same milk man. He found a very different state of things in Bristol last summer. In England it is not unusual to find the source of typhoid fever in the milk. Such instances have occurred in Providence, but as they were before I was superintendent of health I have no record of them.

If the air does not directly infect with typhoid, and if polluted water and milk furnish only a limited number of the deaths from typhoid which occur each year, how are the rest to be explained? It seems to me, from the recently acquired knowledge of this disease, that it is usually caused in somewhat the following manner. The dried spores of the bacillus are carried here and there by the wind or the numberless agencies by which the seeds of the higher plants are distributed, and, like the seeds, these spores take root, as it were, wherever they find a suitable soil. Animal and vegetable matter furnish such a soil, particularly the former. Privy-vaults, cesspools, swill-tubs, decayed wooden sink-spouts, filthy yards, vegetables in the cellar, furnish such organic matter. Fortunately for us this material is largely monopolized by the non-pathogenic organisms of putrefaction. But in the Fall, when the conditions of moisture and temperature are right, the organism grows in certain of these situations which are peculiarly favorable to it, and multiplies enormously. Some of these organisms thus produced find their way into the house and fall perhaps into milk put in the cellar, where it is cool, or upon cold potatoes on the pantry shelf only a few feet from an infected privy, or else, finding their way up the waste-pipe of a refrigerator which discharges on the moist ground or on an open drain, multiply at their leisure on the damp shelves that are rarely washed or aired, and now and then contaminate the custard pie or oatmeal that is put there. The food is eaten without being cooked, the organisms sometimes escape the hostile action of the gastric juice, and we have a case of typhoid fever, which those who have paid little attention to bacteriology would be likely to quote as of *de novo* origin.

Clinical Department.

CASE OF A PEANUT SHELL LODGED IN THE BRONCHUS.

TRACHEOTOMY: DEATH ON THE SEVENTEENTH DAY.

BY J. W. ELLIOT, M.D.

The case here reported came under my care while temporarily in charge of the wards of Dr. Homans at the Massachusetts General Hospital. The notes have been arranged by Dr. Augustus Thorndike, who was then house-pupil.

T. D., a powerfully built young man, entered the hospital on the evening of June 2nd, 1888. Three quarters of an hour earlier, as he was buying a ticket at the Fitchburg Depot, he had accidentally, in talking, drawn into his throat part of a peanut which he was cracking between his teeth. He had had a long fit of coughing, lasting for half an hour. When admitted he was breathing without trouble, but had occasional attacks of coughing, followed by a continuous whistling noise, lasting half a minute, which could be plainly heard in all parts of the room.

Examination showed the respiratory movements of left side of chest deficient, and the respiratory murmur entirely absent. It was therefore evident that the peanut had entered the left bronchus.

Thinking that nothing could be gained by delay I immediately opened the trachea as low down as possible. Violent coughing was excited by tickling the trachea, but the peanut could not be dislodged. Long forceps were repeatedly passed down into the trachea and into both bronchi, but no foreign body could be felt. The difficulties seemed insurmountable in that the very large size of the patient made the working distance exceptionally long and the lightness of the peanut shell made an almost intangible object. The patient was held upside down and the same procedure again failed. Respiration was then found to have returned in the upper lobe of the left lung, so it seemed as if the object had been pushed further down. A large tracheotomy tube was placed in the wound and the patient sent to the ward.

The night after the operation was a quiet one. Patient did not cough much, and breathed easily all through the day. Examination of the chest showed that the respiration had returned throughout the left chest, but was absent (or nearly so) over the lower lobe of the right lung. This showed that the peanut had been coughed out of the left bronchus and had lodged in the right.

At a consultation of the surgical staff it was decided to make no further attempt to extract the peanut shell, but to wait, hoping that it would be coughed out. The tracheotomy tube was removed three days after the operation without difficulty. The larynx was examined by Dr. F. H. Hooper, who found nothing abnormal beyond an inflamed condition of the lining membrane of the trachea.

The patient said that he felt first-rate, and was up and dressed on the two following days. On the next day, however, six days after the accident, he developed a cough with profuse muco-purulent expectoration. There was no dulness, and a few râles could be heard over both sides of the chest, and increased voice sounds over a small patch in the lower right axillary region.

During the next week the patient grew steadily worse; the expectoration became more profuse and very foul. The temperature fluctuated between 102° and 103°. The pulse rose steadily to 150°, and the respiration to 40°. Bronchial râles were heard and felt in abundance over the entire chest. The chest was repeatedly examined by Drs. Fitz, Langmaid, Cutler, and others, and at one time it was thought that an abscess had formed in the lung which could be opened and drained. But even this last hope was finally abandoned, and the patient died on the seventeenth day.

The autopsy made by Dr. Fitz showed that the right bronchus, at the level of its second branch, was plugged by one half of a peanut shell broken off across the constricted middle portion of the nut. There was putrid bronchitis with gangrenous pneumonia; acute pleuritis of left side; atelectasis, etc.

Reports of Societies.

THE ONE HUNDRED AND EIGHTH ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY,

June 11th and 12th, 1889.

The clerk of the weather favored the members of the State Medical Society, gathered in very large numbers at their annual conclave, with two contrasting days, — the former insufferably hot, and the latter tempered with the cooling breeze which brings to Bostonians frequent comfort in summer. Whether because the early summer has caused an unusual leisure among medical practitioners, or because this year's innovation in the method of conducting the meetings proved an influential attraction, the attendance upon the more serious and prosaic exercises was unusually large, the numbers in the surgical section alone exceeding the usual first-day audience of the general meeting, while the papers presented on the second day, to the society as a whole, found a remarkably large, interested, and appreciative audience. There was a change as well in the place of meeting, the Institute of Technology being this year forsaken for the large building of the Massachusetts Charitable Mechanics' Association on Huntington avenue. The sections found accommodation in some of the smaller rooms, while the general meeting was held in a room occupied on Sundays for a Roman Catholic church. The banquet was served in the largest hall of the building. The customary exhibit by the druggists and instrument dealers was conspicuous by its absence, and the distant member, predatory with carpet-bag or overcoat pocket, was obliged to go home empty-handed. The censors' conference has also lapsed into a state of innocuous desuetude.

The initial exercises of the first day of the meeting may fairly be considered to occur at the hospitals, to whose wards and amphitheatres many members, in pursuance of the annual invitation, betook themselves. At the

CHILDREN'S HOSPITAL

Dr. E. H. Bradford resected a piece of a rib and established drainage in a case of empyema, and also, with the osteoclast, fractured both bones in each lower leg for the correction of bow-legs.

MASSACHUSETTS GENERAL HOSPITAL.

At this hospital a large and varied number of interesting cases and operations were presented by the surgeons now on duty and others of the staff.

Dr. H. H. A. Beach operated for the relief of epileptic symptoms by cutting down upon the cicatrix left by a compound depressed fracture of the skull, the lesion having occurred eleven years before. A dural cyst, containing clear fluid, was excised and the cicatricial tissues adherent to the dura mater. The aperture in the bone, left by the injury, was carefully separated from its adhesions for a margin of half an inch from the edge of the bone surrounding the opening. A sharp spicula of bone projecting inward from the anterior border of the bone was removed with the bone forceps.

He also operated for hare-lip and for the radical cure of hydrocele, and amputated a thigh in the upper third for a compound comminuted fracture of the bones of the leg and foot, due to a railroad accident.

Dr. John Homans performed a resection of the knee-joint for tuberculous disease, uniting the bones with a double wire suture; removed a ball which had been imbedded in the tibia for three weeks with a fistulous opening leading to it, and divulsed a firm and unyielding stricture of the urethra.

Dr. J. C. Warren operated for a peri-typhlitic abscess with a history of intestinal obstruction for a week.

Dr. M. H. Richardson performed ovariotomy in a case where there had been a history of a ruptured sac four years before.

The first and last operations described were done in the new aseptic ward of the hospital, in which the members of the society expressed much interest.

Dr. Beach showed several cases as follows: one was a patient with a good result following an excision of the elbow-joint performed one year before for tuberculous disease. There was good flexion, extension, pronation, and supination, the patient being able to earn her living in the use of it. Another was one of recovery from an excision of knee-joint for anchylosis following injury; the operation was done two years ago, and, from having been confined to the use of crutches on account of the useless limb, she is now able to walk about without a crutch or cane, an addition having been made to the heel and sole to compensate for the shortening. Another was one of excision of the knee-joint for tuberculous disease. Although the amount of disease had been extensive, and required a most radical removal of bone and synovial membrane, union had been complete by first intention, only two dressings having been necessary since the operation. Another was a case where complete union by first intention followed the removal of a loose cartilage from the knee-joint, nine days before. Another of knee-joint operation, but for the removal of pus and disintegrating cartilage. The patient, a child of four years, entered the hospital with a tender, swollen joint, having night-cries, spasmodic contractions of the limb, and other evidence of acute disease. The joint was freely opened on both sides of the patella and the cavity thoroughly washed out and drained. He made an uninterrupted recovery and now has very good motion of the joint.

Dr. Beach demonstrated his modification of Hamilton's sponge grafting, also his treatment of severe injuries involving large sloughing and gangrenous masses. He also exhibited the instruments with which, and the patient, a boy of three years and eight months, upon whom, he had performed litholapaxy successfully, the stone measuring one centimetre and a quarter. Not an unfavorable symptom had followed. He was an interesting subject in that he was the youngest patient upon whom the operation had been done in the hospital.

Dr. Homans exhibited a man who entered the hospital three weeks before with a stab of the left side, making a wound four and a half inches long that communicated with the pleural and abdominal cavities, exposing the spleen, intestine, and base of the lung; air entered and escaped with every respiration. The diaphragm was divided for two inches. A coil of intestine protruded through the wound of the diaphragm and presented in the pleural section of the wound. The wound in the diaphragm was stitched with silk and then the outer wound, care having been taken to make the parts thoroughly aseptic. A small drainage-tube was placed in the external wound. The temperature never exceeded 99.5°, and he made a complete recovery.

He also showed a case in which he had performed Macewen's operation for acquired knock-knee in a boy seventeen years old. The deformity caused a separation of ten inches between the heels when he stood erect. After the operation this was so far reduced that he could touch his malleoli in the same position.

Dr. Porter presented a patient who had been the subject of a hip-joint dislocation of the dorsal variety. Dr. Porter reduced the dislocation one year ago before the society, and now showed him, that the members could see for themselves the great improvement that had taken place in all the movements of the leg. The dislocation had existed nearly eight months, and at the time of reduction it was difficult to estimate the improvement that would be likely to follow.

He also showed a little girl upon whom he had operated for extrophy of the bladder by reflecting a broad flap from the abdominal surface and covering its raw surface with two smaller flaps taken from the groin. Perfect union had followed, with protection of the mucous membrane, and there was no longer continuous saturation of her clothing, as the urine was easily directed into a small hard rubber shield which emptied into a soft rubber bag tied to the upper part of the thigh.

He then introduced a patient who had been the subject of double comminuted fracture of the patella. The comminution was so extensive on one side that he opened the joint and wired the fragments. The result was an admirable one, the patient walking about with comfort and being now able to earn his living as an electric engineer.

In addition, Dr. Porter had a case of excellent recovery, with a useful leg, following the operation of excision of the knee-joint for tuberculous disease, and a case of nephrorraphy for floating kidney in a woman who for three years had been the subject of severe pain in the back, fainting, loss of flesh and strength, and various gastric disturbances, pain in the vicinity of the kidney on flexing the body, and at times painful and frequent micturition. The lump made by the kidney was tender and movable. Dr. Porter used six silk stitches through the capsule of the kidney, attaching them to the muscular wound, and six more superficial stitches through the peri-nephritic tissue, which were also attached to the muscular wound. The usual aseptic precautions were employed, but no drainage. Perfect relief to all of her symptoms followed an immediate recovery.

Dr. Warren showed a patient who had entered the hospital with a large fibroid tumor of the uterus, which he subsequently removed by hysterectomy. The symptoms were severe pain, some disturbances from pressure, and excessive flowing. The after-symptoms were slight, the temperature having risen to 101° only once. The patient is now enjoying excellent health and has been relieved in every way.

He then exhibited a patient in whom recovery from tuberculous peritonitis had taken place. for which he had performed laparotomy. There had been chronic abdominal symptoms for more than a year. She entered the hospital with a temperature of 103° and had suffered severe symptoms for a week. At the operation the intestines were found adherent and studded with tuberculous nodules; one cavity in the pelvis contained about half a pint of pus.

Dr. Warren next called the attention of the society to a patient who had been the subject of a large umbilical hernia. He had operated by opening the sac, dissecting the intestine from its adhesions to the sac, which contained a large mass of omentum, the cæcum, and the vermiform appendix. After returning its contents to the abdominal cavity the ring was closed by six silk stitches. A regular laparotomy dressing was applied.

Dr. Richardson exhibited a case where recovery took place from operation for strangulated umbilical hernia, where the gut for a space of six inches was gangrenous. This section he resected, using the Lembert stitch and fine silk to join the freshly cut edges of the intestine. No unfavorable symptom followed. He also showed a case of recovery from the operation of cholecystotomy for a tumor the size of a child's head immediately below the lower ribs of the right side. There had been a history of jaundice and repeated attacks of pain. A straight incision in the linea semilunaris immediately over the tumor disclosed a sac connected with the liver: this was aspirated and three pints of a puriform fluid withdrawn. Six gall-stones were removed from the sac. Two were found in the cystic duct, one of which was pushed forward into the common duct and the other returned to the sac. The greater part of the sac was cut away with the actual cautery and its edge stitched to the abdominal wall. Perfect recovery followed.

Dr. Richardson showed two cases of recovery from operation for extra-uterine pregnancy and one from the removal of foreign bodies from the knee-joint. The latter appeared at the hospital in the Fall, 1887, complaining of the left knee. The joint was opened and a partly ossified cartilage of the size of a half-dollar removed. He made a good recovery and again appeared in about nine months with similar symptoms connected with the right knee. The joint was opened and a cartilage one-third of an inch by two-thirds removed. Recovery followed. Another was found at the examination Tuesday, but as it caused no symptoms operation was deferred.

AT THE BOSTON CITY HOSPITAL

Dr. H. W. Williams removed a cataract under cocaine.

Dr. George W. Gay excised the lower part of the rectum for carcinoma. In this opertaion the tissues were divided in the median line back to the coccyx. The whole of the diseased portion was dissected from the underlying structures with scissors and forceps, a sound being introduced into the urethra to prevent injury. Four inches of gut were removed on the right side, about three inches on the other sides. Apparently the entire growth was removed. During the operation possibly a pin-hole opening was made into the peritoneal cavity. The hæmorrhage was controlled by clamp forceps and packing with iodoform gauze. These were left undisturbed for forty-eight hours and were removed without hæmorrhage. No shock or prostration followed the operation. The patient reacted very well, no stimulation being required, and at present is doing very well.

Dr. Abner Post did internal and external urethrotomy for strictures.

The internal was performed with Otis's divulsing urethrotome for strictures located two and a half and three inches from the meatus. The external for a stricture of the membranous portion of the urethra. Before the operation a No. 6 French sound passed with difficulty; after the operation a No. 17 English steel sound passed with ease.

An operation for compound comminuted, depressed fracture of the skull was done by Dr. Post. The fragments were removed with bone forceps. The dura mater was found lacerated. A small amount of bruised and disorganized brain was removed through the opening in the dura. No symptoms either before or since the operation.

External urethrotomy for deep urethral stricture was done by Dr. Post. Before the operation only a filiform whalebone bougie could be passed into the bladder. After the operation a No. 18 English steel sound passed with ease. The patient now passes over one-half of his urine *per vias naturales*; no uncomfortable symptoms have manifested themselves.

First Session.

At two o'clock on Tuesday afternoon the members present resolved themselves into three sections,—in medicine, in surgery, and in obstetrics and gynæcology, which met each by itself.

SECTION IN SURGERY.

Dr. D. W. Cheever, of Boston, Chairman; Dr. M. D. Clarke, of Haverhill, Secretary.

The subject chosen in this section was "Aseptic and Antiseptic Surgery," and was opened by the reading, by Dr. Burrell, of a paper entitled

SOME PRACTICAL EXPERIMENTS IN THE DETAILS OF ASEPTIC SURGERY,

by Greenleaf R. Tucker, S.B., and H. L. Burrell, M.D., both of Boston.

The reader began by saying that, although the principles of asepticism and antisepticism were perhaps well recognized, yet it was the belief of the writers that it was only partially appreciated that sources of contamination exist in every detail of operative work. They had therefore undertaken a series of experiments in reference to the sterility and non-sterility of instruments, dressings, etc., without any attempt to identify any of the bacteria found. (*a*) In regard to the operating room, it had been shown that microbes exist in air and on walls, etc., and that by sweeping, dusting, and moving furniture the number in the air is increased for the time being. So that, besides sweeping and dusting, all movables should be taken out, floors mopped, and walls sponged. (*b*) As to the surgeon, the main question was as to his hands. Experiments proved that by the ordinary superficial method of washing them and dipping in an antiseptic solution germs are left, but, if one spends a sufficient length of time in the mechanical washing, then washes with ether, and then immerses them for two or three minutes in the mercurial solution, practical asepsis of the hands will be gained. (*c*) Actual experiment on an arm cleansed with water, shaved, washed with ether, rubbed with a mercurial solution, and dressed with an aseptic absorbent dressing, proved that the surface of the skin (*i.e.*, the superficial operative field) can be made aseptic. (*d*) Instruments taken from glass cases in a well-ordered hospital were found to be covered with germs, as were also those which had soaked for an hour in a 1 : 10 carbolic solution. The experiments with hydronaphthol were not conclusive. The writers recommended, as their conclusions, until a readier method was devised, the baking of instruments (which requires intelligent supervision) at 150° to 160° C. for an hour as a certain method of sterilization. (*e*) Heat and steam at high temperatures and the action of corrosive sublimate were found destructive to sponges. The best method at present seems to be prolonged immersion in a solution of carbolic acid or hydronaphthol, or, better, to use Elliot's sponges, of Berlin worsted enclosed in gauze. As to ligatures, small catgut, as ordinarily prepared, and silk were found to be always sterile; large catgut, never. The best method seems to be to expose for four hours to a heat which should reach 140° C., then place for a day in oil of juniper, and keep in alcohol. (*f*) For irrigation, a 1 : 2000 solution of corrosive sublimate is needed before operation; during the operation and afterwards 1 : 10,000 should be used. Irrigator nozzles were found infected and should therefore be kept unattached or immersed in a sublimate solution, 1 : 1000, ready for use. (*g*) Drainage-tubes taken from a jar where they had been immersed in a carbolic solution, 1 : 20, were found sterile. As to dressings, experiment showed that gauze baked for several hours at 150° to 160° C. was sterile, while simple iodoform or boracic gauze was non-sterile. Baked gauze is therefore to be used, which can be made absorptive by saturating it with a 10 per cent. solution of glycerine and drying, before sterilizing it. In these baked aseptic dressings, however, germs are found, after several days' use, the more abundant the nearer the wound, and which presumably come from sources beneath the dressings. Therefore there is needed a dressing that is germicidal as well as aseptic, and this is best attained by using the aseptic dressing, containing glycerine, moist, and charged with corrosive sublimate.

In conclusion, the writers' experiments showed to them that, while it was difficult to gain absolute asepticism, yet practical asepticism could be had by attention to details; that there were practical methods of sterilizing the hands, the operative field, the instruments, ligatures, sutures, and dressings, to which clinical evidence also bore witness; and that the surgeon could and should operate with thoroughly cleansed hands and thoroughly cleansed instruments upon a thoroughly cleansed patient.

The discussion of the subject was then opened with a paper by **Dr. Frank K. Paddock**, of Pittsfield, which, in his absence, was read by the Secretary. Dr. Paddock believed in the general adoption of antiseptic principles. While, undoubtedly, fresh wounds need bathing only in sterilized water, yet there was room for the use of antiseptic agents in rendering aseptic the patient, the room, the surgeon, etc. He emptied the room as far as possible before cleansing it. He scrubbed the skin and then bathed it in sublimate solution. He used, for small ligatures, catgut in 10 per cent. carbolic oil; for large ones, silk immersed in boiling beeswax containing 10 per cent. carbolic acid. Needles could be rendered aseptic by heating in an alcohol flame. Drainage-tubes should be used in deep wounds. Sponges should be avoided if possible. Instruments, during an operation, should be kept in a 5 per cent. carbolic solution. The surgeon should brush himself carefully, wear an apron with sleeves, use the nail-brush unsparingly, and bathe his hands in an antiseptic solution.

Dr. S. W. Torrey, of Beverly, said that he was not a bacteriologist, and what he had to say was on the practical rather than on the scientific side, and a plea on behalf of surgeons who do not practise in hospitals, especially country doctors, for a relaxation of the rigidness of the antiseptic details of an operation laid down by the extremists, who make us very uncomfortable by pointing us to an ideal no man can attain to. While the results seem to suggest the value of chemical antisepsis in large general hospitals, it is yet undecided how far this is requisite outside. Moreover, in the British lying-in hospitals in the years 1789–1800 the death-rate, which had been high, was reduced to 3.2 per 1000; and this was before antisepsis had been heard of. That antisepsis is not an exact science is shown by the fact that it was chosen for to-day's discussion, by the abandonment of many details of Listerism, by the widely discrepant opinions as to the value of the several germicides, dressings, ligatures, etc. If the extreme minuteness claimed by some surgeons was needed to prevent infection, one ought to have sepsis every time one uses a hypodermic syringe without absolute disinfection. Cleanliness, not chemicals, is the *sine qua non* of surgical success. Chemical germicides are liable to cause poisoning. He considered the best means of obtaining asepticism in private practice to be: the dryest, lightest, cleanest room in the house, and the one furthest away from water-closets, drains, or privies; the preparation of the patient, when there is time (some operations *must* be done upon emergency), by a warm bath some hours before the operation, and by local cleansing of the site of operation, with soap and brush and whatever antiseptic the surgeon chooses if the skin is unbroken, with boiled water and possibly the addition of boric acid or chlorinated soda if there is a large absorption surface; the disinfection of instruments in boiling water; the use of absorbent cotton or worsted in various-sized balls covered with cheese-cloth previously disinfected, to be thrown away after once using, instead of sponges; the use of hot water or torsion, instead of ligatures, to check bleeding, whenever possible; the sealing of wounds by collodion or adhesive plaster unless sutures are imperatively called for; the personal disinfection of the surgeon's hands before operating and before each dressing of the wound; and the use of boric acid, where practicable, if bathing or irrigation or the use of ointment is called for.

Dr. John Collins Warren, of Boston, wished to speak of some of the dangers of antiseptics, following out the line of Dr. Torrey's remarks. The latter gentleman had spoken of the use of boracic acid, but the speaker had recently been looking over the table prepared by Dr. John E. Weeks, New York, which gave the relative value of germicidal agents. In that table boracic acid was said to have no effect whatever in this direction. It would seem that as we seek for drugs that are safe we recede from those which have germicidal action. In spite of this theoretical result, however, the speaker was in the habit of using boracic acid in solution and in powder very extensively in washing out the bladder, in flushing cavities, and sometimes in dressing wounds.

Chemists have succeeded in making gelatine cultures from nearly every kind of dressing which has been put on the market. It would also appear that the germicides in these dressings lose strength after a certain length of time. Dr. Weeks found that gauze which contained, when fresh, 2.6% of carbolic acid, three months later had but 1.4%. According to the chemist, carbolized oil, which makes a very pleasant dressing, has no germicidal action whatever. If this is so, then the one drainage-tube put up in this medium is open to suspicion.

Carbolic poisoning the speaker considered a very important subject. Hospital surgeons are getting to recognize more cases than formerly, and it would not be strange if many cases occur, without being recognized, in the practice of those who are not so familiar with the symptoms. Several cases had occurred recently in the observation of the speaker. The urine had been noticed to be black, but the significance of the condition had not been understood. In one case of burns involving a small area the absorption of the acid seemed to be due to the frequent application of the carbolic salve by members of the family. In this case the symptoms ceased immediately when the salve was discontinued.

We are learning to use weak sublimate solutions, so great is our confidence in the germicidal power of this agent, and yet they may cause unpleasant symptoms. In the case of a crushed wound of the thigh, in which a moist dressing of sublimate was applied, there supervened a good deal of digestive disturbance, with diarrhœa. On changing the dressing these symptoms ceased. In the use of these drugs we must learn to exercise the same caution as in the application of other powerful agents, such as opium. Another important quality of the sublimate is its liability to be changed into the inert mild chloride. The bichloride gauze obtained from the shops is hardly trustworthy since there may have been a certain amount of change to the inert form. The chloride may also change into the albuminate. It has been found that if equal parts of blood and a 1:2000 solution of corrosive sublimate are mixed together, micro-organisms will thrive in the mixture as well as in pure blood. Perhaps this formation of the albuminate would explain why the internal use of mercury does not give better antiseptic results. Sternberg reckons that three and a half grains of bichloride would be sufficient to render the blood of an adult aseptic. One grain is about as much as we dare give in twenty-four hours, but owing to the cumulative effect of the drug we may perhaps give enough to have some effect.

Clinically, most surgeons are pleased with the action of iodoform; but it has been found that germs will grow in the midst of the iodoform powder. Just how we can reconcile these apparent differences is not clear. The speaker considered that cases of iodoform poisoning to a mild degree are probably more common than is generally suspected. Some cases in his own experience, which he at the time supposed were instances of insanity, he now thinks may have been examples of this sort. One case proved so severe as to lead him from that time to give up the use of iodoform altogether. It was a case of operation on a ruptured perineum, where a large amount of the powder was applied by the various attendants. At first it produced a dermatitis, which extended down the thigh for a considerable distance. The patient remained in a delirious condition for six or seven weeks, but finally recovered.

The speaker did not believe that we could get along with boiling water without the use of any antiseptics. Some years ago he had tried this agent, but the results were not satisfactory, probably, as he now considered, because he was not careful enough in cleaning his hands and instruments. He would use antiseptic materials to supplement the personal element, so to speak. That is, we cannot be all the time careful enough, and the antiseptics are used to cover the errors.

The speaker made a very important point of what he would term the "dose" of the poison. We do not get abscesses following the use of the subcutaneous needle, because the dose is insufficient. He referred to the article by Watson Cheyne in a recent English journal. The germ, as well as the germicide, has to have the requisite strength in order to produce its effect.

Cheyne experimented in the following way as to dose. The material being diluted so as to obtain a rough estimate as to the number of bacteria under the microscope in a given quantity of the liquid, a certain amount was then injected into animals. The Proteus vulgaris was the organism selected and was injected into the muscular tissue of rabbits. A dose of 225,000,000 was rapidly fatal, a dose of 56,000,000 caused extensive abscess and death in six to eight weeks. A dose of less than 1,800,000 produced no effect.

The necessity of cleanliness might be illustrated by the fact that the wash-list of the materials used in a single operation which he had performed recently with perfect healing, a cancer of the breast, consisted of five dozen pieces. The regardless use of materials will perhaps accomplish a good deal.

Dr. Arthur T. Cabot, of Boston, believed that antiseptics should be used rather in the preparation of the instruments and the operative territory. This preparation being completed, we go ahead, much as the old surgeons used to, with the added care that the instruments do not come in contact with articles which have not been rendered aseptic. The ordinary way of surrounding the wound with towels is sufficient for this purpose.

The wound having been made, the question of treatment for the best healing becomes very important. In order to take right steps in this direction it is well to look at the prime factors which enter into putrefactive changes. The first is heat. Putrefaction does not take place at low temperatures. The second is moisture. In the treatment of wounds we cannot get rid of the element of heat, but we can do a great deal in the way of removing the moisture from the wounds, and that is one of the most important steps to be taken. The wound should be rendered dry by squeezing, sponges placed over it, and pressure applied constantly until the dressing, which has been prepared beforehand, is quickly put in position and bound on. If this is done there is no opportunity for the collection of fluids. If the bottom of the wound can be tightly closed by sutures, so as to leave no chance for collection of serum, the putrefactive process cannot take place. One great use of the antiseptic powder arises from the fact that it dries the wound, thus favoring first intention. The good effects which surgeons have seen after the use of iodoform powder may be partially explained in this way.

Dressings should be dry and have great absorptive power. Excellent results have been obtained from almost all of a great variety of materials, for they all have the quality of taking up moisture. If the speaker should have to give up either one of the two,— the antiseptic washes or the dry treatment of wounds,— he would rather give up the washes, and he would expect the results to bear him out in that position. A great hue and cry has been raised lately about antiseptics, and some gentlemen have boasted of their success in abdominal surgery with the use of simple water. The speaker had seen the eightieth laparotomy performed in this manner by Dr. Bancroft, of London. The contents of the cyst escaped into the peritoneal cavity, and the whole cavity was flushed with water drawn from the tap. The recovery was without the slightest rise of temperature. Such cases as these may be explained by the fact that the later researches of Dr. Watson Cheyne, to which Dr. Warren alluded, show that the peritoneum is by no means as sensitive as has been supposed, but that, on the contrary, it takes a pretty good "dose" of septic material to cause any harm. If the same treatment were used in wounds where there are large cellular spaces, or where the absorptive power is not so great, perhaps the results would cause those who are so enthusiastic over the water from the tap to open their eyes.

The speaker thought that many cases of carbolic poisoning were unrecognized because the dark color of the urine does not come on, frequently, until an hour or two after it is passed. He also alluded to some tests which he had made a few years ago in regard to the efficacy of certain antiseptic solutions. Among other results he found that chlorinated soda, one part of the liquor sodæ chlorinatæ to ten of water, was almost equal in efficiency to a 1:40 solution of carbolic, and he frequently uses it now wherever he fears the bad effects of the latter.

Dr. Cabot wished to call particular attention to the use of subcutaneous injections of carbolic acid in the case of carbuncle. In a case of large carbuncle on the upper lip he injected a solution which contained one part of the acid to six of glycerine and two of water. Relief from pain, which had been intense, was immediate, and complete recovery occurred rapidly. Three or four injections were used. If this case had been treated in the usual way with incision, or if it had been left alone, the speaker thought that very much greater deformity would have resulted. In this case the scar was hardly noticeable.

Dr. T. L. Perkins, of Salem, had been expected to discuss the subject, but was called away.

Dr. O. H. Everett, of Worcester, referring to the work at the Worcester City Hospital, said that the average detention of a surgical case in the hospital for the past year had been nineteen days, while before the introduction of antisepsis it was twenty-three days. Wounds are washed thoroughly and then bathed with a sublimate solution. The surgeons' hands are cleansed in the same way, each having his own nail-brush and nail-cleaner. Sponges are not used, but instead sublimate or hydronaphthol gauze, which is also used for dressings. Irrigation during the operation is practised. Catgut is used for ligatures, soaked in sublimate solution, put through turpentine and kept in absolute alcohol till wanted. He had had trouble only with large-sized gut. Silk had caused suppuration. Rubber drainage-tubes were used, kept in hydronaphthol solution. For sutures he used black iron-dyed silk, soaked at the time of operation in hydronaphthol solution. Instruments are treated with the same solution, after being put for a few minutes in very hot water. The hydronaphthol solution is prepared by adding three drachms of a 20% solution in alcohol to five pints of hot water. It is antiseptic, non-poisonous, harmless to instruments and hands. After operation the reader dusted the wound with iodoform, then applied sublimate gauze, with absorbent cotton and a roller bandage. A solution of chloral hydrate had been used in the hospital with considerable success. It was very grateful to the hands, and it was kept conveniently near for use on that account alone. The reader had had marked success with chronic ulcers of the leg by making the leg aseptic, covering the ulcer with oiled silk soaked in sublimate solution, then layers of wet and then of dry sublimate gauze, absorbent cotton, and a roller bandage.

Dr. G. DeN. Hough, of New Bedford, was in the habit of preparing the patient the night before, if possible, by washing with soap and water and with a sublimate solution, scrubbing and shaving the field of operation and covering it with a wet carbolic or sublimate dressing, to be left on until time of operation. The surgeon's hands and arms should be washed and scrubbed with soap and water for five minutes and with a sublimate solution for three minutes. The operating room in the hospital is disinfected with sulphur, and everything in it washed with a sublimate or carbolic solution. The instruments are baked for half an hour before use, or boiled in a carbolic solution for twenty minutes, or both, and then immersed in a saturated hydronaphthol solution. In private practice, the reader used new sponges for every operation, washed and kept for twenty-four hours in a sublimate solution with ten per cent. of glycerine. In hospital practice sponges are kept in a carbolic solution two weeks before use; then washed, bleached, rinsed, and returned to the solution. It is not certain that these are aseptic. For sutures and ligatures he uses wire sterilized by boiling in carbolic solution, silk sterilized by boiling and keeping in a sublimate solution, catgut scrubbed with soap and water, rinsed, soaked twenty-four hours in a sublimate solution and then as long in strong alcohol, and preserved in the latter or the latter sublimated. Even then it is not certainly aseptic. For dressings, he uses sublimated gauze and sublimated paper wool, sometimes acetate of alumina or iodoform gauze. During the operation and afterwards, sublimate irrigation is practised. It is important to thoroughly obliterate all cavities and to apply dressings so that no movement of the patient can separate them and allow the access of air to the wound. As few hands as possible should touch wound, instruments, dressings, or sponges. In three hundred and four operations no wound infection had developed, suppuration has occurred but twice, and then from an avoidable cause, and primary union has been the rule, even in the treatment of abscesses.

There were a few brief remarks by others, after which **Dr. J. C. Munroe**, of Boston, exhibited some models made of a new material, capable of being cut, flexible, with a surface for oil or water colors.

(To be continued.)

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

Regular meeting, Monday, February 4th, 1889. Dr. S. W. Langmaid in the chair.

Dr. E. O. Otis read a paper on

CREOLIN; WITH SPECIMENS OF CREOLIN MATERIAL.[1]

Dr. Swift asked the reader the difference between creolin and phenyle.

Dr. Otis replied that he had given the analysis of creolin but did not know the analysis of phenyle, and could not give the difference between the two.

Dr. Swift said they resembled each other very much in appearance, odor, and in their mixture with water.

Dr. Farlow asked whether the reader had used creolin as a spray in any particular solution.

Dr. Otis said he had used about a 2% solution as creolin vapor in one case of phthisis. It works perfectly well. It is vaporized with compressed air.

Dr. Conant said: "I went on duty at the Dispensary at the conclusion of Dr. Otis's service, and at his request continued to use creolin. I gave it a pretty fair trial then and was not very favorably impressed with it. I have used it several times since and think the more I use it the better I like it. I was struck with its similarity to phenyle, but there are one or two differences. The same strength in solution is much stronger as regards its odor. When you inject it into a pus cavity you don't get that ropey consistency as it runs out. I am told it is practically the same thing as phenyle, but don't know myself. It has the same appearance and acts much the same way; and the wounds dressed with creolin respond in somewhat the same way as those dressed with phenyle. I have not been able to detect any very great difference except the two mentioned. It seems to me it does act a little better than phenyle in healing up a discharge of pus. I have had one case where there had been a very large abscess, and I used first a solution of (1 to 3000) corrosive sublimate, with practically no result whatever; then I tried phenyle, with no result; and then I resorted to creolin. It may be said that by that time the pus cavity was nearly at an end, but certainly soon after using creolin the cavity diminished very much, and after using it less than a week there was practically no discharge whatever; and I found that true in a number of cases of copious discharge of pus. I think I like it better for that form of wound where you get discharge of pus than any other.

Dr. Allen: In addition to the cases that I treated at the Dispensary I have used it in one case only, and that was a very obstinate case of chronic urethritis, which for about a month has been under treatment with irrigations of ¼% solution creolin, and I have examined once a week with the endoscope and the appearance of the mucous membrane has been changing quite rapidly. First, instead of having the appearance of livid chronic inflammation it became quite bright, rosy red, and since then has been gradually fading out, so that the last time I saw it it was quite pale, and it seems to be working very well and the discharge diminishing quite rapidly too.

Dr. Langmaid: The use of this creolin has been spoken of in connection with disease of the naso-pharynx — rhinitis, etc. It is certainly, according to Dr. Otis's report, very irritating to the mucous membranes, and so is phenyle, and it seems to me its use should rather be restricted to chronic cases which need decided stimulation, and should not be continued too long. I don't believe in the long-continued use of irritants to the mucous membrane of that region. Sometimes, I think, the disease so treated is perpetuated. I have had no experience myself with the use of it.

Dr. M. H. Richardson reported

THREE SUCCESSFUL CASES OF TRACHEOTOMY FOR FOREIGN BODIES IN THE LARYNX.[2]

Dr. J. W. Elliot reported a case of

PEANUT SHELL LODGED IN THE BRONCHUS: TRACHEOTOMY; DEATH ON THE SEVENTEENTH DAY.[3]

Dr. Buckingham asked whether, in looking up these cases, there was any record made of any attempt to remove the foreign body by inverting the child.

Dr. Richardson thought a successful attempt had been made in one of the cases that he had found, but was not certain.

Dr. Putnam, of Chelsea: I think Dr. Richardson has covered the whole case. I don't think of anything to add except that I was quite able to examine the larynx with the laryngoscope and could see no foreign body, and I am thoroughly convinced myself that it must have been just below the cords in the space posterior. The operation, I am happy to say, was successfully performed and the result gratifying.

Dr. Driver: My only experience was with a child who swallowed a shirt button and retained it five days. The child had at first a violent attack of dyspnœa and cough and then became quiet. There were only attacks of dry cough, paroxysmal in nature. Preparations were made for tracheotomy if any emergency arose. On the fifth day, after a violent paroxysm of coughing, the button was expelled in a mass of lymph.

Dr. Farlow said: At the Dispensary I have been consulted for children brought in with a history of having swallowed a fish-bone, of not having coughed up anything, and yet nothing could be seen. I have thought that some of these small bones cause disturbance, but are capable of absorption.

Dr. M. H. Richardson: None of the cases I have seen or looked up have been of that nature. The symptoms have been so urgent that there was not time for the foreign body to be absorbed. Of course metallic bodies, iron bodies, might gradually rust away. In the case at the hospital where dry beans or peas were inhaled the swelling which followed made removal very much more difficult. I don't think I saw a single case where it could have been absorbed. One of the extreme cases of foreign bodies in the larynx was that of the drunken sailor, who swallowed a very large number of jack-knives — five or six one day and ten or fifteen the next, and died at the end of one year, and knives were found all through the alimentary canal in different stages of erosion.

Dr. Norris: I remember some twelve years ago, in East Cambridge, one of our officers eating his Fourth of July dinner of green peas, and getting one lodged in the larynx, as we had reason to believe. He had violent paroxysms of coughing during the next ten days, and at times dyspnœa by day and by night, which seemed very great and very threatening. At the end of ten days he coughed up a green pea from the larynx, covered with gelatinous mucus.

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[1] See page 599 of this Journal.

[2] Publication reserved.

[3] See page 607 of this Journal.

Dr. Munro asked Dr. Elliot how low in the division of the bronchi the peanut shell was found in his case.

Dr. Elliot: The right bronchus, at the level of its second division, was found plugged by one-half of a peanut shell.

Dr. Munro: I asked because when I was house-officer at the hospital, in cases of diphtheria where strangulation occurred from inspissated mucus in the bronchi, I frequently averted sudden death from dyspnœa by passing the tracheal forceps: I could feel the plug and extract it and relieve the symptom. I didn't know but it could be done in this case. It was easy to find the way into the bronchus some inches and no difficulty in feeling any foreign body there.

Dr. Elliot: The foreign body probably did not entirely obstruct the breathing. The air could get through, as you heard a murmur all over the chest, but gradually you heard râles. That suggested that the thing was there, that it irritated the bronchi, and that a pneumonia was gradually developing. There was no lack of air so far as the secondary plugging went. The first night it was plugged, and I practically did dislodge it by pushing it down. I knew where it was, but it was so light I had no sensation of touching anything. I didn't have a very good instrument.

Dr. M. H. Richardson: I would like to make one remark in regard to what Dr. Putnam has said. I have no doubt that that safety pin was below the vocal cords. The length of the pin would make it below the cords. Then I don't think the child would have had any voice whatever, so long as that pin was wedged in between the cords. In answer to Dr. Elliot, about touching the bifurcation of the trachea: sometimes it is very easy indeed to touch the bifurcation without pulling up the trachea. On the subject I have been using lately it was very easy indeed without pulling up the trachea; so that I think subjects vary from the interclavicular notch to the bifurcation as they do in other respects. I would like to ask Dr. Langmaid if he will speak of the reflex laryngeal symptoms that sometimes follow the lodging of a foreign body below the larynx. I think in the first case he thought the orange seed might have been lodged in the bronchus somewhere, and these symptoms were reflex.

Dr. Langmaid: If Dr. Richardson will excuse me I will speak of his cases and similar ones first. These cases are extremely interesting and very practical. Such cases are likely to happen to any-one — surgeon, general practitioner, or specialist. I will mention one case which was operated on by Dr. Warren at the Massachusetts Hospital. The case was brought to me by Dr. Marion, of Brighton, with the history of the child having had a half of a dried chestnut in the mouth, which had suddenly disappeared. Intermitting dyspnœa took place. I examined the child, and whenever the child would cough I could see the chestnut — white body, very hard, rounded — which came up against the vocal cords and remained there a certain length of time until the air perhaps had escaped by the side of it. I asked Dr. Marion to take the child to the Massachusetts Hospital and call on Dr. Warren. He did so, and I immediately followed to the hospital. Dr. Warren operated and the chestnut was removed. One interesting point Dr. Richardson has referred to: after the incision was made, ineffectual attempts were made to get at the chestnut, and then the method was adopted which Dr. Richardson has recommended, — that some one should be on the watch with instruments to catch the body when it presented at the tracheal opening. In a fortunate moment I got it. Whether it was too large to go into the trachea I don't know; a smaller body might have been sucked in and the operation have been useless after all.

With regard to what shall be done: we must go into the history of these cases. Now a great many of these accidents have occurred. Dr. Wise (?), of Richmond, has collected one thousand cases. They are scattered all through throat literature. The conclusion of all that has been written I believe is that tracheotomy is the thing to be done, and one must not wait too long, neither need one be perfectly sure that the foreign body is there. It is enough that you get a history of a foreign body disappearing and intermitting dyspnœa. Where there is intermitting dyspnœa there is the hope that spasm has been caused from some irritant and that the body no longer exists in the air passages. In my opinion that ought not to prevent the comparatively simple operation of tracheotomy; and it was for that reason, and knowing how fatal the cases were in which the foreign body had been sucked into the bronchi, almost universally fatal, and that the probability was that this intermitting dyspnœa in the case was owing to the orange seed in the trachea or larynx or air passages, I strongly advised that operation to be done.

With regard to the tube: Dr. Richardson has spoken about the removal of the tube. In all of these cases it was impossible to remove the tube at once. I wonder if it would be justifiable to make longer efforts to keep the tube out and close the trachea. I think some of us who have attempted to remove the tracheotomy tube inserted for diphtheria have found, that although asphyxia seemed imminent when the tube was removed, still by persistent effort the glottis was made to open and respiration was carried on. It certainly must add to the dangers of pneumonia to leave the tube in. However, one is so glad to get the foreign body out, and the risk of leaving the tube in is so small in comparison with leaving the foreign body in, that one would be tempted to leave the tube in sometimes.

Dr. Richardson emphasizes the fact that it was not known where this orange seed was. Cases, I think, are reported of foreign bodies lodging in the ventricles, — for instance, nickel cents, — so that there is very great tolerance to a foreign body established after a certain time, and how tolerant the larynx may be is shown by my own case, that Dr. Richardson has referred to, where a pin was in the air passages for two years and a portion of that time in the right vocal cord, because the ulceration I saw was caused by the presence of this very long, old-fashioned brass pin, and when it protruded afterwards it was removed with the greatest difficulty, and only by using a very large pair of heavy forceps. The voice was fairly good, no dyspnœa after the pin had first been swallowed. Where it had been all these two years, except for the last two weeks when it was known to be in the cord, I can't say.

I should say that wherever there is strong probability that a foreign body has been drawn into the air passages and there is intermitting dyspnœa — if there was persistent dyspnœa tracheotomy would be done anyway — I should advise tracheotomy as quickly as possible.

I need not say anything with regard to how successful these cases were. To find such foreign bodies, extract them, and cure the children were great triumphs, it seems to me, and showed the justice and wisdom of the operation.

Dr. M. H. Richardson: I should like to say, in regard to the possibility of closing the tracheal wound, that I have had that same experience Dr. Langmaid speaks of in removing the tracheal tube in case of diphtheria, and I know it is always rather alarming a while, but if you persist the respiration gets to going; but in this case, on taking out the tube the obstruction was almost total, and I had a feeling of great relief in being able to get the tube in again before the child strangled. It seemed to me it was impossible to leave out that tube. I say that, knowing that we always have that difficulty in the removal of the tube sooner or later.

Dr. Hooper showed several specimens of naso-pharyngeal tumors.

Dr. C. M. Green showed what was apparently a membranous cast of the uterus.

AMERICAN LARYNGOLOGICAL ASSOCIATION.[1]

ELEVENTH ANNUAL CONGRESS, HELD IN WASHINGTON, D. C., MAY 30, 31, AND JUNE 1, 1889.

Afternoon Session.

Dr. John N. Mackenzie, Baltimore, read a paper on

SOME POINTS IN THE PATHOLOGY AND TREATMENT OF DISEASES OF THE NASAL PHARYNX.

The following conclusions were presented: —

1. The nasal pharynx is, in quite a large proportion of individuals, exceedingly sensitive to reflex-producing stimulation.

2. The areas chiefly involved are the posterior portions of the turbinated erectile tissue, and various points along the upper and posterior portions of the nasal pharynx.

3. In consequence of this extreme sensitiveness, a local pathological process which in many persons would give rise to no reflex neuro-vascular changes may awake a host of neurotic phenomena, referable not only to the region primarily involved, but also to other and even remote organs of the body. These may include cough, asthma, and various neuralgic affections; or the local structural lesion may be the starting point of various sympathetic affections of the respiratory tract.

4. That these classes of naso-pharyngeal neuroses are explicable on the same general principle laid down in the article on neuroses of the nose; and the pathology of the nasal and post-nasal affections is therefore one and the same.

5. That the treatment should be carried out according to the general directions laid down in the article just mentioned.

6. That when morbid processes originate in the pharyngeal tonsil attention should not be directed to the bursa alone, but an endeavour should be made to extirpate the tonsil as far as possible in its entirety.

7. That while a favorable prognosis cannot be safely predicted by treatment of the bursa alone, extirpation of the pharyngeal tonsil often affords a most favorable prospect in long-standing cases of post-nasal trouble.

Dr. D. Bryson Delavan, New York, read a paper entitled

OBSERVATIONS UPON THE CONDITION KNOWN AS ADENOID HYPERTROPHY AT THE VAULT OF THE PHARYNX, AND THE METHODS USED FOR ITS REMOVAL.

A case was described in which, with each acute attack of catarrhal trouble, there would be enlargement of the adenoid tissue of the vault of the pharynx, forming a large tumor. When the attack passed away the hypertrophy disappeared.

The author then referred to the methods of operation and the accidents which might occur. As the operation was attended with considerable pain, he suggested the employment of anæsthesia. He had in a number of cases employed chloroform with satisfactory results, the object being to avoid the profuse mucoid secretion which is apt to follow the use of ether. When chloroform is used the operation is performed with the patient on his back.

DISCUSSION.

Dr. F. H. Hooper, of Boston, reported a case of a young lady who came to him with acute coryza, and in whom he found a large-sized adenoid of the vault. After the attack subsided, the adenoid almost entirely disappeared. In order to avoid error, the post-nasal probe should be always used. With it conditions not apparent to the eye may be recognized. He had never seen serious hæmorrhage follow operations for the removal of this tissue. In operating he first removes all that is possible with the post-nasal forceps and completes the removal with the finger-nail. He had never used chloroform. The amount of secretion after the use of chloroform varies very much in different cases.

Dr. Harrison Allen, Philadelphia, advocated the use of the finger as a means of detecting these post-nasal affections. To examine the case thoroughly requires the use of an anæsthetic. In the treatment of adenoid hypertrophy, it is better to remove all the diseased tissue at one sitting under ether, than to remove it in portions at different times.

Dr. J. C. Mulhall, St. Louis, held that for practical purposes the pathology of the pharyngeal tonsil was exactly the same as that of the faucial tonsil. In operating, he had applied cocaine thoroughly to the pharyngeal wall and soft palate to avoid the disagreeable sensation caused by the scraping of the forceps against the healthy pharyngeal wall, and had succeeded very well.

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[1] Continued from page 588.

Dr. F. I. Knight, Boston, related a case of acute hypertrophy of the faucial tonsil in which the surgeon performed tracheotomy preparatory to removing the tumor. When he came to operate, he found that the growth had disappeared.

Dr. Wm. E. Casselburg, Chicago, referred to the importance of thoroughly eradicating these growths. In two cases in which portions of the mass had been left, the reflex symptoms, while greatly lessened, continued to recur. In two cases he had attempted to use the mirror during operation. To do this he pulled the soft palate forward by two rubber bands passing through each nostril. In one case he succeeded to a certain extent, but in the other failed. This procedure, however, greatly facilitated the operation. In order to prevent the passage of blood into the larynx he was in the habit of bending the head forward at intervals in order to allow the escape of the blood.

Dr. J. N. Mackenzie, Baltimore, as a rule operates without anæsthesia, removing a portion of the mass every day or every other day, continuing the operation for a week or ten days. He had seen very little pain from the operation. There is one point in regard to the nature of this so-called adenoid. He had examined a number of these growths under the microscope, and they do not differ from papillomatous growths. There is also in addition a true adenoid growth: this is more difficult of removal than the former.

Dr. F. H. Hooper, Boston, read a paper on

EXPERIMENTAL METHODS OF STUDYING THE ACTIONS OF THE INTRINSIC MUSCLES OF THE LARYNX.

The author exhibited the apparatus which he had employed in studying the effect of stimulation upon the internal thyro-arytenoid, the lateral crico-arytenoid, and posterior crico-arytenoid muscles. The larynx of a dog is quickly excised and the mucous membrane removed, and the muscles subjected to electrical stimulation.

Dr. F. I. Knight, Boston, read a paper on

DYSPHONIA SPASTICA.

The speaker briefly reported the four cases of this affection which he had seen in the last seven years. He regarded the condition as rare. There is probably a spasmodic action of the muscles of phonation or respiration, or both, giving rise to a high-pitched, jerking voice. The prognosis is unfavorable. The object of the paper was to elicit reports of other cases.

DISCUSSION.

Dr. G. W. Major, Montreal, had seen one case of aphonia spastica and two cases of dysphonia spastica. In none of the cases was benefit obtained by treatment.

Dr. S. W. Langmaid, of Boston, had reported one case in which treatment was unsuccessful. The patient, when he had to use his voice, prescribed for himself a little whiskey, and this answered temporarily. There seems to be no change in the voice since the affection first came on, fifteen years ago.

Dr. D. Bryson Delavan, New York, said that in one case coming under his observation the patient was able to talk tolerably well after fortifying himself with a stimulant. This patient seemed to improve under local treatment to the larynx and vocal training, but the treatment could not be continued.

Dr. C. E. Bean, St. Paul, had seen one case two years ago. Various methods of treatment had been employed without benefit. The voice is now the same as at the commencement.

Dr. Rufus P. Lincoln, New York, read a paper on

RECURRENT LARYNGEAL GROWTH.

The patient had come under the care of the late Dr. Elsberg twenty-four years ago. Dr. Elsberg first operated by the intro-laryngeal method, but could not remove the growth. Twenty-two years ago he did laryngotomy and removed the growth. The microscopical examination made at that time was unsatisfactory. There was no further trouble until a short time ago, when the growth recurred. Dr. Lincoln recently removed the tumor, which on microscopical examination proved to be a papilloma.

Friday — Second Day — Morning Session.

Dr. T. Amory De Blois, of Boston, read a paper describing

SOME OF THE MANIFESTATIONS OF SYPHILIS OF THE UPPER AIR-PASSAGES,

and exhibited drawings showing the conditions which he had found.

DISCUSSION.

Dr. F. H. Bosworth, of New York, referred to the necrosis of bone which occurs in syphilitic ulcerations. He did not believe that syphilitic ulcerations extended from one part to an adjacent part. Such ulceration is due to the breaking down of a gummatous deposit, and does not extend beyond the limits of the original gummatous deposit. The necrosis of the bone he held to be due to the interference with nutrition of the bone caused by the original deposit, and that after the breaking down of the gummatous infiltration has taken place, the ulceration is kept up by the necrosed bone, and treatment should therefore be directed to this point. He agreed with the reader of the paper that potassium iodide was to be employed until the disappearance of the lesion, and that mercury should be used subsequently. Operative interference should be postponed until the syphilitic disease was well under control.

Dr. C. C. Rice, New York, said that in these cases there was often cicatrization and contraction above the visible adhesions, so that after the adhesions are freed the results as regards phonation and respiration are not what would be expected. This contraction in the post-nasal pharynx requires to be stretched in order to obtain good results.

In regard to operations: in one case where there were adhesions and where there had been no syphilitic manifestation for many years, he separated the adhesions with the galvano-cautery. The ulceration which followed took on an unfavorable character, and continued to spread despite constitutional and local treatment.

Dr. J. N. Mackenzie, Baltimore, protested against the too vigorous removal of diseased bone from the nasal passages. It frequently happens that more is pulled out than is desired, and sometimes from dangerous regions.

Dr. Wm. H. Daly, Pittsburg, objected to the use of the galvano-cautery in tissues of the low vitality of syphilitic tissues. He believed that the galvano-cautery was a much-abused, useful instrument. He felt satisfied that better results could be obtained in the fauces, in the nose, in the larynx, in any operation by using a sharp, cutting instrument and allowing as free hæmorrhage as is consistent with good judgment. The freer the hæmorrhage within certain limits, the more certain is there to be immunity from septicæmia, and rapid union.

Dr. F. I. Knight, of Boston, read a

NOTE ON THE GALVANO-CAUTERY IN THE TREATMENT OF HYPERTROPHIED TONSILS.

This paper was supplementary to one read two years ago. The galvano-cautery cannot be satisfactorily used in young children, and in them the guillotine is preferable. In older children and adults the galvano-caustic point will prove of service. The galvano loop was especially considered. With this the operation can be done at one sitting. The portion removed by the loop does not indicate the real extent of the operation. A portion of the remaining tissue sloughs so that the operation with the loop removes more tissue than that with cutting instruments. There seems to be very little more pain with the galvano loop than with the guillotine. The former operation is, however, more disagreeable on account of the odor of burning flesh.

DISCUSSION.

Dr. T. A. De Blois, Boston, had used the electrolytic needle with good effect. Under cocaine the pain of the procedure is very slight. Half a dozen punctures each day will in a short time produce great diminution. This method is used only in adults. In children the tonsils are very apt to diminish in size without treatment.

Dr. C. E. Sajous, Philadelphia, had frequently used the galvano point, but had to make as many as eighteen or twenty punctures in order to obtain satisfactory results. After the second visit the patient expresses very little objection to the operation. The galvano point is useful in the treatment of enlarged tonsils, especially where the density is not great. Here the cicatricial contraction assists in reducing the size.

Dr. Wm. H. Daly, Pittsburg, believed that in the normal throat no portion of the tonsil extended beyond the line of the half arches, and in abscission of the tonsil our object should be to restore the throat as nearly as possible to its normal condition. This cannot be thoroughly done with the tonsilotome, but the operation must be completed with forceps and bistoury.

Dr. F. H. Bosworth, New York, could see no reason for treating this condition by means of eighteen to twenty punctures, when the whole trouble could be removed in a few seconds by a very simple operation.

Dr. C. C. Rice, New York, believed that there are a few cases in adults where have been frequent attacks of tonsillitis and the tonsils are greatly congested, where the galvano-cautery is of service.

(*To be continued.*)

Recent Literature.

The Nervous System and the Mind: a Treatise on the Dynamics of the Human Organism. By Charles Mercier, M.B. 8vo. pp. xi, 374. Macmillan & Co., London and New York. 1888.

The present work attempts "not to add to the number of observed facts, but to organize into knowledge those that we already possess," and its writer, one of Hughlings-Jackson's favorite pupils, is confessedly a follower of his former master and of Mr. Herbert Spencer. Indeed, a knowledge of the latter author's "Principles of Psychology" is assumed throughout the work. In the opening paragraphs a plea is made for the study of normal psychology in our medical schools as an introduction to the study of morbid psychology or insanity, an introduction as necessary as physiology is to pathology. This is, of course, self-evident, yet our medical schools have not yet accepted it. The present work, therefore, is a study of normal psychology, with especial reference to its relations to morbid psychology, and designed as an introduction to the study of insanity. Such a work is both timely and welcome. Even among the writers on the new physiological psychology there is often no knowledge of insanity, and, moreover, an entire neglect of the information which the study of the diseased mind can afford. The present work should be studied by every alienist. It can hardly be said to be an introductory manual to the study of the mind, for some knowledge of psychology, and especially of Spencer, is almost necessary for a proper understanding of the book; but one who is already familiar with the subject will find much that is most suggestive and full of interest, and much, too, which may lead him to question or dispute.

The author begins by denouncing the proposition of any causal relation whatever between the events of mind and the movements of matter as nonsense, and affirms that it is unthinkable to hold that a molecular change in the nervous system can cause a change of consciousness, or *vice versa*; the two are concomitant, but the link between is probably unknowable. Consciousness, moreover, can be studied only by introspection. This assumption of an immaterial mind forever separate from matter by a fathomless abyss can neither be affirmed nor denied. It is merely the dualism of certain metaphysical schools, about which we hear great argument yet evermore come out at the same door wherein we went. As a matter of fact, in treating of physiological psychology we treat this immaterial mind as it is said Renan did sin — we suppress it; and, after the introduction, even the present author has little to say about it.

The first two chapters of the book are devoted to the physical side of the functions of the nervous system,—the nervous discharge and the nervous resistance. The discharge is due to some external disturbing force which causes a derangement of the atoms of the molecules from a more complex to a more simple order. This is claimed to be mechanical, without chemical change, no decomposition. Such an assumption is untenable, for any change in the atomic arrangement is itself a chemical change, and to assert that the molecules are not decomposed in a nervous discharge is contrary to all belief. The discharge grows stronger by extending to adjoining parts and setting up further discharges, until finally the nervous discharge reaches the muscle. As the tension in the cell varies the discharge meets with greater or less resistance, and this, in part, accounts for the continuance or intermittency of movement. The second section is devoted to the application of these principles to movements, their co-ordination and their inhibition. Co-ordinations in simultaneity are actuated by the cerebellum, and the fibres are probably arranged like the roots of a tree, the single highest centre discharging to subordinate centres, and these again to lower centres, until the centres for the individual muscles are reached, and all contract together. Co-ordinations in succession, however, are actuated by the cerebrum; here the lowest represent strong, simple movements, and the more complex and more peripheral movements, differentiated from them, are represented in the higher and more superficial centres. Space is lacking to dwell further upon the author's admirable treatment of this subject, but we commend this portion of the book to every neurologist.

In the second part psychology proper is considered; and we find chapters on conduct and its mechanism. The third part is devoted to mind, its constitution, thought, feeling, and the classification of feelings. The chapter on thought especially is full of suggestion to the alienist, and adds much to our comprehension of the pathological psychology of mental derangements. The elaborate classification of feelings is an appendix to Spencer's "Principles of Psychology," which made no attempt at such a classification.

Lectures on Nervous Diseases, from the Standpoint of Cerebral and Spinal Localization, and the Later Methods employed in the Diagnosis and Treatment of these affections. By Ambrose L. Ranney, A. M., M.D. Profusely illustrated. 8vo. pp. xiv, 778. 192 engravings and 14 plates. F. A. Davis, Philadelphia. 1888.

It is really a question whether this work should be taken seriously. It "differs radically in arrangement and plan from others published in this department of medicine," and it may also be said to differ radically in merit. The differences in arrangement and plan, however, are not striking. The work is divided into seven sections: one on anatomy and physiology, one on the methods of examining the patient, four on the different forms of nervous disease,—omitting any special section on diseases of the peripheral nerves, — and the last on electro-therapeutics, which contains a number of valuable practical suggestions. Throughout the book, however, the author's statements are inaccurate and untrustworthy. He omits many important subjects, and gives undue space to hypotheses which few accept and which at best are still unproven; among these are Luys' views on the optic thalami and Stevens' theories as to eye-defect, which are discussed at inordinate length. In the paragraphs on treatment static electricity is extolled in the highest terms. In the sections on diagnosis many tables comparing symptoms are inserted, many of which are untrustworthy, and some of which endeavor to differentiate between pathological processes by symptoms due to the location of the lesion.

Much stress is laid upon the illustrations, which are showy and absurd. Colored diagrams, as adjuvants to nature, may be of service in the lecture-room, but here the anatomy of the nervous system is represented almost entirely by colored diagrams of the most schematic sort, like nothing under heaven, in many of which the chief principle of coloring seems to be a sort of barbaric taste for decoration. The pictures are showy, and serve to attract children and fools, but unfortunately the nervous system is not constructed in so attractive and simple a manner. It reminds us of the efforts of a child with a paint box: either the paints give out or the child grows tired. It must be from one of these reasons that the boy with infantile paralysis has to appear in dull black and white, while his pseudo-hypertrophic neighbor is a lovely flesh color. We thank the author for sparing our blushes by the modest fig-leaf; such consideration is rarely seen. When not disguised by color many of the wood-cuts are bad, and some indistinguishable. Old friends rather the worse for wear appear, the worn-out cuts of instrument-makers are freely used, and various pictures are inserted for advertisement.

The book is deserving of thorough condemnation as meretricious, pretentious, and worthless. With so many good works on nervous diseases in the market, the physician who spends either time or money upon this will make a sad mistake.

— At one of the sessions of the International Congress of Medical Jurisprudence just concluded in New York a paper was read by Dr. C. H. Harvey which related to a method of caring for the dead, consisting of treating the corpse to currents of dry air whereby the gases engendered by decomposition are carried off and burned, while the body remains in a permanent state of preservation and need not be thrust under ground, but can be placed in a receptacle more agreeable to think of. A company, it is said, has been formed to introduce the process in large cities.

— Drs. Irwin, Ferguson, and Hance, the New York physicians who performed an autopsy on the body of W. Irving Bishop, while entirely exonerated by the coroner's jury, have been indicted by the grand-jury for making an autopsy without getting the necessary authority so to do. It is said that the district attorney was disposed to let the matter drop, but that Mrs. Bishop, possessed of the absurd idea that her son was alive when dissected, insisted on taking the only revenge possible to her. The penalty for the technical offence is imprisonment for a year, or fine of not more than $500, or both.

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Medical and Surgical Journal.

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METROPOLITAN MAIN DRAINAGE.

After the creation of the Massachusetts Board of Health, twenty years ago, its early efforts, finally successful, were directed toward the establishment of a city Board of Health for Boston, which, in the first year of its existence, ably and energetically seconded the efforts of the State Board to secure a metropolitan system of sewerage to drain the cities and towns lying on the two sides of the Charles River.

The first legislative act, in 1872, providing for a commission of engineers to report plans for the sewerage and water-supply of the Metropolitan District, was open to some reasonable objections and failed from the non-concurrence of the city of Boston. In 1875 a commission of two engineers and one physician was appointed by the authorities of Boston. They reported, in 1876, in favor of an intercepting sewer, discharging at Moon Island, for the district south of Charles River, and another, with its outlet at Point Shirley, for the north side. The first part has been constructed. The second, with some modifications as to course and sewer-outlet, has been reported upon favorably since that time by two State commissions, and finally elaborated in detail by the board with whom the idea originated, namely, the State Board of Health.

A law has also been passed by the legislature, and been signed by the governor, essentially as recommended by the board, creating a Metropolitan Sewerage Commission to construct, maintain, and operate, for the cities of Boston, Cambridge, Somerville, Malden, Chelsea, Woburn, and the towns of Stoneham, Melrose, Winchester, Arlington, Belmont, Medford, Everett, and Winthrop, such main sewers and other works as shall be required for a system of sewage disposal for those cities and towns; and for the cities of Boston, Waltham, and Newton and the towns of Watertown and Brookline another such system; both of which systems shall be in substantial accordance with the plans reported and recommended by the State Board of Health. Very great power is given the commission, for the extensive details of which we refer our readers to the Act of the legislature and to the special report of the State Board of Health, Senate Document No. 2, 1889.

It is difficult to overestimate the importance of this measure, and too great praise cannot be given to the board which so carefully and skilfully arranged its details as to disarm criticism, or rather overpower interested hostility to it, almost from the start. We have not the space to describe it as we would wish. We can only give it our hearty support and state our conviction that, next to the efficient control of infectious diseases, there is no matter of greater sanitary importance now before our community.

The effluent to be discharged into the entrance of our beautiful harbor off Deer Island will naturally be most foul, containing, as it does, the refuse of the large hog-slaughtering establishments, the earlier methods of cleansing it not having proved successful. Perhaps the board's experiments may be more efficacious, and result in chemical or other means of removing from the sewage at least that part most noxious to sight and smell.

MEDICAL NOTES.

— Milwaukee physicians are said to have formed a sort of a league, which at present is engaged in midnight practice in a public square, learning to ride the bicycle, which instrument it is proposed to employ in making night visits.

BOSTON AND NEW ENGLAND.

— A trial for alleged malpractice has taken place during the past week at Cambridge, which has assumed more than ordinary interest among the physicians of the Middlesex East District, since, as too often happens, the defendants were reputable and esteemed physicians in active practice.

The facts as shown at the trial were as follows: Mrs. Peabody, the plaintiff, was delivered in 1887 of her fourth child. Out of four pregnancies she has had but one living child, and in at least three confinements it was found necessary to deliver with forceps.

In her last accouchement she was attended by Dr. J. R. Mansfield, of Wakefield, who, after a tedious labor, called in Dr. P. Sheldon to assist him. These two physicians delivered the patient of a dead child, forceps being employed. A few days after delivery it was found that her urine passed away involuntarily, and on examination a vesico-vaginal fistula was detected. The patient went to the Carney Hospital, where an operation for the relief of the lesion was performed, the os uteri being directed into the cavity of the bladder.

After a few months the patient brought suit for damages against both the physicians who were present at her confinement. Gen. B. F. Butler was employed as counsel for the plaintiff and S. K. Hamilton, Esq., for the defendants.

The chief argument of the prosecution was intended to show that the injury was caused by the unskilful use of instruments in the process of delivery of the child. The defence claimed that the injury was due to natural causes, mainly the prolonged pressure of the child's head against the bladder.

After a brief consideration of the case, the jury returned a unanimous verdict for the defendants. This makes another in the long list of trials in which the faithful practitioner, in the honest discharge of his duty for the relief of suffering humanity, finds himself subjected to serious annoyance, loss of time, and expense; an evil for which some adequate remedy ought to be demanded and secured by the profession.

Miscellany.

PROGRAMME OF THE CLIMATOLOGICAL ASSOCIATION.

The following is the programme of the American Climatological Association at its annual meeting in Boston, June 24th and 25th.

Monday, June 24th, 2 p.m.

Address by the president, Dr. V. Y. Bowditch, Boston — Subject: "Comparative results in ninety cases of Pleurisy, with special reference to the development of Phthisis Pulmonalis." A study of the Summer Climate of the Massachusetts Coast, Dr. Wm. D. Hodges, Boston. Reports of Cases of Acute Miliary Tuberculosis, Dr. John C. Munro, Boston. The Mortality of Acute Lobar Pneumonia: A study of all the cases treated at the Massachusetts General Hospital, from the first case in 1822 to the present, Drs. C. W. Townshend and A. Coolidge, Jr., Boston. Consumption as I have known it, Dr. E. P. Hurd, Newburyport. The Influence of Climate and Season upon Normal and Abnormal Manifestations of Nervous Activity, Dr. Walter Platt, Baltimore.

Monday, June 24th, 8 p.m.

The Basis of Rational Climato-Therapy, Dr. Griffith E. Abbott, Bryn Mawr, Pa. Ocean Therapy, Dr. Albert L. Gihon, Surgeon, U. S. N. The Vital Statistics of Two Thousand Persons in an Ocean Atmosphere, Dr. A. N. Bell, New York. The Psychological Factor in Selecting a Climate for Invalids, Dr. E. O. Otis, Boston. The Wakefulness of Neurasthenia as affected by a Residence at the Sea-side, Dr. W. P. Daly, Pittsburg, Pa. The Relations of Sandy Soil and Pine Forests to Pulmonary Phthisis, with special reference to the Pine Belt of New Jersey, Dr. Isaac H. Platt, Lakewood, N. J.

Tuesday, June 25th, 9.30 a.m

Open Air Travel as a Cure and Preventive of Consumption, as illustrated in the history of a New England family, Dr. Henry I. Bowditch, Boston; Rest and Exercise in Diseases of the Heart, Dr. A. L. Loomis, New York.

Discussion. — Hemoptysis from Chronic Pulmonary Disease — *a.* Pathology, Dr. G. M. Garland, Boston; *b.* Clinical Significance, Dr. J.T. Whittaker, Cincinnati; *c.* Climatology from standpoints of Etiology and Therapeusis, Dr. R. G. Curtin, Philadelphia; *d.* Other Treatment, Dr. J. B. Walker, Philadelphia. Remarks on the Treatment of Pulmonary Phthisis, Dr. J. C. Wilson, Philadelphia.

Tuesday, June 25th.

Business meeting, 2 P.M. 2.30 P.M.: Some observations on the Causation and Treatment of Asthma, Dr. Beverly Robinson, New York. The Climatic Treatment of Bronchial Asthma, Dr. F. I. Knight, Boston. Institution for the Treatment of Pulmonary Consumption, Dr. P. H. Kretzschmar, Brooklyn. The Mineral Springs of Colorado, Dr. Chas. Dennison, Colorado. The Climate of New Mexico, Dr. R. M. Longwell. Santa Fe. Notes on the Prevalence of Diphtheria at High Altitudes, Dr. S. H. Chapman, New Haven. An Unusual Type of Pulmonary Disease occurring in the Central Mississippi Valley, Dr. W. C. Glasgow, St. Louis.

SCHOOL OF VETERINARY MEDICINE, HARVARD UNIVERSITY.

A general veterinary establishment for the treatment and care of lame, sick, or wounded animals is maintained in connection with this School. The establishment is entirely dependent for support upon the fees and annual subscriptions.

The hospital now has stalls for thirty-six horses and a properly fitted room for dogs. The hospital staff has recently been enlarged by the appointment of Dr. Daniel Emerson as resident surgeon. The ordinary charge for horses undergoing treatment in the hospital is $1.50 a day, not including surgical operations. A blacksmith's shop is maintained in the hospital, at which horses are shod with care and skill at the ordinary prices

To annual subscribers of ten dollars (the year beginning June 1st, and payment being made in advance to E. W. Hooper, Esq., Treasurer, 50 State St., Boston) certain valuable privileges are given in connection with the establishment.

Further information can be had of Charles P. Lyman, Dean of the Faculty of Veterinary Medicine, or Dr. Edward C. Beckett, 50 Village Street, Boston.

DOCTORS IN ENGLAND.

The London *Saturday Review* recently contained an article on the difficulties attending the securing of medical education and practice in that country, from which we make the following extracts: —

There are no less than twenty examining boards from which the student may choose his qualification. The London University, which heads the list, unless he be a man of talent and industry, may be said to be practically closed to him. If he elect to attempt to obtain his qualification here, he must be prepared to expend more money than £1000, and to occupy more than the average of five and a half years in obtaining his diplomas; he must be able, too, to pay special tutors, to attend special classes; and he must, above all, be provided with an amount of brains that would have secured success, *cæteris paribus*, in any profession. He must not only be an enthusiast and a worker, to pass the jealously guarded portals at Burlington House, but he must also be a highly educated man.

In a less degree the membership of the College of Physicians is also unattainable. It is almost prohibitive to the poor man of talent; for to practice as a pure physician the young doctor must be able to maintain himself for say at least fifteen years. As a rule, the average general practitioner contents himself with the membership of the College of Surgeons and the license of the Apothecaries' Company (though this latter qualification is yearly becoming less popular); or he obtains the license of the Royal College of Physicians, which is a qualification in both medicine and surgery, and eminently respectable. Then, if he be desirous of the title of doctor, and he be neither wealthy nor learned, he can be dubbed M.D. (being a qualified man) by a short residence and a fairly moderate examination at one of the Scotch universities, or he can obtain a foreign degree.

Having then become a legally qualified man, the practitioner, having spent £1000, or more usually £2000, is prepared to seriously attempt to gain his living. His choice lies between — an assistancy to another practitioner, a surgeoncy in the army or navy or merchant service, an appointment in some institution or hospital, a dispensary, buying a practice, buying a partnership, waiting for practice, emigrating.

As to poor-law appointments, there are first the workhouses and dispensaries; the salaries are from £80 to £100 a year. For these appointments there are usually from thirty to two hundred candidates, — and nepotism rules the roost. It is generally known beforehand who will win; and the nominally open appointment is usually transferred much as livings are in the church — namely, by purchase or arrangement. Or the Guardians take turns to elect, and the man without local interest has no chance. There are a few, a very few, prizes in this branch of the profession. Marylebone is worth £500 a year; Shoreditch, £300; Greenwich, £250, with residence and rations. If a man is fond of the hard work of his profession, and is content to remain all his life an ill-paid enthusiast, he can seek these appointments. The next class are the parochial appointments; they are worth from £12 to £50 a year, the practitioner having to find drugs. These ill-paid positions are either held by very needy men or are merely looked on by country practitioners as a means of keeping off opposition.

THE SANITARY CONDITION OF JOHNSTOWN.

Dr. W. S. Forbes, of the Jefferson Medical College writes an interesting letter to the *Medical News* of Philadelphia, from Johnstown, which is in part as follows: "In a visit to Johnstown immediately after the flood in the Conemaugh and Stony Creek Valleys on the 1st of June, I was very strongly impressed with the fact that by far the great majority of persons exposed to peril during the flood, and who had escaped, had ecchymosis of the conjunctiva to a greater or less degree. The ecchymosis was very decided in very many persons and caused a great deal of suffering. The blood out of its normal vessels acted as a foreign body and caused many parties to seek professional relief.

"In bodies of the dead the eyeballs appeared protruded as a general rule, and the eyelids were opened wide. The bodies were considerably bruised. In one instance an arm had been torn from the body at the shoulder-joint and could not be found. In no case had decomposition progressed to any extent until about the sixth day. The temperature of the air was about 76° F. during this time, nor did it fall below 60° F. at any time. The sun was out only one day, the 5th; after the sixth day, on the exposure of the body decomposition was rapid.

"Nervous shock was a prominent feature among all the survivors. On hearing of the death of their relatives, several cases were so overcome that functional activity seemed paralyzed, nutrition was suspended, and death ensued.

"There were comparatively few injuries among the rescued, and they slight in character. It seemed to be, for the most part, either death or escape without injury.

"There has been thus far a remarkable freedom from all forms of sickness, in view of the exposure incident to the flood. On the sixth day I had heard of but a single case of pneumonia, and a few sporadic cases of measles.

"Six of the physicians of Johnstown were drowned — more than one-fourth of the entire number in the town. These men were lost in their endeavors to assist others to escape — and by their character and death illuminate the entire body of their profession. Dr. Brinkey was a conspicuous example of heroic devotion. He rushed again and again from safety into peril, urging the way of escape to many, until he was overwhelmed with a large party, whose bodies with his own were recovered under the débris of the Hurlbut House."

The same journal has some thoughtful editorial comments on the sanitary needs of the submerged district. The Conemaugh river flows into the Alleghany, which furnishes the water-supply of a large region. Contamination of these waters by decomposing animal and vegetable matters, including the scouring out of privies by the flood, is evidently no merely theoretical danger. It seems a pity that the dangers from decomposing animal matter should not be, in this emergency, lessened by the employment of cremation even in the case of human remains. For the risk is not at an end with the interment of the bodies, as our contemporary says: —

"In the haste incident to the pressure of the first few days, and in the unavoidable absence of careful sanitary supervision, sufficient attention has not been given to the selection of the places of interment and to the manner of burial. So vast a number of bodies crowded within a limited space, and in a porous soil, many of them being placed in shallow graves, will, at this season of the year, lead to rapid decomposition and the pollution of the air and wells, if proper precautions are not taken to prevent it.

"The situation at Johnstown is similar to that of a battle-field after a sanguinary conflict. In time of war it becomes a necessity to bury in trenches, and when disinfectants are at hand they are freely used. But it is generally at some subsequent period that a more thorough sanitary treatment of the bodies takes place. At Metz the graves were disinfected with lime, charcoal, and sulphate of iron. Subsequently, for fear of contamination of the water-courses, the bodies were treated with chloride of lime, charcoal, and carbolic acid. The Belgian experience at Sedan favored the use of chloride of lime, nitric acid, sulphate of iron, and chlorine gas. Carbolic acid did not answer the purpose as well. The work of burial should now be conducted with the free use of disinfectants, and when completed, the early and incomplete graves should be uncovered, where necessary, and the bodies subjected to thorough treatment under skilled superintendence. The use of rapidly growing trees and shrubs is a most efficacious means for the absorption from the soil of organic substances."

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 8, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,571,558	688	286	20.40	14.10	3.30	.60	7.80
Philadelphia	1,040,245	386	137	15.08	11.18	4.40	3.64	2.34
Chicago	830,000	229	103	18.04	13.20	—	1.32	13.64
Brooklyn	814,505	322	141	18.60	12.40	4.34	.31	9.43
Baltimore	500,343	134	46	9.62	18.50	3.24	1.62	1.08
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	188	65	11.13	15.37	1.59	1.59	6.89
New Orleans	250,000	142	65	31.50	11.90	24.50	1.40	.70
Cincinnati	225,000	117	—	22.10	15.30	5.10	1.70	10.20
Washington	225,000	94	34	16.96	15.90	7.42	2.12	3.18
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	20	7	20.00	5.00	15.00	5.00	—
Charleston	60,145	41	24	24.39	9.76	12.20	7.32	—
Portland	40,000	13	2	—	46.14	—	—	—
Worcester	78,292	20	10	20.00	10.00	5.00	—	5.00
Lowell	71,518	26	8	11.55	7.70	—	3.85	7.70
Cambridge	65,552	—	—	—	—	—	—	—
Fall River	62,647	18	10	16.66	11.11	11.11	—	5.55
Lynn	53,334	11	0	18.18	9.09	—	—	9.09
Springfield	40,731	12	3	8.33	25.00	—	—	8.33
Lawrence	40,619	18	4	16.66	22.22	—	11.11	5.55
New Bedford	37,253	11	5	22.22	—	—	—	22.22
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	17	4	—	17.64	—	—	—
Salem	29,011	12	0	—	—	—	—	—
Brockton	28,813	5	2	20.00	—	20.00	—	—
Chelsea	28,167	12	2	16.66	16.66	—	—	16.66
Haverhill	26,058	7	1	—	14.28	—	—	—
Taunton	25,170	7	2	—	42.84	—	—	—
Gloucester	24,263	7	2	14.28	14.28	—	—	—
Newton	21,553	—	—	—	—	—	—	—
Malden	19,774	7	2	14.28	14.28	—	14.28	—
Fitchburg	17,534	7	1	—	—	—	—	—
Waltham	17,332	8	4	6.25	6.25	6.25	—	—
Newburyport	13,875	6	4	13.33	—	13.33	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	3	2	66.66	—	—	—	66.66
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2578; under five years of age 1016; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1473, consumption 348, acute lung diseases 274, diphtheria and croup 159, diarrhœal diseases 124, typhoid fever 53, scarlet fever 46, measles 27, whooping-cough 27, malarial fever 18, cerebro-spinal meningitis 12, erysipelas 7. From scarlet fever, New York 26, Brooklyn 8, Baltimore 6, Philadelphia, Chicago, and Washington 2 each. From measles, New York 10, Philadelphia 5, Cincinnati 4, Chicago 3, Brooklyn and Charleston 2 each, New Orleans 1. From whooping-cough, New York 11, Philadelphia 7, Brooklyn 4, Boston 2, Chicago, Baltimore, and Lynn 1 each. From malarial fever, Brooklyn 7, New Orleans 5, New York 4, Philadelphia 2. From cerebro-spinal meningitis, New York 4, Cincinnati, Washington, and Worcester 2 each, Gloucester 1 From erysipelas, New York 3, Philadelphia, Chicago, Brooklyn, and New Orleans 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending May 25th, the death-rate was 17.4. Deaths reported 3190; infants under one year 775; measles 142, whooping-cough 113, scarlet fever 52, diarrhœa 48, diphtheria 39, fever 32.

The death-rates ranged from 12.1 in Leicester to 30.5 in Preston; Birmingham 16.3; Bradford 17.8; Hull 17.1; Leeds 23.5, Liverpool 17.5; London 15.2; Manchester 28.8; Newcastle-on-Tyne 21.6; Nottingham 19.1; Sheffield 17.1; Sunderland 21.0.

In Edinburgh 16.6; Glasgow 28.7; Dublin 21.0.

The meteorological record for the week ending June 1, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, June 1, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
May 26	30.06	49.0	50.0	44.0	96	77		78.0	N. E.	S.		20	7		C.	F.			.00
" 27	29.95	51.0	54.0	45.0	72	93		91.0	E.	S. E.		5	15		R.	R		8.40	.59
" 28	29.79	58.0	73.0	49.0	82	69		90.0	S. W.	S. W		12	7		R	O.		15.30	2 21
" 29	30.18	54 0	68.0	42 0	67	64		78.0	W.	S. W.			13		F.	O.			.00
" 30	30.24	62.0	73.0	49.0	82	86		76.0	N.	N. W.		12			F.	O.		0 15	.01
" 31	30.20	73 0	80 0	64.0	64	83		62.0	W.	N. W.		14	12		C.	C.			.00
June 1	30 09	72 0	77.0	58.0	78	81		70.0	N. W.	N. W.		24	16		C.	F.		1 20	.41
Means for the Week	30.07																		

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JUNE 8, 1889, TO JUNE 14, 1889.

Gandy, Charles M., Captain, Assistant Surgeon, upon the abandonment of the post of Fort Concho, Texas, will report in person to the Commanding Officer Fort Clark, Texas, for duty at that station, to relieve First Lieutenant Ogden Rafferty, Assistant Surgeon, reporting also by letter to the Comdg Genl Dept of Texas.

Rafferty, Lieutenant, on being relieved by Captain Gandy, will report for duty to the Commanding Officer San Antonio, Texas, reporting also by letter to the Commanding General Department of Texas. Par. 7, S. O. 133, A. G. O., Washington, June 10, 1889.

By direction of the Acting Secretary of War, First Lieutenant **Philip G. Wales**, Assistant Surgeon (recently appointed), will proceed from this city to the Presidio of San Francisco, Cal., and report for duty to the Commanding Officer of that post, reporting also by letter to the Commanding General Division of the Pacific and Department of California. Par. 3, S. O. 132, A. G. O., June 8, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 15, 1889.

Norton, O. D., Assistant Surgeon, ordered to the Naval Hospital, Chelsea, Mass.

Hall, J. H., Passed Assistant Surgeon, detached from the Naval Hospital, Washington, D. C., and granted six months leave to go abroad.

Lewis, D. O., Passed Assistant Surgeon, detached from the Naval Academy and to Hospital, Washington, D. C.

Bright, George A., Surgeon, detached from the Navy Yard, Norfolk, Va., and wait orders.

Marmion, R. A., Surgeon, detached from the Receiving-ship "Franklin" and to Navy Yard, Norfolk.

Bertolette, D. N., Surgeon, ordered to the Receiving-ship "Franklin."

Kidder, B. H., Medical Inspector, ordered to the Naval Academy, Annapolis, Md.

Walton, T. C., Medical Inspector, detached from the Naval Academy and to the U. S. S. "Chicago."

Beyer, H. G., Passed Assistant Surgeon, ordered to the Training ship "Portsmouth."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE TWO WEEKS ENDED JUNE 8, 1889.

Mead, F. W., Passed Assistant Surgeon, ordered to examination for promotion, May 31, 1889.

Carrington, P. M., Passed Assistant Surgeon, to proceed to Johnstown, Pa., on special duty, June 3, 1889.

McIntosh, W. P., Passed Assistant Surgeon, when relieved at New Orleans, La., to proceed to San Francisco, Cal., for temporary duty, May 29, 1889.

Smith, A. C., Assistant Surgeon, relieved from duty at Louisville, Ky.; ordered to Marine Hospital, New Orleans, La., May 29, 1889.

SOCIETY NOTICE.

Vermont State Medical Society. — The Vermont State Medical Society will hold its semi-annual meeting at Brattleboro, Vt., on Tuesday and Wednesday, July 9th and 10th. The date of this meeting is changed from June 27th and 28th, so as not to conflict with the meeting of the American Medical Association at Newport, R. I.

D. C. Hawley, M.D., *Secretary*.

BOOKS AND PAMPHLETS RECEIVED.

Forty-third Annual Announcement of Starling Medical College, together with Catalogue and Order of College and Hospital Exercises for the Session of 1889-90. Columbus, Ohio. 1889.

A Résumé of Experience at the Aural Clinic of Prof. Hermann Schwartze, in Halle, Germany. By Charles H. May, M.D., Visiting Ophthalmic and Aural Surgeon, Randall's Island Hospitals; Assistant Surgeon, New York Ophthalmic and Aural Institute, etc. Reprint. 1889.

Scarlatinous Otitis. By Chas. H. May, M.D., Visiting Ophthalmic and Aural Surgeon, Randall's Island Hospitals, N. Y.; Instructor in Ophthalmology, Vanderbilt Clinic, College of Phys. and Surg., N. Y.; Asst. Surg. N. Y. Ophth. and Aural Institute, etc. Reprint. 1889.

Gratisbeilage zu Deutsche Medizinalzeitung. Therapeutische Notizen der Deutschen Medizinal-Zeitung. Herausgegeber Dr. Julius Grosser. 1880-1889. Heft II., Bogen 6-10 (Gelenkentzundung — Pharyngitis). Berlin. 1889.

First Report of the Haverhill Ctiy Hospital with Rules and Regulations, December 31, 1888. Haverhill, Mass. 1889.

Fourteenth Report of the Salem Hospital. Salem, Mass. 1889.

Thirty-first Annual Report of the Washingtonian Home, located at 41 Waltham Street, Boston. Boston. 1889.

Is More Conservatism Desirable in the Treatment of the Joint Diseases of Children. By A. B. Judson, M.D., Orthopedic Surgeon to the Out-patient Department of the New York Hospital. Reprint. New York. 1889.

A Clinical Study on Alopecia Areata and its Treatment. By L. Duncan Bulkley, A.M., M.D., New York. Reprint. New York. 1889.

On Unusual Methods of Acquiring Syphilis, with reports of cases. By L. Duncan Bulkley, A. M., M. D., of New York.

On the Value of Frequently Repeated Doses of Arsenic in the Treatment of Bullous Diseases of the Skin, especially in Children. By L. Duncan Bulkley, A. M., M.D., New York. Reprint. New York. 1889.

Address.

PREVENTIVE MEDICINE IN MASSACHUSETTS.[1]

BY H. P. WALCOTT, M.D.,
Chairman Massachusetts State Board of Health.

Examinations of the public water-supplies, and consideration of the best means for securing their purity, have received much attention in this State. It has been well said that no other article universally used by man is so little examined, changed, or freed from injurious qualities, as water. No other article of food or drink is exposed to so many contaminations.

It would be a waste of time, in this presence, to insist upon the possibility of the origin of disease in infected water-supplies.

In a vague way this fact has been recognized in all ages. We learn from Thucydides that the Athenians attributed the plague at Athens, during the Peloponnesian war, to the fact that the enemy had poisoned the wells at the Piræus, the place where the disease first broke out, and whence it invaded the city. During the middle ages the connection between the use of certain drinking-waters and the outbreak of disease was so close that the suspicion almost immediately arose that some poison had been mixed with the water-supply. As the Jews were the people in the community who possessed much information as to drugs and poisons, and were sometimes wealthy, they were at once accused of poisoning the wells; and suffered somewhat as respectable members of our profession do now in trumped-up malpractice suits. In the last outbreak of cholera in southern Europe the doctors were charged by the mob with the same offence, and in several instances nearly lost their lives in consequence of popular violence.

Dioscorides recognized the difficulty of ascertaining all the important qualities of water, and wisely says that he can make no general statement about it, so much depends on its many and varied relations to places. How permanent and how general these injurious conditions may become is shown by the prevalence of certain diseases in cities of notoriously polluted water-supplies, and by the disappearance of these diseases when this single condition is removed by the substitution of pure water.

There are many municipalities, the world over, where every new comer acquires his citizenship at the expense of an intestinal catarrh or a typhoid fever; it is a matter of secondary importance whether this happens through a direct infection, or because disturbances are set up which open the way for the entrance of the specific poison. Typhoid fever is now more a disease of country towns than of cities, in all cases where the cities have unpolluted water-supplies. Before the general introduction of good public supplies, the reverse was true; and still is in certain cities where the water-supply is not sufficiently protected from fecal contamination. The universal experience of mankind has taught this lesson; some of the most permanent monuments of the old world are proofs of it.

The stranger who stands in wonder beneath the Pont du Gard to-day scarcely realizes that the great Roman, who built it to meet a sanitary need of the camp and town of Nemausus, constructed his mighty aqueduct with such costly permanence that the flourishing modern city of Nismes shrinks from the burden of only restoring it.

How infected the soil of a great city may become is shown by the frequent outbreak of diseases that stand in close relation to soil pollution; and by the immediate appearance in more southern latitudes of pernicious fevers whenever the soil is disturbed during the warmer seasons of the year. The quantity of human excrement alone which is buried in the vicinity of the dwelling-houses of the older parts of our cities is enormous, even upon the smallest estimate of the amount per capita which is buried in the soil yearly.

This is sooner or later washed, in whole or in part, into the subsoil waters; possibly to reappear upon the surface before it has lost its dangerous qualities; and even though the quantity of impurity taken into the system at any one time be small, it must be remembered that the dose is often repeated.

The deep soil waters are themselves generally free from micro-organisms; in whatever way we contrive to bring them to the surface something in animal or vegetable life is added to them. Absolutely pure water does not exist in or upon the surface of the earth; nor is it at all certain that it would be better adapted to our uses if it did exist, for there has not been anywhere a continued use of chemically pure artificial waters, by a sufficiently large number of human beings, to enable us to decide the question of the influence of the organisms always present in natural surface waters.

When chemistry had reached a degree of delicacy that could discriminate between minute quantities of the dissolved substances of organic life, it was at once supposed that means had been found to enable us to form correct judgments as to the healthfulness of any given specimen of water.

The improvement of the microscope in the last generation made it possible to conveniently study the grosser microscopic organisms. The great improvement in this instrument in quite recent years, together with Koch's method of plate culture of micro-organisms, has carried the analysis of water chemically, microscopically, and biologically to refinements which puzzle seriously our capacity to make available to sanitary science the investigations of the laboratory. Exact and repeated analyses of the drinking-waters have hitherto been rarely made, usually they are procured under the pressure of some suspicious circumstance in the history of the water-supply, or in the hope of discovering an explanation for some unexplained outbreak of disease.

In various parts of the world examinations are now going on for the purpose of ascertaining, with all possible accuracy, all the facts in regard to public water-supplies.

Two years have been already spent upon this work in Massachusetts; and it can now be safely asserted that, when a public water-supply again becomes so disagreeable to the senses of taste and smell that men will not drink it, the changes that have taken place can at least be pointed out.

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[1] Annual discourse delivered before the Massachusetts Medical Society, June 12, 1889. Concluded from page 599.

Possibly the conditions of those changes may be still beyond control; but we shall at least know in what quarter we are to look for help.

Observation and experiment attach a significance to the presence of certain substances in waters, which would not, at first thought, be considered deleterious. Iron, for instance, has been considered objectionable in water used for domestic purposes, simply because it left stains upon fabrics which are washed in it, or come in contact with it. But we have now found that the presence of iron in a water makes a medium favorable to the development of certain minute forms of vegetable life which, in sufficient quantity, cause the water to become too offensive for use.

For the State examinations specimens of the various waters selected for examination are taken every month, in such manner that the external conditions can be preserved throughout the investigation. The chemical analysis includes the determination of the color peculiar to the water, as well as the odors. In as many cases as possible the animal and vegetable forms of life are also studied. In a hundred different waters taken at random from various portions of the State it would probably be impossible to at once select those which the final judgment of the experts, with a knowledge of the chemical constituents of the water for a long period of time, would designate as dangerous on account of pollution. That is to say, the absolute figures of the amounts of ammonias, nitrates, and chlorides may vary quite considerably in different waters; and yet one would not be justified in assuming that the water containing the larger amounts of any of these substances was more unwholesome than the rest, unless an accurate knowledge of the surroundings was possessed. But these figures are of great value in the history of any one water; their variations have especial significance; and it is for this reason that the chemical determinations should be made with the greatest accuracy possible. It cannot be granted that this great degree of accuracy is unnecessary. It is true that methods of analysis have changed much in comparatively short periods of time, and results which were deemed of great consequence twenty years ago are neglected now. It is occasionally asserted that the days for chemical analysis have passed away, to give place to bacteriological examination, to a counting of the bacteria actually present in a measured quantity of water. For a certain length of time this method has been in fashion, and it appears to be generally true that waters containing the largest numbers of bacteria are the most dangerous. These biological examinations involve the expenditure of much time and the employment of many skilled observers, if anything more than a mere counting of the bacterial colonies be attempted. It is not, therefore, probable that bacteriological examinations will take the place of chemical analysis. On the contrary, we may the rather anticipate that biological studies of the organisms contained in water will accurately determine those which may be injurious to health; and that the chemist will then devise methods for detecting the chemical peculiarities of a water which would be condemned in the laboratory of the biologist. Difficult as this requirement may be, and impracticable as it may at present seem to be, some of the results recently obtained by chemists who have made special studies in the analysis of water indicate possibilities of greater accuracy than that to which we have thus far attained.

Specimens of surface drinking-waters may contain the ova of some of the parasites of the human body, as well as other forms of animal or vegetable life dangerous to health, but of sufficient size to be detected by the naked eye, or by the lower powers of the microscope. These organisms, however, have not attracted so much attention, or given rise to so much speculation as the bodies which are only visible under the highest powers of the microscope. Among these are to be placed those bodies which are now generally believed to be the causes of certain infectious diseases in man. The presence of these organisms cannot be detected by chemical analysis; and it is because we have no certain knowledge as to the effect upon them of the mixture with very large bodies of water, that no public health authority has ventured to advise the use of a water-supply which has once been polluted with sewage.

This hesitation also exists when we consider water in the form of ice. Examinations actually made, not only in this State but also in the laboratories of other States and countries, have shown that the process of freezing diminishes the quantity of matter in solution in the water frozen; that this removal of substances foreign to pure water is least upon the exposed upper surface, and in the layer of snow-ice usually noticed in the article as seen in commerce; that the purification increases in the lower layers, and is greatest in that portion of the mass which is clearest and contains the fewest air-bubbles. The change effected by freezing may thus amount to almost complete purification in part of the ice formed, and, for the whole mass, even, the reduction in dissolved matters may average 90 per cent. But it is also true that some of the micro-organisms are not destroyed by freezing. This society is familiar with the history of an epidemic caused by the use of ice proved by chemical analysis to be impure. It should be added that, in this case, which is reported in the seventh report of the State Board of Health, the pond from which the ice was taken was wholly unfit for use as a water-supply and probably would never have been selected for that purpose. There has always been a popular belief, for which there appears to be some foundation, that contaminated waters become purified by the act of freezing. But what we have really gained by a scientific examination of ice is this that we now know that some portions of the mass are very much better suited to safe use than others; and a careful preparation of the article for market will naturally include the removal of the suspicious portions.

There are also, fortunately, in every part of the country bodies of water from which pure ice can be obtained; until these sources are exhausted we should all agree that the human body, at least, should not be used as an experimental culture medium.

Important additions to our knowledge of the conditions that should surround the storing of water have also been made; the arrangements for protecting water from high temperatures and free exposure to light have had marked results in diminishing the growth of objectionable organisms.

The examination of water to ascertain the presence and number of micro-organisms has also improved the construction of filters, by giving a definite test of the degree to which such bodies are removed; and we can now find filters constructed upon scientific principles and adapted to the requirements of public water-supplies even. It is also claimed that chemicals can be so added to the water to be filtered that organic substances will be removed by a reaction which frees the water from the organic bodies and produces an easily managed precipitate. There is no reason apparently why this result may not be obtained. But, granting that water may be purified by filtration, by the addition of chemicals, or by boiling, these processes are poor substitutes, on the part of the individual, for a good public water-supply which has the advantages of competent and continuous watching and of all the resources of the State for its protection.

In very close connection with any general treatment of the water-supplies of the State stands the consideration of the disposal of sewage. A few cities and towns can turn their sewage into the ocean or into streams without serious injury to any one. But the streams which can be so used at the present time are few in number; and, with the rapid increase of population, will soon cease to be available.

Over how wide an extent of territory the watershed of the supply of a great city may stretch will be understood when it is stated that the Cochituate, Sudbury, and Mystic supplies of the city of Boston come from lakes or streams which drain a hundred and twenty-two square miles of territory forming portions of sixteen cities and towns. In the sparsely settled parts of this area household waste may safely enough be disposed of in or on the soil; but it is also true that in too many cases it is, in ignorance, so used as to be a danger to the household from which it comes, as well as to the neighbors.

The health of the great city requires water free from pollution; it must have it, and, it is safe to add, it will have it.

The assertion has occasionally been made, in some public assemblies, that there is some sort of natural right, belonging to those dwelling on the banks of a pure stream of water to misuse it and defile it. But this is again a question which it is quite unnecessary to discuss here, if it be true that sewage can in any way be safely treated without placing it in a body of water.

Experiments have been carried on for two seasons at a station at Lawrence under the control of the State Board of Health and the immediate direction of men who have a complete knowledge of the conditions involved in such work. Various methods of sewage disposal have been investigated; three only seem to deserve serious consideration: chemical treatment; irrigation upon large areas, but not to such a degree as to imperil crops; and, lastly, intermittent irrigation upon limited surfaces of properly prepared filter grounds without expectation of securing crops.

The first method, so far as it has yet been employed, does not remove more than half of the contained impurities, and leaves an effluent which it is not safe to discharge into a stream which is used for domestic purposes. The first cost is large, the maintenance is expensive, and the works are not always free from offensive odors.

Broad irrigation is only practicable where very large areas of cheap land can be obtained, and even in this case the probabilities of a profit from the undertaking are very small.

The method of intermittent downward filtration is that which, thus far, offers the best hope of success. In this there is no promise held out of an income in the way of crops from the irrigation field. But the attempt is made to purify, as completely as possible, the largest quantity of sewage on the smallest area. How thoroughly these requirements have been met is manifest from a few of the many experiments made with filters of coarse mortar sand five feet in depth. Upon such a filter sewage was applied at the rate of 120,000 gallons over the acre daily; and after nitrification had begun the ammonias were less than one and a half per cent. of those of the sewage. Upon increasing the amount filtered to 180,000 gallons for the acre, the ammonias also increased, but for the next four months averaged less than two per cent. of those in the sewage.

Another filter of the same kind, which received sewage at the rate of 60,000 gallons for the acre daily, gave an effluent of nearly constant quality; having one half of one per cent. of the ammonias of the sewage and showing less organic matter than many of the drinking-waters of the State.

Still another filter of very fine sand, which filtered at the rate of 12,000 gallons daily for the acre, gave an effluent which, by chemical analysis, contained less organic impurity than the water of Lake Winnipiseogee; at the same time the bacteria of the sewage applied amounted to 591,000 in a cubic centimetre; in the same quantity of fluid taken from the effluent there were but two, and these may have come from the air during the taking of the sample.

So far, then, as chemical and bacteriological analysis can give assurance of the possibility of effectually purifying sewage by intermittent filtration through sand or gravel, the result is satisfactory

This, however, has been attained under conditions which probably would not be possible on a larger scale or under ordinary municipal direction. The final test, also, has not yet been made, that is, the trial to ascertain whether the peculiar something in a given specimen of water which causes typhoid fever in the person using it will still exist in the effluent though unrecognized in the chemist's laboratory or by the microscope, and will be found to exist there by the crucial test of an experiment upon some animal susceptible of the disease. Even if complete safety has not been reached, very much has been gained by the diminution in the number of harmful agencies. There is scarcely another influence in Nature of so great sanitary value, or generally so constant in its operation, as that of dilution and division.

The warfare waged by the phagocytic cells of the human body against intruding foes, so eloquently set forth in recent days, can only be successful when the enemy is divided. The strongest battalions prevail in the marvellously complicated world of the human body as well as in the comparatively elementary arrangements of the battlefield.[1] The undoubted protection from several infectious diseases which is afforded by free ventilation is an instance more of dilution than of destruction. What the particulate contagion may be which is carried from a person ill with scarlet fever to one susceptible of it cannot easily be imagined; and yet, during a season of very general prevalence of this disease, almost every person in densely peopled districts must be exposed to some portion of the infectious material. The actual amount of this material which comes in contact with a susceptible subject seems to be of decided influence. It has been proved to the satisfaction of the responsible authorities in England, that certain small-pox hospitals, even when most carefully managed, have been a source of infection over a large circle, of which the hospital was the centre; with an incidence of disease diminishing regularly with increase of distance from the building. this influence also stands in direct proportion to the number of sick in the hospital.

Assuming, however, that a person has been fully exposed to a contagious disease and does not contract it. Immunity from the communicable diseases, whether obtained by a previous attack of them or by the lack of that predisposition of which we hear so much now-a-days, is a simple statement of fact, behind which lies an impenetrable mystery. The word "zymotic," which has been much used in this connection to designate a class of diseases having "the property of communicating their action, and effecting analogous transformations in other bodies" unfortunately carries with it the suggestion that the phenomena of fermentation are an explanation of the diseases thus designated. It is true, probably, that the accurate study of the process of fermentation, carried on by Pasteur, contributed more than any other single investigation to the remarkable activity of the last few years in the study of the bacteria of many of the infectious diseases. But beyond the constant association in a small number of diseases of certain micro organisms with some of the organs or tissues of the body, we have not yet penetrated. It was early seen that the micro-organism, simply as a tenant of the human body, had a comparatively limited influence. The purely mechanical invasion of the tissues of the body should not be more injurious in the case of the pathogenic organism than in that of the innocent growth. There remained, then, to be considered the products of the vital processes in these microscopic organisms. Many of these products have been shown to be possessed of the most poisonous qualities, and their study offers one of the most attractive fields for original research. These instances of the present direction of the work of the State Board of Health have been given because they are the subject upon which the state has directly legislated. The experiments and observations could not easily have been made under any other authority than that of the State, and they touch more nearly than any other general conditions the lives of great numbers of human beings by influences not easily measured or perceived even by the trained observers of our profession.

They are conditions requiring the interference of the State, because in our civilized life the individual is utterly helpless in his vain endeavor to protect himself, even could he identify the source of the injury. There must be co-operation, voluntary if it can be so arranged, but secured by all the power of the State if need be, against stupid neglect or wicked selfishness.

Incomplete as our knowledge, then, is upon many of these subjects, it must however be evident to all that great progress has been made in the last twenty years in the discovery of many of the essential conditions of disease. We have gained enough to be able to decidedly limit some of the communicable diseases; with others again we have accomplished but little. As in curative medicine, so also in preventive medicine, it will not do to wait until we have satisfied all the demands of science before we act. We must expect, in the light of a larger and better experience, to discard many things which we have hitherto thought to be essential, and to seek for assistance in directions where we little expected to find it.

Our knowledge of the pathogenic micro-organisms is closely limited to laboratory experiments with pure cultivations of the various species. This is very certainly not the condition of things in that outside world where diseases are contracted and the sick must be treated. There is not much really known of the simple metamorphic processes effected in plain chemical fluids by bacteria; and when it comes to the infinite variations caused by their action on the human body, we can at best only describe results.

Man exercises a power over plants that the public health officer would oftentimes be glad to possess over human beings; and something useful may perhaps be learned from the experiences of agriculture, though we may never be able to exercise the same control that the gardener so freely and profitably makes use of, when he destroys a vicious stock, or breeds out certain imperfections by the careful selection of parents through successive generations.

This art of agriculture, which has so many points of resemblance to our own, teaches us that the liability to certain diseases which is found among animals has its analogies in the vegetable kingdom.

Under certain conditions a plant is more apt to become infected by parasitic diseases: in its first tender growth, for instance, and when the surface of the plant is wounded. Peculiarities of tissues have also a marked influence: farmers know that the thin-skinned potatoes offer less resistance to the intrusion of some vegetable parasites than do the thick-skinned varieties; but when the entrance is

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[1] To the same purpose is the fact that a practically thorough disinfection may be obtained in the laundry by simple washing. For the truth of this we have the experience of some of the hospital and public laundries, like that of the Sanitary Department of the city of Glasgow.

The health officer of that city, J. B. Russell, M.D., and there can be no better authority, states that during an experience of ten years there were washed in the establishment referred to over a million articles infected by every variety of known contagion. Everything was done as a careful housewife would do it, but in a place provided for the purpose and with the assistance of certain mechanical appliances. Blankets and woollen articles were not boiled, every other fabric was. The result was complete disinfection; and the test of the success of the work is found in the fact that not a case or suspicion of a case has occurred of interchanged disease — for instance, the appearance of small-pox or other contagious disease in a house from which clothes had been taken and returned on account of scarlet fever. The only defect in the arrangement was the occasional infection of the washerwomen who handled the soiled clothing. But even this difficulty can be reduced to very small proportions, if not wholly removed, by more careful management and previous disinfection by heat made there appears to be no difference in the consequent changes in either kind.

General and external conditions exercise the greatest influence upon plants, such as temperature and moisture both in the air and in the soil. Close planting is an evil that no interference short of a removal of the condition itself can relieve. Perhaps no more suggestive comparison can be made of this noxious influence, to conditions in our own social life, than that which is at once suggested by the thought of the crowded tenement houses of our cities.

It is a comparison in part only; for man suffers not alone in health, but, in his almost beastly condition of overcrowding in the worst of these tenements, is robbed of those sentiments which are worth more to the human race than robust bodies even.

As commerce has distributed over the world trees and plants, which, by some inherent peculiarity, are fitted to flourish only in exceptional surroundings; so possibly in the human race we shall find certain stocks which deteriorate when removed from their native soil, while others may improve.

In the vegetable world, a knowledge of the real nature of the disease gives us the best clue to the discovery of a remedy; removing the common barberry from the borders of the wheat field protects, to a measurable extent, the grain from a rust which has inflicted at times serious injuries on this crop.

Investigations into the geographical distribution of diseases have proved that the whole world has suffered from a pestilence which is at home only in the delta of the Ganges; while in comparative pathology we may establish the fact that some epidemic disease of the human race belongs primarily to a domestic animal, in whose body it can be most satisfactorily dealt with.

This country, but fortunately not our own State in our time, has suffered severely, and may suffer again in this year even, from a pestilence which is endemic at one or two ports only in the Gulf of Mexico. Yellow fever is a disease which owes most of its terrors to sanitary neglect; and so long as the port of Havana is allowed to remain in its filthy condition, a permanent culture ground for the disease, so long will our whole Southern seaboard suffer from occasional panic, and what is worse still, from the state of negligent exhaustion that always follows a fit of panic.

If it were possible to control by inspection the admission of yellow fever through the regular channels of commerce, it certainly would not be possible to close the doors by which it may be smuggled in. It is a constant warning, as all epidemics fortunately are, of the need of cleanliness, and the warning has evidently not been everywhere heeded. But it is to be hoped that statesmen may find a proper subject for international consideration in the question; whether any country should be allowed to maintain wantonly at our very doors an unnecessary source of harm to our lives and property.

In the comparative pathology of the communicable diseases, no disease has attracted more attention to itself than rabies. The tragic features of the final struggle, the long uncertainty as to the outbreak, and the failure of medicine to cure it have invested it at all times with features of special interest.

The real protection afforded by the inoculations of Pasteur has been therefore gratefully acknowledged by our profession and by the people; and is the splendid crown of a life of magnificent service to mankind. But, even in this disease, Prussia, with twenty-eight million inhabitants, by a system which deals with the dog first, and keeps the animal at all times under proper restraint, and in case of disease under care of a veterinary surgeon, has a record of fewer deaths from rabies through a number of years, than the city of Paris alone from cases originating there.

In Paris, notoriously, whatever laws exist relative to dogs and the necessary control of them are not strictly enforced.

For our public health service, then, we must have, in the first place, a scientific knowledge of the infecting principles of the communicable diseases, in order that we may discover whence they come and how they increase and live. We must be enabled to separate the sick from the well; each case is a public danger of which a public officer should be notified. Each patient must be made to understand that it is his duty to protect the community as best he can. If he is ignorant, instruct him; if he is negligent, punish him; and while he is helpless, support him.

The interests of the State, the city, and the individual, in questions of public health, cannot be separated. We often hear this subject spoken of as though the topics of public and private health were essentially distinct. There can be no distinction; whatever affects injuriously the individual must of necessity produce the same changes in all others in like circumstances. The duty of the citizen is to avoid the doing of those things which may work an injury to his neighbor's health; and this obligation the State must enforce. But the interference of the State is only desirable when there is a sufficient foundation of actual knowledge, gained either by observation or experiment, upon which can be safely established a body of laws.

These facts and the interpretation of them are properly the work of experts, who are, almost of necessity, members of the medical profession.

It is in the direction of a better preparation of members of the medical profession for this expert work that the State can render essential aid. No public interest is of so great importance as the protection of health, and there is no other public interest for which the State expends so little.

For the practitioner of medicine there is the sure prospect, if possessed of fair intelligence, good education, and industry, that he will obtain an honorable place in the world and a decent maintenance. For him who devotes himself to the study of preventive medicine there is, at present, no prospect of employment in any place which the State or the city considers as deserving any compensation above that of a purely administrative office, which presupposes no unusual or expensive preparation for its proper management. This is an unpleasant contrast with the wiser management of countries where the value of human life is better recognized.

Let me not be understood to include in the positions, for which any adequate compensation is claimed, either our State or local boards of health. These boards have been made up of men, not of our profession alone, but of representatives of all the busy occupations of the world; they have freely given their services in the past, they are doing so in even greater measure to-day, and will undoubtedly continue to do so in the future.

But unpaid service such as this should not in vain ask for the right to adequately reward the devotion and intelligence of the responsible officers, upon whom must rest the administration of some of the most serious functions of government, which can only be performed by an expert of thorough training; and though this work were an hundred times more costly than it is, it would still be less than the useless wastes of human life and pecuniary expenditure caused by sanitary neglect.

But it has, I hope, been also made plain that the one force, upon which more than any other future reliance is to be placed, is the better education of the people in sanitary matters. In too many directions they have hitherto been unable to speak for themselves. Everything that concerns the general health has been regarded as a mystery only to be approached by those who have had some peculiar initiation. But we have certainly now arrived at a stage in our progress where we can designate certain conditions as essential to good health and sufficiently simple to be the property of all.

Disinfection, the essential qualities of which are now understood better than before, is seen to have no surer foundation than systematic cleanliness down to the minutest details.

The attempt to thoroughly disinfect, by means of chemical agents, any considerable space or any large object is well nigh hopeless. In many instances the attempt to purify by some bad-smelling preparation is positively dangerous, from the false sense of security conferred by the process. Let me not be understood to discourage the attempt to deal with limited quantities and individuals by means of chemical disinfectants; but in proportion as we try to deal with indefinite things does our work cease to have a definite value.

Thorough washing with soap and water has been shown by experience in the laundries of pest-houses to be fully as efficacious as the most elaborate treatment with chemical disinfectants. For such objects as cannot be washed, heat above 212°, exposure to sun and air, beating in open places, have effected the same result. The thorough cleansing of the walls and exposed surfaces of infected rooms, with a generous supply of fresh air, has apparently answered as well as the most elaborate diffusion of disinfecting gases.

In dealing with the patient, however, there is some excretion from the body or some definite particle which bears the infection, and can be destroyed and must be destroyed. This destruction may be accomplished by chemicals, or by heat, or better still by fire. It is true in this as it is in the practice of ventilation for the removal of foul odors, that it is much easier to conduct away the stench before a large room is polluted by it, than to change all the air in the apartment itself.

Mr. John Simon many years ago suggested that the troublesome question of a separate isolation ward in a hospital would be answered if sufficient separate ventilation outwards could be obtained for the bed of each patient, by bringing it into connection with an outward ventilating shaft. In one hospital at least this has been accomplished by making a direct connection between the interior of the bed and the ventilating system of the building; the apparatus is quite simple, as all practicable systems of ventilation should be, and has at least answered the purpose of removing one disagreeable odor without introducing another.

While indicating a few of the directions in which public health authorities have undertaken to provide relief for existing sanitary defects, or to obviate the injurious influences inseparable from the growth of population, I am conscious that many things have been omitted which are substantial gains to our power of dealing with disease, both from the side of the physician as individual, and from the point of view of the public health authority. But enough have been enumerated to prove that there can be no separation of interests. The individual will surely not needlessly suffer when the community as a whole is so far protected as mortal hand can protect. But there will be the unending struggle, for all that, in which our profession can bring relief to the suffering, hope to the hopeless, and strength to the weak.

During many years it was the pious and gracious custom for the reader of your annual address to briefly commemorate the services of the members of this society who had died during the year.

The Massachusetts Medical Society now numbers nearly eighteen hundred members. Thirty-nine who were with us a year ago will meet here no more. It is not possible in the few minutes at my disposal to name each one of them.

They lived active, devoted, and unselfish lives; not many of them were known in the great world, and very few of them had acquired more than a modest competence; but among them were those who had fairly earned the title of "the good physician" by qualities which are recognized and honored now as they always have been since the time when their possession deified the Father of Medicine.

Some had been more especially known to us and the public for the attention which they had bestowed upon measures for the improvement of the public health; but no one of them had hesitated to contribute what he could for the protection of all, well knowing that herein lay the best security for the well-being of each part.

The figures of their ages are the measure of their sacrifices; length of days is more rarely given to him who practises our profession than to any other of the so-called learned occupations of men. But what reward had they, and what shall be ours? Let our own poet speak: —

"In life's uneven road
Our willing hands have eased our brothers' load;

Pain was our teacher, speaking to the heart,
Mother of pity, nurse of pitying art;
Our lesson learned, we reached the peaceful shore
Where the pale sufferer asks our aid no more;
These gracious words our welcome, our reward,
Ye served your brothers; ye have served your
Lord."

THE PRACTICAL STUDY OF BIOLOGY.[1]

BY MARY PUTNAM JACOBI, M.D.

Mr. Chairman.

In accepting the very great honor of an invitation to be a guest at the annual meeting of the Massachusetts State Medical Society, I did not expect to be called upon to speak before it. But since, Sir, you have chosen to still further honor me by calling upon me, it would be churlish to refuse.

In a meeting like this, I presume it is intended that each person present shall bring forward the thought or thoughts that may have especially preoccupied him or her during the year that has gone by. Now, one of the subjects which has especially preoccupied me is one that I think must interest everybody who is either a student or a physician or a director of medical education. I refer to the question of the practical study of biology, in its threefold aspect of normal physiology, of pathology, and of elementary therapeutics.

There is a strange idea current among the laity, and even among many physicians, that the study of physiology by means of practical experiments and demonstrations on the living subject is only necessary, and indeed only permissible, for purposes of occasional original research. You know that this is the view taken by so august, yet in the premises so incompetent a body as the English Parliament, which has assumed the right and duty of actually forbidding physiological experimentation for any other purpose. But in reality the necessity is not occasional, but permanent, and coextensive with the education of every medical student. For what are the facts of the case? We undertake to prepare ourselves and others for the most profound and subtle and difficult of all sciences, the Science of Life; we undertake this, not for the purpose of irresponsible contemplation, but with the avowed intention of practically intervening among the phenomena of life, of regulating disturbances in the mechanisms of living organisms, of bringing normal order out of what may have become the wildest disorder and confusion. Now, how is it possible to do this unless the mind has first become thoroughly and personally acquainted with the normal order? Students in other natural sciences than animal physiology know perfectly well that listening to a didactic lecture or conning the pages of a text-book are entirely insufficient means to bring the mind into fertile contact with nature. Such contact cannot be obtained second-hand, but only by those who, as Claude Bernard says, have, in the hospital, the amphitheatre, and laboratory, with their own hands stirred the soil, fœtid and palpitating with life. The difference is enormous between the person whose knowledge of physiological phenomena is summed up in a list of verbal statements, and the other whose mind has become saturated with vivid conceptions of vital facts, based upon multiple experience of them. No one who has not tried it, knows how indefinitely both intellect and senses gain in delicacy and subtlety when they have become habituated by practical intercourse with the endless intricacies of nature. And it is the peculiarity of medical work that the necessity for such mental subtlety is not confined to the few, to the *élite*, to the college professors who, very likely, have withdrawn from the practice of medicine. The poorest sick person in the hospital, the most tedious invalid of the private *clientèle*, serve to illustrate all the mysteries of the science, and demand on the part of their doctor the ability to cope with its deepest and most difficult problems. The physician whose thought is sufficiently elevated, and whose imagination is sufficiently keen, confronts this commonplace sick human body as an antique priest may have stood before the veiled mysteries of Isis. It is his privilege, and to an increasing extent, to draw aside the veil of the surface, to plunge his eye into the depths of the organs and tissues as they are actually at work, to follow in imagination the innumerable streams of vital actions which are eddying and swirling in every direction, and to try, out of the dizzying maze, to construct a truthful chart of the vital conditions and tendencies of the organism. If he cannot do this, or attempt to do it, if he has not been previously trained to a profound feeling for the complexity and intricacy of vital processes, he is liable to lay heavy and clumsy hands upon them, and to estimate them according to theories both coarse and crude. When he gives a medicine he simply "exhibits" it. He has no distinct conception of a train of vital events, among which he is to insert some new and deliberately contrived conditions, by means of which the direction of the whole series may be modified. This is the ideal formula for physiological therapeutics. It is far enough from being realized or realizable to-day; but it seems to me no one can doubt that it is ultimately destined to supplant the rule of traditional "Secundum artem," with which at present we must too often be content.

It would be indeed the merest pedantry to attempt to base existing therapeutics exclusively upon existing physiological knowledge. No practising physician can or would follow Herman's classification of remedies, when he places first the utterly useless oxide of carbon because we know all about it, and consigns to a limbo of doubt opium and quinine as drugs of which we know little or nothing. Whether we know or not, we are compelled to use them. But it is absurd to say that we know nothing because we do not know analytically. We do possess an accumulated amount of experience in regard to these priceless remedies which is of immense and scientific value, although the ultimate reasons for their action have not yet been demonstrated. But on this very account, and because an exact and quantitative formula cannot be given for the action of drugs, we are obliged to intrust their handling to the acquired tact of long practice. Now tact, mental or physical, can only be acquired by incessant and varied experience in the practical operations requiring the exercise of tact. How can be acquired the mental tact needed to unravel the complexity of vital phenomena as they unravel before us in the history of every sick person? how can be learned the tact needed to undertake the direction of these phenomena, except by previously prolonged study of vital phenomena in the simpler animal body free from disease?

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[1] Remarks addressed to the Massachusetts Medical Society at its Annual Dinner, June 12, 1889. See page 638 of this Journal.

If it be admitted that the dead body must be dissected, as was still practically denied less than a hundred years ago; if it be allowed that the lesions left by disease must be studied in autopsies, which are still often refused in obedience to the grossest superstitions; if it be conceded that medical students must have some clinical experience with the sick before they are allowed to graduate, concession which still often remains a paper right, — it equally follows that the same persons must study living organisms, in the only way in which they can be studied, by analyzing, dissecting, and handling them in the process of life. There is no need now of wading through the horrors of physical pain amidst which Magendie laid the foundations of modern science. The use of anæsthetics obviates the objections on the score of cruelty for this as for other forms of surgical operation; and it is certainly one of the most extraordinary demonstrations of modern science that life can be so dissected and dismembered and yet persist.

The kernel of the question lies just here. Knowledge of the living organism, for practical purposes, must be obtained practically. Indeed, no knowledge is ever obtained in any other way, but only a verbal imitation of knowledge. The physician who has not learned to adjust himself to the intricate delicacies and fragilities of living organisms by laboratory study, is condemned to take his first lessons in dealing with life upon human beings. He is compelled, therefore, to experiment upon subjects who are often, if not always, far more valuable than the frogs and rabbits of the laboratory.

Sooner or later, if he is to be successful, his whole mind must have become modified in that mysterious manner in which the minds of students of nature do become changed, as they seem insensibly to blend with the phenomena they can profoundly contemplate. But the question is, shall this necessary training come sooner, or later? Shall it come economically, or with tremendous though carefully concealed expenditure of human life? Whether we will it or no, all practising physicians are constantly and professionally engaged in physiological experimentation, are trying the most audacious of experiments, — trying, namely, to deliberately modify the course of human life. Is it not evident, therefore, that we should strive to the utmost to obtain the most real and profound visions of life before we venture on our attempts at interference?

I should like, Mr Chairman, to mention an incident that occurred to myself in the course of a very simple laboratory experiment. I was examining the circulation of a frog's lung by means of the Holmgren apparatus. I happened to so focus my lens that all the outlines of the capillaries and blood corpuscles disappeared, leaving visible only the spaces between the epithelial cells. Nevertheless there remained a vision of the streaming movement of the invisible blood through the ramified spaces. The streaming was so rapid, so energetic, so ceaseless, it seemed as if it were pure motion or force divorced from the accidents of matter. The microscopic shred of tissue from the insignificant animal seemed for the moment to give a glimpse of a mighty vision of endless life, streaming with infinite energy into the minutest particles of an infinite universe. The impression was indescribably powerful. Since then I have confronted new students with this same impression, for the purpose of throwing open at once the horizons towards which they were henceforth to keep their eyes directed. And this is what it seems to me all students in medicine should learn to do.

Original Articles.

ON THE DISTRIBUTION OF DISEASE.

A REPORT AND AN APPEAL FROM THE COMMITTEE OF THE MASSACHUSETTS MEDICAL SOCIETY ON THE DISTRIBUTION OF DISEASE.[1]

BY W. EVERETT SMITH, M.D.

Your committee, although by no means ready to present even a preliminary report upon the distribution of disease within the State, would at the same time, in order more effectively to prosecute their studies, make the following brief statement, outlining to some extent the *importance* and the *nature* of the work in which they solicit the active co-operation of the society at large.

Diphtheria, Scarlatina, and Phthisis. — Recent studies by Kelly[2] in England upon the distribution of diphtheria in the West Sussex District, and by Barnes[3] upon the distribution of diphtheria and scarlatina, seem decidedly opposed to the conclusions of Maier[4] that "it is more than doubtful whether the geological position of the place influences the epidemic appearance of diphtheria." Dr. Barnes, although the number of the cases which he observed is small, finds that the relative proportion of outbreaks of diphtheria to the inhabitants is 1 to 1800 on gravel and 1 to 300 on clay soil.

In his graphic outline maps of Great Britain he shows also "that there are certain counties in which the death-rate from diphtheria is invariably high and certain others in which it is invariably below the average; that there are some counties in which it is usually though not invariably high, and others in which it is usually though not invariably low." In comparing these maps, it is clear that "not only are the favorite habitats of diphtheria different from those of scarlet fever, but it will be observed that scarlet fever, like other infectious diseases, is most prevalent and most fatal in the districts containing the most dense population. Diphtheria, on the contrary, is most prevalent in the comparatively thinly populated districts." It seems therefore as though diphtheria, although undoubtedly infectious and spread from person to person more easily in populous districts, yet finds in rural districts an agency which favors a more prolific development; and a reasonable explanation seems to be dampness of soil, combined, if you will, with filth.

In this connection a study of the epidemic of malignant diphtheria which occurred in Vermont in

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[1] Read at Annual Meeting of the Massachusetts Medical Society, June 12, 1889.

[2] Sixth Annual Report of the Condition of the Combined Sanitary District of West Sussex. By Chas. Kelly, M.D., F.R.C.P., 1889; also Fourteenth Annual Report, 1888, also personal correspondence.

[3] An Address on the Etiology of Diphtheria. By Edgar G. Barnes, M.D., Brit. Med. Journal, July 28, 1888.

[4] *Vide* Annual of the Universal Medical Sciences, 1888, vol. iv. p. 303.

1879 is not without its lesson.[5] Here was an epidemic originating among school children and ascribed by medical opinion to filth pollution of the brook where the children drank. The decaying carcasses of horses and sheep were indeed found near the stream above the school, yet the water taken near the school-house where the children drank proved upon analysis to be remarkably free from evidences of contamination.

On the other hand, although we have little doubt that among the etiological factors of the disease sudden and violent changes of atmospheric conditions play an important part, yet it does not seem clearly proven that climatic causes alone account for all cases, identical as may be the curves representing temperature and the occurrence not only of diphtheria, but of many other diseases as well. I wish, however, that we might, with your aid, collect some climatic records to serve as data for future study.

The influence of the soil in the causation of diphtheria is strongly emphasized by Dr. Kelly in his annual reports, and in addition he writes me that while "the mortality from diphtheria and lung diseases is much higher on retentive than on porous soils, the mortality from phthisis and from all causes combined is very nearly the same on each variety of soil." Nor can it be maintained "that deaths which used to be registered as phthisis are now included under lung diseases, because, although there is an increase under the latter head, it is by no means equal to the decrease under phthisis."

One criticism upon his work, he says, has been that he has neglected the influence that improved drainage has had upon the decrease of disease. In reply he writes me that the fact has been that "while in thickly settled towns drainage often lowers the subsoil water, in the country districts the land drains are very shallow and only drain areas in a very local manner. A land drain affects only land a few feet on each side, and you do not find houses affected by it as you do in large towns. Again, floods are more common since land drainage has been carried out; hence the low-lying places where you generally find the villages are just as wet as before."

A further study upon phthisis made by Ransome[6] the past year clearly corroborates the soil moisture theory of Dr. Bowditch, while the death-rate from the disease in New Hampshire of 23 per 10,000 population is so far below the rate in Massachusetts, 33 per 10,000 population, that it calls for a deeper study of practical importance to us all.

Enteric Fever and Summer Diarrhœas. — As regards enteric fever, Dr. Grimshaw,[7] registrar-general for Ireland, has shown that Dublin, situated in a county with a low enteric death-rate, has a greater mortality from the disease than London, situated in a county with a high rate; and Dublin rests upon a bed of clay and rock which retains moisture and filth like a basin.

So, too, Medical Inspector Ballard, while recognizing the influence of high temperature and dietetic errors in the production of summer diarrhœas, believes that the temperature of the soil is a factor of greater importance, so that houses built on a permeable soil are especially likely to be visited by summer diarrhœas.

Intermittent Fevers. — Maurel, after a six years' study of intermittent fevers, believes that it is easy to distinguish healthy from marshy soil, and has found that the same organisms exist in the air of marsh regions as those that have been found in the blood of persons suffering from marshy diseases. An idea kindred to this is the opinion given me regarding phthisis by Prof. Cleveland Abbé, of the U. S. Signal Office, that "rain and fog precipitate and wash downward germs of diseases which are floating in the air; therefore the low valleys and meadows are more subject to consumption than high lands or dry interior. It is not because the temperature, humidity, and pressure vary, but because rain and fog prevail when they vary, that the disease is developed in that locality."

Upon this theory, it is clear that in addition to the varying retention of moisture by different soils we shall have to consider also the variations of heat absorption and radiation by different soils, since the precipitation of atmospheric moisture is due in large measure to a lowering of atmospheric temperature.

Forests. — A further study in the same direction is the influence forests exert upon climate and health. Little is now known authoritatively upon this subject, but it would be very instructive if we could have recorded cases where the growth of trees, and also where the removal of woods, have perceptibly modified atmospheric conditions or the health of communities. An apparent connection between malaria and the destruction or cutting down of forests has been reported to me by Prof. Fernow, chief of the Forestry Division, U. S. Department of Agriculture, although the case reported is not within this State. "The town of Abingdon, Md., had been noted for its healthfulness and the absence of chills and fever, until the forest between it and the river, which is four or five miles distant to the west, had been cut down, when a regular epidemic of the disease infected the place."

The subject is worthy of more extended study, since there can be little doubt that whatever influence woods may have upon the moisture of the air, they act not only as reservoirs to preserve the water-supply from too rapid evaporation and to moderate the violence of droughts and floods, but also as barriers against fierce winds and air currents.

This imperfect outline of the *possibilities* of investigative work will indicate in some degree the *aims* of the committee. We do not suppose that the results of our study will settle the ultimate causes of disease (because they are many and vary with many circumstances), but we do hope that it will reveal some of the more important proximate causes connected both with soil and with climate.

What I desire, however, and what I must have in order to render the study thorough and complete, is that some of you will feel interest enough in the work to volunteer to assist me by describing as definitely as possible, either in words or on rough charts, the relative location of specified diseases and neighboring bogs, marshes, woods, and clay or sand areas; or, what I should very much prefer, by plot-ting out upon a map of the town or village where you live the approximate location of the occurrence of the different diseases which we may think it profitable to study. If it be not possible to indicate the distribution of *sickness* in either of these ways, I trust I may at least receive maps or diagrams illustrating the distribution of the *fatal cases*, so that these disease or mortality maps may be intelligently compared with the geological charts of the same district. These geological charts, fifty-six in number, Prof. Shaler hopes to have ready for our study by September of the present year; and I hope I may by that time have received considerable disease data from the Fellows of this society, so that we in Massachusetts may see if we can prove any connection between disease and soil or climatic influences.

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[5] See Report of the National Board of Health, Washington, 1879, p. 274.

[6] Some Evidence regarding Tubercular Infective Areas. By Arthur Ransome, M.D. Transac. of the Epidemiological Society of London, vol. vi. N. S.

[7] *Vide* British Med. Journal, May 5, 1888.

In many cases it would be practicable to describe or plot out the record of only a single disease or a single epidemic or season; in other cases it might be possible to give the record for a year; while in some villages it may be that records covering several years could readily be given.

The diseases regarding which I am at present especially anxious to receive data (recorded facts, but not theories) are diphtheria, scarlatina, phthisis, typhoid fever, dysentery, summer diarrhœa, intermittent fever (malaria), rheumatism, and, if it be possible, tetanus. I shall be greatly indebted also for data upon the subject of forestry in Massachusetts or the immediately adjoining States.

I have already obtained the co-operation of a few in this work. I trust I may hear from others that are willing to devote a few stray hours to the service. At the very least, I hope that if I personally solicit co-operation (and I shall have to if I do not get voluntary offers of assistance) I shall receive a measure of the help I crave. For all such aid I will only too gladly give due credit and recognition.

I shall be pleased to answer correspondents who wish to aid me, and will then give any further details that may be necessary concerning the nature of the help that I here have asked.

21 Concord Square,
Boston, Mass., June 12, 1889.

Reports of Societies.

THE ONE HUNDRED AND EIGHTH ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY,

JUNE 11TH AND 12TH, 1889.[1]

Second Session.

SHORTLY after nine o'clock Wednesday morning the President, DR. CHEEVER, called to order the assembled Fellows.

The records of the last annual meeting were read by the Secretary, DR. FRANCIS W. GOSS, of Roxbury, and the annual reports of the secretary and of the treasurer, DR. FRANK W. DRAPER, of Boston, presented and accepted.

A communication was read from Dr. Gihon, of the navy, requesting contributions in aid of the Rush Memorial in Philadelphia.

The first paper of the day was by DR. J. A. JEFFRIES, of Boston —

ON PAIN IN THE SMALL OF THE BACK AND HIPS.

Dr. Jeffries' paper was intended to call attention to the importance of a complaint so little interesting as often to induce a careless diagnosis in the attendant. He suggested the different groups into which the subject should be divided, the means of forming a differential diagnosis, and the methods of treatment at our command, among which he valued electricity highly.

DR. PHILIP C. KNAPP, of Boston, agreed with Dr. Jeffries that the subject was one too often neglected by physicians. He had been especially interested in the traumatic lumbago of "railway spine." He had never seen a case of traumatic lumbago uncomplicated, but had always seen severe injuries to the back accompanied by it. It is to be borne in mind that pain in the back has as little to do with disease of the cord as it has with disease of the kidneys. He concurred with the reader as to the efficacy of electricity and also of the actual cautery.

DR. JAMES O. WHITNEY, of Pawtucket, R. I., referred to the diagnostic value of vomiting in pain in the back from passage of calculi. He agreed with the previous speaker as to the relation between pain in the back and spinal disease. He treated pain in the back with wet cups, the firing-iron, and blisters. He had supposed electricity was applicable to the more chronic conditions.

The next paper was by DR. J. C. MUNRO, of Boston, on

THE TREATMENT OF MALIGNANT DISEASE BY ESCHAROTICS.

Dr. Munro began by saying that escharotics were not the best and safest means for the relief of cancer in even a fair proportion of cases. The knife and the sharp spoon were the best. In a few cases caustics were better, but they must be pushed till the diseased tissue is completely removed, and the chance of recurrence is about the same in either case. Dr. Munro gave a list of escharotics, including the mineral acids, organic acids, caustic, salts, etc., reviewing the action of each, and then gave a historical summary of the treatment of malignant disease by means of them.

DR. GEORGE JEWETT, of Fitchburg, cited an instance in his own observation, where some application was made by a quack to a large cancer of the neck, with the result of causing delirium and death in two or three days.

The last paper of the session was by DR. EDWARD REYNOLDS, of Boston, on

MODERN METHODS IN TEACHING CLINICAL OBSTETRICS.

Dr. Reynolds' paper was a resume of the work done in clinical obstetrics in the Harvard Medical School. With it was associated the out-patient department of the Lying-in Hospital, which afforded an average of seven cases apiece to the third year class. Two students are always in residence at each of the two out-patient rooms of the hospital, from which they are summoned to cases of labor, of which they must prepare a report. They must also have had during the year clinical instruction in a case from the instructor of obstetrics. The value of this method is evidenced in the increased knowledge of the students, especially in abdominal palpation. The year's service included 447 deliveries, with 14 breech presentations, 13 low forceps deliveries, 4 high forceps, 8 versions, and 2 craniotomies, with one death among the mothers and 39 among the children. This remarkable result was due to the system of antisepsis, even though partially applied.

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[1] Continued from page 613.

Dr. Thomas H. Gage, of Worcester, expressed his pleasure at the careful and comprehensive methods of teaching now in vogue for the students of the Harvard Medical School.

Dr. James O. Whitney, of Pawtucket, R. I., referred to what he believed to be a point of value in diagnosis by abdominal palpation, and that was the pointing out by intelligent mothers of the place where the "small motions" were felt. This would determine where the feet and hands lay. He thought the abundant use of purgatives and douches was valuable in threatened sepsis.

Dr. J. P. Reynolds, of Boston, wished to corroborate the statements of the reader. The experience of Boston but confirmed the experience of Vienna, of St. Petersburg, of Dublin. The value of antiseptic obstetrics was no longer in doubt, and, in the face of the facts, no physician had a right to deny it.

Dr. B. E. Cotting, of Roxbury, being called upon in reference to the position of the fœtus *in utero*, said that he believed it got there naturally, occupied a natural position, and, if let alone, would follow a natural way in getting out.

Dr. Z. B. Adams, of Framingham, referred to the contrast between the present valuable opportunities in clinical obstetrics afforded by Harvard and those of earlier days. He would disapprove of the use of douches after normal labors.

Dr. John P. Maynard, of Dedham, called attention to the need of caution in making deductions. Under the best of care some cases do poorly, while others thrive under the worst conditions.

Dr. Albert P. Weeks, of Chelsea, endorsed Dr. Cotting's views as to the office of nature in the development and birth of the fœtus.

Dr. Charles H. Cook, of Natick, referring to statements made by high authority in reference to the responsibility of the accoucheur for bad results, said that such statements should be made with caution, or practitioners would be involved in a false position.

Dr. Cook's remarks brought to a close a quite extended discussion, after which Dr. W. Everett Smith, of Boston, from the committee on the distribution of disease in Massachusetts appointed at the last meeting, made a brief preliminary report of the work to be done, and solicited the co-operation of members of the society.[2]

The following delegates from other medical societies were then invited to the platform, of whom several made short addresses: Dr. D. M. Currier, Newport, N. H.; Dr. Henry M. Fenno, Rochester, N. Y.; Dr. C. M. Godding, Providence, R. I.; Dr. W. W. Wilkins, Manchester, N. H.; Dr. Frank B. Look, Middletown, Conn.; Dr. F. M. Eaton, of Rhode Island.

After a brief recess the Fellows were called to order to listen to the annual address, by Dr. Henry P. Walcott, of Cambridge, upon

PREVENTIVE MEDICINE IN MASSACHUSETTS.[3]

At the conclusion of Dr. Walcott's address the thousand Fellows of the society present formed the time-honored line and marched to the large hall of the building, where the white-spread tables made a handsome picture, and where Baldwin's Orchestra had already begun to enliven the occasion. Grace was said by the Rev. W. Stopford Brooke, pastor of the First Church of Boston, after which the tables were despoiled of an excellent dinner.

An hour later the anniversary chairman, Dr. James R. Chadwick, of Boston, called the assembly to order and addressed them as follows: —

Fellows of the Massachusetts Medical Society: I bid you welcome to the eighty-eighth annual repast of this society, now in its one hundred and eighth year. Yet in whose name I may be supposed to speak I have been unable to learn. My first impulse was to greet you in the name of this fair city, but this would be ill-becoming in the presence of the chief magistrate. I thought I might address you in the name of the society, but your president at my side has claimed what he facetiously calls five minutes for that express purpose. In my predicament as to what I should say I sought counsel with my predecessors in office, who with one voice told me I was only expected to give utterance, as they had done, to a few vague generalities. This advice I might have followed had I not recently been told the following story, and feared, with more reason than the victim, a like result.

Mr. Charles Francis Adams, president of the Union Pacific Railroad, was given a reception in a Western town where he, in company with Gen. Sherman, chanced to be detained over night. The distinguished guests were received upon the stage of the theatre by the leading men of the town, while the auditorium was crowded with inhabitants of the place. The audience was addressed by Gen. Sherman, and subsequently by Mr. Adams with his usual terseness and vigor, when the mayor rose and said, "Fellow-townsmen, we have reason to be gratified, yes, highly delighted, with Mr. Adams' platitudes." Gentlemen, I dared not trust myself to the mercy of those who are to follow me. I may, however, escape criticism by clothing my thoughts, as I look down upon this sea of faces, in the language of the most charming writer of recent times, Robert Louis Stevenson. In the dedication of a collection of his fugitive poems, entitled "Under-woods," to the physicians who have given him help and comfort, he writes as follows: —

"There are men and classes of men who stand above the common herd: the soldier, the sailor, and the shepherd not unfrequently; the artist rarely; rarelier still the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practise an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and, what are more important, Heraclean cheerfulness and courage. So it is that he brings air and cheer into the sick room, and often enough, though not as often as he wishes, brings healing."

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[2] See page 632 of this Journal.

[3] See pages 573, 597, 625, of this Journal.

There can, however, be no question but that it is my duty and privilege to express, in your name, to the guests that are with us from other cities, the great pleasure that their presence affords. Thus I take pleasure in welcoming to our board Dr. Fordyce Barker, of New York, ex-president of the New York Academy of Medicine; Dr. Mary Putnam Jacobi, of New York; The Rev. W. Stopford Brooke, late of England, now of Boston; Charles W. Eliot, president of Harvard University; Dr. Stanley Hall, president of Clark University, Worcester; Dr. William Gardner, professor of Gynæcology in McGill University, Montreal.

With such an array of eminent guests I may well assume the rôle which Kenyon attributed to Crabbe Robinson of being a "Feeder of lions."

Of the other guests whom we expected I may say that Dr. J. S. Billings, of Washington, has been unexpectedly summoned to England by cable and sails from New York to-day. Prof. William Osler, of the Johns Hopkins Hospital, Baltimore, has been summoned to Montreal by the serious illness of his father; while Prof. H. C. Wood, Jr., and Dr. James C. Wilson have been at the last moment detained at home by the exigencies of their professional work.

Dr. Chadwick then introduced **Dr. D. W. Cheever**, of Boston, president of the society, with the remark that he was the grandson of the author of the appended statement: —

HISTORY OF A CASE OF ENCYSTED DROPSY, WITH A DISSECTION OF THE SEVERAL CYSTS:

as communicated to the American Academy of Arts and Sciences January 31, 1787, by Abijah Cheever, Boston.

I presented this "History," etc., to the American Academy of Arts and Sciences January 31, 1787. Soon after, one of the faculty of this town requested to read a copy thereof, which I sent him for that purpose; and notwithstanding he had never seen the patient or subject, this copy was published in the second volume of the memoirs of the London Medical Society, vol. 368, art. 32, and *his name* annexed thereto as author, who has also been honored by the Medical Society for this communication. By all of which it appears he has completely arrogated this History to himself; thereby taking from me, not only my Right, but also exposing me to an essential injury, the uncertainty who is the author.

I am therefore obliged, to obtain the first and prevent the latter, to adopt this procedure effectually to establish these two objects, after having waited with much patience, in vain, in hopes to have had such justice done me as would have made it *unnecessary* for me to have taken any order upon the subject.

Boston, August, 19, 1794. A. Cheever.

Dr. Cheever spoke as follows: Fellows of the Massachusetts Medical Society: On this one hundred and eighth anniversary your president congratulates you on the vigorous growth of a society which cares for the health of two millions of people. During the past year I have visited every district in this State, and have found the local societies united, active, and prosperous.

Massachusetts, poor in soil and yielding scanty returns to the plough, has a factory by every brook and a schoolhouse in every valley. Better than this, I have found a hospital, cared for by our members, in every large town.

This is as valuable to the profession and to the community, to promote clinical observations, to control contagion, and to care for accidents, as is the school or the mill.

Nigh two thousand doctors belonging to the Massachusetts Medical Society are scattered through all these towns and villages.

Our older Fellows, seamed with exposure and with cares, cannot but look to the younger physicians for assistance and for progress. How is this great army of regular physicians to be recruited?

Here in Copley Square and in Cambridge we find a great educational centre, where fully two thousand youths, ingenuous and ardent for learning, are pursuing science and the liberal arts.

Here are our recruits, and they have already raised the tone of medical education in our State, and we look to them confidently to raise it higher, year by year. Following the motto of our society, *Nature the Guide*, may they observe as their code of ethics the golden rule which constitutes gentlemen, and, being men, count no one alien who belongs to the human race.

Dr. Chadwick then introduced **Dr. H. P. Walcott**, of Cambridge, as follows: Before calling upon the orator of the day, who as president of the State Board of Health has served us all long and faithfully, I shall venture to set before him the model of an address, taken from an authority which he can hardly dispute. I hold in my hand the first book presenting a serious and valuable compilation of vital statistics which was published in England. It is entitled, "Natural and Political Observations mentioned in a following Index and made upon the Bills of Mortality, by Capt. John Graunt, Fellow of the Royal Society; London, 1665." The "Epistle Dedicatory" is addressed "To the Right Honourable John, Lord Roberts." In reading the first page of this epistle I shall make such slight changes as to adapt it to this audience: —

"Fellows of Massachusetts Medical Society: As the favours I have received from you oblige me to present you with some token of my *gratitude*: so the especial Honour I have for you hath made me *sollicitous* in the choice of the *Present*. For, if I could have given you any choice *Excerptions* out of the *Greek* or *Latin* Learning I should (according to our *English Proverb*) thereby but carry Coals to *Newcastle*, and but give you *Puddle-water*, who, by your own eminent *Knowledg* in those learned *Languages* can drink out of the very *Fountains* yourself.

"Moreover, to present you with tedious *Narrations*, were but to speak of my own *ignorance* of the *Value* which your patients and the Publick have of your Time. And in brief, to offer anything like what is already in other Books, were but to derogate from your learning, which the world knows to be universal and unacquainted with few useful things contained in any of them. Now having (I know not what accident) engaged my thoughts upon the *Bills* *of Mortality*, and so far succeeded therein, as to have reduced several great confused *Volumes* into a few perspicuous *Tables*, and abridged such *Observations*, as naturally flowed from them into a few succinct *Paragraphs*, without any long series of *multiloquious Deductions*, I have presumed to sacrifice these very small, but first published, *Labours* unto you, as unto whose benign acceptance of some other of my *Papers*, even the birth of these is due; hoping (if I may without vanity say it) they may be as of much use to persons in your places, as they are of little or none to me, which is no more than the fairest *Diamonds* are to the *Journeymen Jueller* that works them, or the poor *Labourer* that first digged them from the earth."

Dr. Walcott declared his intention of speaking about "puddle-water," and he went on to describe the course of efforts made in the past to secure an improvement of our drainage system. "I am now glad," he went on to say, "to be able to tell you that, after two years' consideration, the newly reconstituted board of health has been able to report to the Commonwealth a plan of metropolitan drainage which has met with no serious criticism from any source whatever, which has passed both houses of the legislature, and has received, or is likely to receive, the signature of the governor, since there is no serious objection; and that one of the most important measures for the health of this district will be taken, and taken, I am glad and proud to say, very largely in consequence of the action of the State Board of Health."

The Chairman then alluded to the absence of Mayor Hart, who had been obliged to leave at an early hour to witness a review of school children at Franklin Park. He then introduced Dr. Fordyce Barker, of New York, who was greeted with great applause. In opening his brief remarks he said that he regretted extremely that his physical condition rendered it impossible for him to say more than a few words. He said that he had always thought that there was a great deal to be learned from a society of this kind. Continuing, he said:

I have always regarded the Massachusetts Medical Society as a model of learning and having among its members men of the greatest talent and highest ability in the medical profession. Even though I have moved to New York, I frankly confess that I still retain this feeling. Certainly this society has always held a very high rank, and you have had and always will have many great men — great men who stand above the level of their contemporaries in point of ability and requirements of the profession. Many of your older members are still alive, and have our greatest respect and reverence. Therefore it is very presuming for one coming from the village of New York to attempt to address you.

In introducing President Eliot, of Harvard, Dr. Chadwick said that there had been two presidents of Harvard, Charles Chauncy and Leonard Hoar, who took care of the bodies as well as the souls of their students, but none of them has done so much for the medical profession as President Eliot. He stimulated the medical school to fresh exertion, and has stood at the forefront of other schools in giving the best education to medical students. A gentleman has suggested two or three questions which have been under discussion in the university and which have not been answered to the satisfaction of the medical profession. The first of these was in 1727, by a candidate for the degree of master of arts. It was, "Should the fees of physicians on the Lord's day be counted as their own?"

Another was discussed by Jeremy Belknap, in 1765: "Did Adam have an umbilical cord?" Another by Josiah Quincy in 1731: "When Balaam's ass spoke, was there any change in its organs?"

President Eliot responded as follows: —

Mr. Chairman, and Fellows of the Massachusetts Medical Society: I have never been more impressed with the value of bibliographical research than I have been to-day in listening to the introductions of your chairman. I knew before that he had greatly served the profession in the city of Boston by his labors in behalf of the Medical Library, but I did not know before how greatly he had served himself. The chairman has alluded very kindly to the little service I have been able to render, as president of the university, to the Medical School, and, through the Medical School, to medical education in general. I can only say on that subject that there is no part of the work which I have been able to do in the university which has given me greater satisfaction than the work which has been done in the last twenty years here for medical education.

As I look about the world, it seems to me that educated people, including a large proportion of medical men, have a very faint idea of the importance of cultivating biological science, including medicine. I see, for instance, that it is a great deal easier in the United States to get a school of theology indorsed than a school of medicine. Well, now, for thousands of years people have had a great hope that a correct religious belief would contribute greatly to human happiness. And there is some truth in this idea, but not nearly as much as the race has expected. And about one hundred and fifty years ago a number of political philosophers thought that human happiness might be greatly promoted if we could only come at a just and equitable form of government; if, in short, a just republic could replace despotism. And there is some truth in that idea; but we have found out that there is not nearly as much in that conception, in that hope, as those philosophers expected. And here, within fifty years, people have supposed that the progress of chemistry and physics, as embodied in industries and in transportation, were going really to contribute immensely to the sum of human happiness. But I think we have learned already that steam engines, and steam furnaces, and steam-heated houses do not so much contribute as we had expected to the welfare of mankind. In short, it is not to chemistry and physics and their applications that we may reasonably look for great ameliorations of human condition. What are the great evils that afflict mankind and diminish the sum of human happiness? Are they not biological evils? Are they not sterility and imperfect reproduction and disease and untimely death? And what are the forces with which the human race can fight these evils directly, — not indirectly, but directly? Are they not the biological sciences, including medicine? And so I say that there is nothing which can be the object of human benevolence of such direct importance to human welfare as those institutions which teach an enlarged biological science.

Moreover, the community needs to be instructed that it is wasteful and improvident not to raise up teachers and practitioners in this science. It is wasteful, I say. It is like the waste which the state makes which spends millions to repair that part which is reparable of the infinite damage which a broken dam causes, but has never spent a dollar for a school to train engineers that can build dams that will not break. Now, medical men must be the missionaries and preachers of this idea. They should be the people that influence public-spirited citizens and States to foster and promote in every way within their power the advancement of medical and biological research. Here is a direct mode of contributing to the future happiness and welfare of mankind.

Now, to come to a much smaller but very important point, let me call the attention of your society to the great need there is in the State of Massachusetts of a law for the registration of medical practitioners. Here are new States — California, Minnesota, Illinois, — and some of the older States, like New York, which have already adopted wholesome legislation for medical registration. And the result is that all the quacks are "dumped" upon Massachusetts and they make an effective opposition to the enactment of a suitable registration law. I ask the members of the Massachusetts Medical Society unanimously and with all the forces at their command — and they are many — to urge upon the legislature of Massachusetts to correct this crying evil — an evil which is felt not by the rich and well-to-do classes in the community, but by the poor, ignorant, miserable, and superstitious classes — classes which the profession which you, gentlemen, adorn, has always served, befriended, and enlightened.

Dr. Mary Putnam Jacobi, of New York, was then introduced as one whose life had been spent in pursuing the most abstruse subjects in medical science.[4]

The Rev. W. Stopford Brooke was then called on, and in a few words expressed his pleasure at being present with the doctors, and told several stories in illustration of it.

Prof. William Gardner, of Montreal, being called upon, complimented the physical appearance of the members of the society, and said that both his school and the "American colony," to which Dr. Chadwick had referred, were flourishing.

Dr. Stanley Hall, president of Clark University, was the last speaker.

Dr. Hall detailed the results of his observations during his recent trip to Europe. He had noted that medical education was there rapidly becoming more and more specialized in all that pertained to hospital and clinical work; that greater stress was being laid on those sciences that underlie the science of medicine, such as neurology, physiology, and biology generally; and that there was an increased interest in the study of the nervous system and of its connection with disease. The speaker closed by expressing his adherence to the motto of Hippocrates: "God-like is the physician who is also a philosopher."

(To be concluded.)

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[4] See page 631 of this Journal.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING.

The annual meeting of the Council was held at the Medical Library, Boston, on the evening of Tuesday, June 11, 1889. One hundred and thirteen councillors were present. The meeting was called to order by President Cheever, at seven o'clock.

The Secretary announced the names of sixty-four Fellows who had been admitted during the year, and of thirty-nine who had died.

FINANCES.

The Treasurer's report showed the year's receipts — including a balance of $2,515.71 from the previous year's accounts — to be $11,794.30. The disbursements amounted to $8,492.59, leaving a balance of $3,301.71. The invested funds of the society amount to $33,420.17. The society now bears upon its catalogue the names of 1,765 members.

The report further stated that assessment dues to the amount of $144.00 have been remitted by vote of the councillors, upon the recommendation of the Committee on Membership and Finances. Seven members of the society have lost their membership by removal from the State and neglect of their assessment obligations. Since the last annual meeting the name of one Fellow has been dropped from the roll, in accordance with the By-Laws, for five years' delinquency in assessments. Four members have resigned their membership, and two have been reinstated by vote of the Council.

In accordance with the recommendation of the Committee on Membership and Finances, reporting through Dr. Minot, it was voted that two-fifths of the balance remaining in the treasury, amounting to $1,320.68, be distributed among the district societies.

On recommendation of the same committee, several Fellows were allowed to resign, and others were permitted to become retired members.

Reports were received from the Committee on By-laws of the District Societies, and from the librarian, Dr. E. H. Brigham.

ELECTION OF OFFICERS.

The Committee on Nominations reported the following list of candidates for the offices of the society for the ensuing year, and the same were elected by ballot: Dr. David W. Cheever, of Boston, president; Dr. C. Ellery Stedman, of Dorchester, vice-president; Dr. Frank W. Draper, of Boston, treasurer; Dr Charles W. Swan, of Boston, corresponding secretary; Dr. Francis W. Goss, of Roxbury, recording secretary; Dr. Edwin H. Brigham, of Boston, librarian.

Dr. James C. White, of Boston, was chosen orator, and Dr. Joseph Stedman, of Jamaica Plain, anniversary chairman for the next annual meeting of the society.

THE NEXT ANNUAL MEETING.

It was voted that the next annual meeting of the society be held in Boston, on the second Wednesday in June, 1890.

APPOINTMENT OF COMMITTEES.

The President nominated and the following were appointed to constitute the Standing Committees:

Of Arrangements. — O. K. Newell, V. Y. Bowditch, F. B. Harrington, H. L. Burrell, R. W. Lovett, J. Homans, 2nd.

On Publications. — G. C. Shattuck, R. M. Hodges, B. E. Cotting.

On Membership and Finances. — F. Minot, B. S. Shaw, J. Stedman, E. G. Cutler, L. R. Stone.

To Procure Scientific Papers. — H. P. Walcott, C. W. Cooper, E. H. Bradford, S. B. Woodward, W. L. Richardson. L. Wheeler.

On Ethics and Discipline. — G. J. Townsend, G. E. Francis, A. H. Johnson, C. Howe, F. C. Shattuck.

On Medical Diplomas. — A. H. Cowdrey, E. J. Forster, F. S. Watson.

On motion of Dr. Benjamin Cushing, it was voted that a committee of five be appointed by the chair, who shall report at the meeting in October next whether any changes are needed in the laws relating to the commitment of the insane.

The following were appointed as the committee: B. Cushing, C. F. Folsom, J. Crowell, H. Derby, F. W. Page.

The Council adjourned at 8.15 P.M.

AMERICAN LARYNGOLOGICAL ASSOCIATION.[1]

ELEVENTH ANNUAL CONGRESS, HELD IN WASHINGTON, D. C., MAY 30, 31, AND JUNE 1, 1889.

Dr. John O. Roe, Rochester, read a paper on

THE TREATMENT OF DISEASED TONSILS WHEN UNATTENDED WITH HYPERTROPHY.

The conditions referred to are of marked clinical importance, but their consideration is ignored by writers upon these subjects. The most common form of disease of the tonsil is hypertrophy, and in children it is rare to find any other form. During adolescence the tonsils may diminish in size but they do not return to their normal condition. The small tonsils in adults have often followed hypertrophy. This is a point in favor of the removal of enlarged tonsils. The two forms of disease of the tonsil to which attention was called were, first, chronic disease of the crypts and lacunæ, and, second, fibroid degeneration of the stroma of the organ, the cicatricial form of the disease. The first is the result of chronic follicular catarrh of the tonsil, and is usually associated with chronic follicular catarrh of the pharynx. The treatment of these conditions is important, not only on account of the disease itself, but also because they are the source of recurrent trouble and may cause reflex symptoms. Local applications are practically useless. The galvano-cautery, which is useful in the treatment of hypertrophied tonsil, may be employed here, but is not as efficient as it is in the former condition. The treatment *par excellence* is ablation with the knife. The diseased crypts may be laid open and cauterized with chromic acid or fused nitrate of silver. Excision is, however, the best plan. It is rarely advisable to attempt removal of the whole mass at one time on account of the adhesions to the pillars. The use of cocaine lessens pain and hæmorrhage. In every instance in which the speaker had employed excision the cure had been perfect, with entire relief from the attendant symptoms.

DISCUSSION.

Dr. H. L. Swain, New Haven, reported a case in which recurrent attacks of swelling of the lingual tonsil were caused by the presence of hard masses in the faucial tonsil. The attacks were subdued by treatment of the crypts, by cutting into them with the galvano-cautery and thoroughly cauterizing their interior.

Dr. J. Solis-Cohen, Philadelphia, had seen many cases of spasmodic cough due to nothing but the presence of these masses in the crypts and lacunæ of the tonsil. These had been found not only in enlarged but also in apparently contracted tonsils. It is sometimes necessary to produce some gagging so that the posterior portion of the tonsil presents, in order to discover this condition. In enlarged tonsil the best treatment is probably excision, but in these atrophied tonsils he had pressed the matter out with a blunt scoop and then applied a simple astringent, consisting of creasote gr. j; iodine gr. j; potassii iodidi gr. v; to glycerine ℥j. If this does not answer, he cuts the crypts open with scissors and scrapes them as thoroughly as possible. This affection is not as thoroughly appreciated by the profession as it should be. He had seen cases where cough existing for five to ten or more years had been permanently relieved by treating this condition.

Dr. William H. Daly, Pittsburg, referred to cases in which the patients were really sick as the result of these lacunæ becoming filled with cheesy matter.

Dr. F. I. Knight, Boston, described a case of long-continued, irritative cough in which the removal of a cretaceous mass as large as a pea from a crypt of the tonsil was followed by complete cure.

Dr. Samuel Johnston, Baltimore, referred to three cases in which the collection, instead of consisting of soft, cheesy material, was hard, looking like spicules of bone, and adhered with great intensity. These bodies were not limited to the tonsil, but were also found on the lower part of the fauces and on the post-pharyngeal wall.

Dr. Harrison Allen, Philadelphia, stated that he had referred to this condition in a paper published in 1882. The solid matter is retained in the crypts. This pressure is often produced by the anterior fold. Sometimes the secretion has gotten out of the tonsil, but is still retained behind the fold. More frequently these masses are beneath the tonsil, under an adventitious membrane.

Dr. J. Solis-Cohen, Philadelphia, read a paper on

A CASE OF SARCOMA OF THE THYROID GLAND.

The case was one of sarcoma of the thyroid gland with pressure on the right sympathetic nerve; unilateral tonic spasm of the laryngeal muscles; intermittent clonic spasm of the muscles of the opposite side. There was stenosis from the pressure of the tumor. For this tracheotomy was performed. This afforded relief for a number of months. Hæmorrhage occurred twenty months later, but was controlled without much difficulty. Gradually marked disturbance of the two pneumogastrics supervened, and there was great interference with respiration. It was accidentally discovered that any irritation of the mucous membrane of the trachea would relieve the dyspnœa and at once the lividity of the face would disappear. This effect was readily produced by touching the posterior wall of the trachea with a bent wire passed through the tracheotomy tube. The patient died of exhaustion.

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[1] Concluded from page 618.

At the invitation of the President, the afternoon was devoted to an excursion to Mount Vernon.

Saturday — Third Day — Morning Session.

Dr. C. C. Rice, New York, read a paper on

SOME UNUSUAL MANIFESTATIONS OF TUBERCULOSIS OF THE LARYNX.

The first unusual manifestation referred to was where syphilis and tuberculosis of the larynx coexist. Here the lesions of one process mask those of the other. Here the prognosis depends upon which is the more active condition. This combination is more common than is generally supposed, and probably some cases of cure of supposed tuberculosis should be placed under this head. A second unusual manifestation is the engrafting on the tuberculous process of a new tissue, rendering the diagnosis difficult. This new tissue may be of two forms, either a granulation tissue or a papillomatous growth. The third condition was adhesive inflammation at the anterior ends of the vocal bands. This must be rare, as the tubercular process shows little tendency to cicatrization and healing. It is liable to occur only when the cords are immovable and there is general proliferation of tissue. The last condition referred to was one in which the tubercular deposit in one arytenoid was the only manifestation of the disease in the larynx, the remaining parts of the larynx being perfectly normal.

DISCUSSION.

Dr. W. H. Daly, Pittsburg, was satisfied from his experience in three or four cases that in some instances tubercular ulceration of the larynx may be cured. In these cases there was no evidence of syphilitic disease, and in at least some of them the tubercle bacilli were found. Recovery has followed the use of alkaline sprays and inhalations, with the free use of iodoform. He believed that tuberculous ulceration of the larynx might occur without evidences of tubercular deposit elsewhere.

Dr. J. C. Mulhall, St. Louis, thought that there might be a catarrhal ulceration of the larynx, and that this was a curable condition. He did not think that it would be easy to prove that tubercular disease of the larynx was ever primary, although it is sometimes the first sign of the condition. In tubercular ulceration of the larynx he had used pure lactic acid and had seen the ulceration heal, but he could not say that he had ever seen life prolonged to any appreciable extent.

Dr. F. I. Knight, Boston, had not the slightest doubt that tubercular ulceration of the larynx does get well. He had seen such ulcers heal under alkaline sprays and iodoform, and more especially under lactic acid. He thought that it was possible to have the tubercular disease of the larynx as a primary affection, but in the majority of cases careful examination will reveal evidences of disease of the lung. He did not regard changes in the respiratory murmur and in respiration as the most important signs of early phthisis. He placed more reliance upon the localized râles which are heard in coughing. In order to develop this sign the patient should not inspire immediately before or after the cough, but should cough from a rest. He had seen but a few cases in which he regarded the disease as primary in the larynx.

Dr. W. E. Casselberry, Chicago, reported a case in which he found catarrhal ulcerations of the larynx. These readily healed under cleansing treatment,and there has been no return of the ulceration during a period of two years.

Dr. J. N. Mackenzie, Baltimore, thought that the question of the possibility of the existence of primary tubercular disease of the larynx had been settled by examinations upon the post-mortem table, where, in a few cases, careful examination of the body revealed tubercular deposit nowhere but in the larynx. While a tubercular ulceration of the larynx may heal, this by no means indicates the cure of the disease. I have seen the coexistence of syphilis and tuberculosis in the larynx several times, and it is difficult to say which is the syphilitic and which the tubercular ulceration. The only test is that of treatment. He had never seen what could be called catarrhal ulceration of the larynx. In regard to treatment, he thought that more harm than good was produced by the employment of harsh measures. There is a form of ulceration which occurs in the later stages of phthisis, principally near the bifurcation of the trachea, which is probably due to the corrosive action of the sputa.

Dr. W. C. Glasgow, St. Louis, believed that tubercular ulcers of the larynx were never healed. He had seen cases of ulceration of the larynx heal under treatment, but he did not consider these to be true tubercular ulcerations. These have healed under simple treatment. He had used with great satisfaction, during the past two years, the peroxide of hydrogen in the treatment of such ulceration, and under its use there is rapid healing. He did not believe in primary tubercular disease of the larynx. In all the cases that he had seen there had been more or less disease of the lungs. In true miliary tuberculosis of the larynx he had always found some evidence of disease in the lung, and these cases, he thought, never recovered. He had seen cases of catarrhal ulceration of the larynx.

Dr. S. Solis-Cohen, Philadelphia, read a paper on

THE OCCASIONAL TOPICAL USE OF SOLUTIONS OF NITRATE OF SILVER IN THE TREATMENT OF CHRONIC LARYNGITIS.

The cases reported were not due to nasal disease or obstruction, nor were they those in which all topical treatment is unnecessary. Where indigestion, constitutional disease, or diathesis have been present these have received due attention. It was simply of topical applications for the relief of local conditions that he spoke. All have encountered cases of chronic laryngitis, especially in singers, clergymen, lawyers, etc., in which, after all discoverable sources of irritation, local or general, have been removed, and approved topical treatment suited to the individual case has been faithfully tried for a longer or shorter time, improvement takes place to a certain point and then stops. Perhaps all visible evidences of disease except an irregular, pinkish striping of the vocal bands have disappeared, or perhaps there would be a faint uniform coloration, or maybe only a loss of lustre, but something there would be that persisted and that prevented the patient from resuming with comfort full use of the voice in singing or speaking, or perhaps even in ordinary conversation.

It is in such conditions as these, the last obstinate remnants of the disease, that he had derived considerable satisfaction from the topical use, by sponge, cotton-wad, or brush, of weak solutions of silver nitrate, about ten grains to the ounce, applications being made every day for some two or three days until some congestive reaction is produced; after that at longer intervals. In the course of treatment, too, in some cases before reaching the last stage above described, he had found recovery apparently hastened by occasionally substituting stronger solutions of silver nitrate, forty to sixty grains to the ounce, for the iodized glycerine, tannin, tar, or other routine application. A visible increase in congestion immediately follows the use of the silver solution, but this passes off quickly, and at the next visit great improvement is usually manifested. These applications are made once in about two or three weeks, according to circumstances.

Dr. C. E. Bean, of St. Paul, read a paper on

TUBERCULOSIS OF THE TONGUE.

The author described two cases of tuberculosis of the tongue, one in a male and the other in a female. In both the disease had made extensive progress when they came under observation, and no operative measures seemed warrantable. In both there was well-marked involvement of the lungs. Death occurred in both cases a short time later. Attention was called to the differential diagnosis between tuberculosis, carcinoma, and syphilis. Carcinoma is to be excluded by the absence of glandular enlargement and of the lancinating pains peculiar to that disease. The question of syphilis can only be determined by the history and by the effect of antisyphilitic remedies.

Dr. J. C. Mulhall, St. Louis, read a paper on

THE LOCAL TREATMENT OF DIPHTHERIA.

The method of treatment which he suggested was based upon the following considerations: 1, that diphtheria is a germ disease; 2, that the specific microbe in the majority of cases selects the tonsils; 3, that unless checked by treatment the colonization of these germs results in local putrefactive changes with subsequent involvement of the general system; 4, that implication of the larynx or of the nasal passages increases the mortality; 5, that the disease is acutely adynamic. It had occurred to him that in this disease it would be better to wash out the throat than to spray it. This is accomplished by means of an ordinary syringe, and in this way the throat can be washed out without difficulty. The patient should be kept in the recumbent position, the head being brought to the edge of the bed. This procedure is repeated every hour during the day, and at no time is a longer period than three hours allowed to elapse. The only solution that he has used has been carbolic acid with compound solution of iodine. The water is frequently saturated with boracic acid.

The post-nasal space requires careful attention. In every case of diphtheria the nasal cavities should be kept sterile from the first. Where it is certain that the nasal cavities are not affected the insufflation of a non-irritating, antiseptic powder may be sufficient. Where there is uncertainty, or where it is certain that infection has taken place, the nasal cavities are to be washed out with a weaker solution of the same kind, not more than a teaspoonful for each nostril. For this purpose he recommended a small glass syringe with a bulbous extremity to prevent injury to the nose. After cleansing he frequently resorts to solvents, and has obtained the best results with papoid. In laryngeal diphtheria inhalation is the only practicable method. The inhalation of the vapor from slacking lime should not be forgotten. In several cases of laryngeal diphtheria he had obtained good results by placing the patient in a small room which had been fumigated with sulphur, and by keeping water to which has been added pine-tar and turpentine constantly at the boiling point.

DISCUSSION.

Dr. W. C. Glasgow, St. Louis, believed that diphtheria is a blood disease rather than a local affection and that the only objects in local treatment are cleanliness, disinfection, and loosening of the membrane. One remedy which he had used with advantage was the peroxide of hydrogen by spray. It seems to act by lifting up the membrane by the formation of gas. He considered the constitutional treatment as of the most importance, and he thought the bichloride of mercury and benzoate of soda were the most successful remedies. With these he uses very simple local treatment. In the cases of severe local manifestations the method described by Dr. Mulhall would be valuable.

Dr. D. Bryson Delavan, New York, referred to the value of the bichloride and cyanide of mercury, which he had used for ten years in the treatment of diphtheria.

Dr. W. H. Daly, Pittsburg, had on previous occasions recommended the use of calomel in the treatment of this affection, and he thought that it was as efficient as a local agent as it was active as a constitutional remedy. He believed that calomel in large and frequently repeated doses — two, three, four, or five grains to children one and one-half to two years of age — exerted a valuable therapeutic effect. He thought that a large part of the effect was from the local action upon the diphtheritic poison.

Dr. Harrison Allen, Philadelphia, referred to the value of trypsin as a solvent for the diphtheritic membrane.

Dr. F. Whitehill Hinkel, Buffalo, read a paper on

SOME MANIFESTATIONS OF LITHÆMIA IN THE UPPER AIR-PASSAGES.

The influence of lithæmia and allied conditions upon the upper air-passages has received little attention in laryngology, as is shown by the scanty literature extant upon the subject. There is a distinction to be made between distinctly gouty sore throat and that due to lithæmia or some allied condition. The subjects of the latter may never have attacks of true gout, nor irregular manifestations of it; indeed, as a rule they are not so affected. The term lithæmia is elastic in its application to cases varying from extreme digestive and nervous disturbance to almost normal health; consequently its manifestations in the upper air-passages are not sharply distinguished nor are they typical or pathognomic. One of the most characteristic manifestations is a patchy or streaked irregular congestion of the mucous membrane of the larynx and pharynx. In the former case a dry, explosive cough accompanies; in the latter, uneasiness or positive pain is referred to the sides of the throat, occasionally extending to the ears. These cases are notably irritated and made worse by stimulant applications. Local sedatives and general antilithic treatment give the best results. Occasionally acute naso-pharyngeal catarrh is a manifestation of an exacerbation of the lithæmic tendency. Alkaline and diluent medication with proper diet give more relief than local treatment. Obstinate relaxation of the venous plexuses of the turbinated bodies in some individuals appears associated with lithiasis. Such cases stand operative (caustic) applications badly and receive little or no benefit from them. Some of these cases are much improved by antilithics and general hygiene. Others are intractable on account of uncontrollable lithæmic tendencies.

Officers for ensuing year: president, Dr. J. N. Mackenzie, Baltimore; first vice-president, Dr. Edgar Holden, Newark; second vice-president, Dr. C. E. Bean, St. Paul; secretary and treasurer, Dr. C. H. Knight, New York, No. 20 West Thirty-first street; librarian, Dr. T. R. French, Brooklyn; council, Dr. Franklin H. Hooper, Boston; Dr. George M. Lefferts, New York; Dr. Frederick I. Knight, Boston; Dr. D. Bryson Delavan, New York; representative on the committee of the Congress of American Physicians and Surgeons, Dr. Harrison Allen, of Philadelphia.

The following were elected to membership: Dr. Wm. E. Casselberry, Chicago, and Dr. H. L. Swain, New Haven.

The Association then adjourned to meet in Baltimore, the time of meeting to be determined by the Council.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

SIXTH ANNUAL MEETING, BOSTON.

First Day— Monday, June 24, 1889, 2 p.m.

Dr. Vincent Y. Bowditch, President, in the chair.

The President opened the meeting with an address on

COMPARATIVE RESULTS IN NINETY CASES OF PLEURISY, WITH SPECIAL REFERENCE TO THE DEVELOPMENT OF PHTHISIS PULMONALIS.

The results of Dr. Bowditch's investigation showed at least, first, that whether we could prove absolutely by such statistics that all pleurisies are tubercular or not, yet a large percentage of these patients who were afflicted with pleurisy, often in apparently chronic forms, recovered their health and had never had any recurrence of the original trouble nor development of subsequent pulmonary or otherwise tubercular trouble.

Second, that while undoubtedly there are many cases in which an attack of pleurisy is followed within a comparatively short space of time by pulmonary trouble, and therefore special care should be taken of the patient during convalescence from the former disease, yet we are not justified in giving such gloomy prognoses as we should be inclined by accepting the extreme views held by Landouzy and his followers.

To give hope and courage to patient and friends should be the first effort of every physician.

Dr. Wm. D. Hodges, of Boston, read a paper on

A STUDY OF THE SUMMER CLIMATE OF THE MASSACHUSETTS COAST.

The annual pilgrimage of a large class of our people to sea-shore resorts has assumed such dimensions, the writer has been led to make some investigations into the climatic conditions of certain towns along the coast of Massachusetts. This has been derived from the temperature and wind records taken at twenty-two places, covering a period of nine years.

Climate is practically determined by the temperature and moisture of the air; these in their turn are dependent upon the prevailing winds, which are charged with the temperature and moisture of the regions they have traversed.

Since sand and light, loose soils are much worse conductors of heat than clay and denser soils, it follows that loose soils and tracts of land are subject during the day to high temperatures and during the night to lower temperatures, near the surface, than dense soils.

The influence of the sun upon water is, however, different. Here the sun's heat is only partially arrested at the surface, and most of it penetrates to a considerable depth. This is one of the most important distinctions between land and water surfaces, in their bearing on climate. Of course, in shallow water the sun's heat raises the temperature much higher than that of deep water: it is concentrated through a small depth of water, instead of being diffused through a great depth.

These principles are well illustrated on the Massachusetts coast. The light, sandy soil of Cape Cod, Martha's Vineyard, and Nantucket, surrounded as they are by shoals and ocean currents, demonstrates the effect of the summer sun in the elevation of the temperatures in these localities.

In the latitude of Cape Cod and nearly south of Cape Sable there is a wide break in the continental shelf, which gives access to a tongue of the ocean which approaches to within fifteen or twenty miles of the Massachusetts coast. The outer part of this slope is bathed by the waters of the Gulf Stream, and the water temperature along this belt has been found by the investigations of the Fish Commission to be decidedly warmer than along the shallower part of the continental shelf nearer the shore, in fifteen or twenty fathoms, as at Nantucket, New South Shoals, and Pollock Rip, where we find, on examining the temperature charts here shown, the water is very much colder than at any other place recorded on the Massachusetts Coast.

The denser soil of the northern coast of Massachusetts, with its deep waters, gives a greater diffusion to the sun's heat and we have a theoretically cooler summer temperature. Practically the prevailing wind seems to the writer to play a most important rôle in determining the summer temperature of many towns on the northern shore.

The prevailing summer wind along the whole coast of Massachusetts is south-west. A breeze which reaches the southern shore of the State, comparatively cool, and deprived in part of a portion of its moisture, arrives at the northern coast-line — Boston, Salem, etc. — greatly heated in its passage over the intervening land, thus causing a decided elevation of temperature, until a reaction takes place usually in the early afternoon, and a breeze sets in from the ocean, caused by the land surface being more heated than the sea during the day.

Dr. F. I. Knight, Boston, wished to impress upon the members of the association the idea that New England was not such a bad place, during July and August, at any rate, for our patients to return to. He found great difficulty when he once sent patients away to get them home again; and this record of facts, he thought, ought to convince the gentlemen that they can risk these patients coming home at any rate for two months in mid-summer.

Dr. W. H. Daly, of Pittsburg, Pa., read a paper on

THE WAKEFULNESS OF NEURASTHENIA AS AFFECTED BY A RESIDENCE AT THE SEA-SIDE; AND ITS SUCCESSFUL MANAGEMENT AND CURE.

Dr. S. E. Solly, Colorado Springs, said he endorsed Dr. Daly's remarks as far as his experience went. He was disappointed that the reader did not distinguish more distinctly those that were to go to the sea-shore and those that were to stay away. His impression was that where the neurasthenia was accompanied by an anæmic condition, the patient was nearly always benefited by going to Colorado, provided there was not some active nervous disorder or some other contraindication. He thought, as a rule, the person with a tendency to a plethoric condition did not sleep as well in Colorado. He had known patients who slept well both at the sea-side and in the mountains, so that it was not always possible to say that one was better than the other. Many patients would sleep at sea who did not sleep at the sea-shore or at the mountains.

Dr. J. H. Platt, Brooklyn, N. Y., said he had been in some very high elevations and found that certain people slept badly provided they lived idle lives. A very important element in the cure of insomnia was to revert to the primitive condition of man as far as possible. Persons who used their arms were less subject to insomnia than those who did not. He thought there must be some connection between the use of the muscles of the arms and the cortex of the brain besides the motor centres being situated there. He had noticed that at high altitudes many people suffered from insomnia who got well after rowing or some exercise of that nature. Drugs in insomnia helped very little.

Dr. A. N. Bell, New York, said that some of the conclusions were opposite to observations he had made: He had seen several patients with neurasthenia who got relief only at the sea-side.

Dr. E. F. Ingalls, Chicago, did not fully agree with the reader in his conclusion that drugs were of no value in neurasthenia. In certain cases he thought patients might be very much benefited by a judicious administration of hypnotics. Sulphonal seemed to him of very great value in some of these cases.

Dr. Willis Ford, Utica, N. Y., said that wakefulness was not one of the most constant symptoms of neurasthenia. Mere wakefulness existed among well-nourished business men, the result of passive cerebral congestion, and was relieved almost always by a short residence at the sea-shore. Anæmic persons suffering from wakefulness, however, would do better in a higher altitude.

Dr. Daly, in closing, said he wished to bring out three points in his paper: 1, that no rules could be given as to what patient should go to the sea-side, etc.; 2, that we should not indulge in this popular fad of "bridging the patient over" a few days; 3, that we should pay attention to the patient's digestive organs, liver, and secretions.

Drs. C. W. Townshend and A. Coolidge, Jr., Boston, presented a paper on

THE MORTALITY OF ACUTE LOBAR PNEUMONIA;

a study of all the cases treated at the Massachusetts General Hospital from the first case in 1822 to the present time.

SUMMARY.

1. In the one thousand cases of acute lobar pneumonia treated at the Massachusetts General Hospital from 1822 to 1889 there was a mortality of 25 per cent.

3. The mortality has gradually increased from 10 per cent. in the first decade to 28 per cent. in the present decade.

3. This increase is deceptive from the following reasons, all of which were shown to be a cause of a large mortality: —

(*a*) The average age of the patients has been increasing from the first to the last decade.

(*b*) The relative number of complicated and delicate cases has increased.

(*c*) The relative number of intemperate cases has increased.

(*d*) The relative number of foreigners has increased.

4. These causes are sufficient to explain the entire rise in the mortality.

5. Treatment, which was heroic before 1850, transitional between 1850 and 1860, and expectant and sustaining since 1860, has not, therefore, influenced the mortality rate.

6. Treatment has not influenced the duration of the disease or of its convalescence.

Dr. A. L. Loomis, New York, said this paper seemed to him the fairest and most comprehensive statement in regard to the ratio of mortality in pneumonia for the last sixty years that had been given to the profession.

The result which the readers had reached was one he had long maintained, that pneumonia had not changed its type, its severity, or its ratio of mortality; that it was now what it always had been.

We had to recognize the fact that acute lobar pneumonia was an infectious disease, self-limiting, and, like all infectious, self-limiting diseases, was to be modified very little by treatment. It would run its course and the results would be determined, not by the treatment, but by the conditions of the patient, his age, surroundings, habits of life, at the time of the onset of the disease.

There were cases of pneumonia that would die whatever the treatment might be, and other cases that would recover on any plan of treatment.

While pneumonia was an infectious disease he did not believe it had a specific microbe which produced it, but that the microbe which produced typhoid fever or diphtheria might produce pneumonia.

Dr. H. I. Bowditch, of Boston, suggested that the paper ought to stimulate the profession to try in every way to find some means of preventing the disease, inasmuch as we were unable to cure it by any known means.

Dr. F. C. Shattuck, of Boston, called attention to the small number of cases in the first decade, and the influence a small number of cases, if favorable in character or unfavorable, might have on the percentage of mortality.

The fact that the mortality had remained stationary at 25% showed, in his opinion, an improvement in therapeutics in this way: the population of Boston was an extremely homogeneous one in the early years. There was practically not an Irishman in Boston; the town was surrounded by water; there were large open spaces, gardens about the houses, and the sanitary conditions were very good, except, perhaps, in the respect that people had wells and drank well-water, and in these days the well and the back-house were often very near together. To-day the population of Boston was a mixture of all sorts of people, and the tenement-house system was in vogue owing to the very high price of land, and while the sanitary condition of the upper classes has improved enormously of late years it was his feeling that the sanitary condition of the poorer and middle classes had not improved to anything like the same extent. It was from the middle, and especially the poorer, classes that the mortality was drawn which furnished the figures for these statistics; therefore it seemed to him extremely probable that if the mortality rate remained the same to-day that it did fifty or sixty years ago the treatment was much better, otherwise we should have a larger mortality.

Dr. A. L. Loomis, of New York, in reply to a question upon what he based his belief that lobar pneumonia was an infectious disease, said: First, because it was a self limiting disease. Second, because it had an initiatory chill. Third, because it had an almost uniform rate of temperature. Fourth, because it terminated by crisis, as a rule. Lastly, because we had often seen pneumonia occur epidemically, and under certain circumstances he was quite sure it was contagious.

Dr. Charles Dennison, of Denver, Col., called attention to the prevalence of pneumonia in malarious districts as an evidence of its infectious nature. In the census of 1870 the States that gave the largest percentage of deaths from pneumonia were States known to be malarious.

Dr. A. Coolidge, Jr., Boston, said, in closing the discussion, that what Dr. Shattuck had said about the small number of cases in the first few years was true. There were only fifty cases between 1822 and 1829, and only five deaths, or a mortality of 10%. The average age was less than twenty-six years in that decade. In the next decade the average was almost thirty.

The paper had considered only acute lobar pneumonia.

One cause of the increase in mortality was undoubtedly due to the difference in the age of the patients who come to the hospital now from what it was earlier. A great many now were fifty years of age and over.

Dr. E. P. Hurd, Newburyport, read a paper on

CONSUMPTION AS I HAVE KNOWN IT.

In studying the march of consumption in New England Dr. Hurd selected the city of Newburyport, Mass., — an old-fashioned New England city, which was remarkably free from malarious and zymotic diseases, but was exposed to chilly winds and inclement weather, and thus presented suitable climatic conditions for the development of consumption. He compiled statistics of the mortality from pulmonary phthisis in that city for the past twenty-five years.

The lesson taught by these statistics was that consumption was far more prevalent among foreigners than among natives; as far as the latter were concerned there was a gradual decrease in the death-rate from this disease. The relative infrequency of consumption among the descendants of families that had many generations been fixed to the soil was a conspicuous fact. He had observed that a condition of debility did not invariably precede the attack, nor did every debilitated youth become a victim to phthisis. In some cases the lungs, naturally delicate, might be weakened by exposure to severe atmospheric changes and succumb to the microbe of phthisis, albeit the other organs and tissues might be in a good state of nutrition. In other instances the lung might be the soundest part of a feeble and sickly organism and sturdily resist every destroying agency. Excessive dampness and moisture, especially cold dampness, was an undoubted factor of considerable importance.

Dr. A. L. Loomis, New York, said he thought Dr. Hurd had thrown out some very strong arguments in his paper. It seemed to him that the facts and statistics, especially the family statistics, went to show that pulmonary phthisis was not a contagious disease.

Dr. W. B. Platt, Baltimore, read a paper on

THE INFLUENCE OF CLIMATE AND SEASON UPON THE MANIFESTATION OF NORMAL AND ABNORMAL NERVOUS ACTIVITY.

Chorea had been shown to be far more common in cool than in warmer climates; to be more frequent in February and March than in December, for instance. The attacks in the cases observed appeared to have no relation to the rise or fall of the barometer, to the rainfall, or to the thermometer, excepting as the relative rise was greater in the spring than in other months. The number of attacks showed a remarkable coincidence with the number of storm-centres passing within seven hundred and fifty miles of Philadelphia.

Chorea might be defined as a disease of childhood and youth characterized by chronic, intermittent, muscular twitchings, without loss of consciousness, often accompanied by endocarditis, and caused by an irritation of the cerebral motor ganglia. It was a disease of cities rather than of the country, of whites rather than of blacks, of females rather than of males, of the spring months and of cool climates.

Infantile paralysis had been found to be immensely more frequent in Philadelphia in the hot than in the cooler months.

Concerning suicide we saw at a glance that race had much to do with its frequency. Negroes very seldom committed suicide. Savages had such an immunity from suicidal impulse that it might, in general, be defined as one of the diseases incident to civilization. The influence of climate and season upon suicide was most remarkable; it was at a minimum in the colder months, increased in frequency during the hot and dry season, and remained high during the rainy season. One factor was age. Forbes Winslow had shown that the tendency to suicide first appeared at from ten to fifteen, was most frequent from fifty-five to sixty-five, and among females from sixty-five to seventy-five, in Great Britain. An imperfect education appeared to be worse in its suicidal tendency than ignorance. Sex was another important factor, it being much more common in males than in females. Religion and the lack of it seemed to have an important bearing. Imitation was a most important exciting element in suicide.

In neurasthenia more cases were observed to occur in the spring months than at any other time of the year.

Dr. W. E. Ford, Utica, did not think we were able to say that as to suicides climate had anything like as much to do with its production as the social conditions of the people.

The majority of suicides in New York State occurred among the native farmers, and oftener in the fall than at any other time of the year, and it was supposed to be due to the hard work of the summer and to malnutrition.

As to chorea there was an unquestioned relation between climatic conditions and the production of the disease, and especially the changes of season.

He would hardly like to subscribe to the theory that climate had anything to do with the suicidal tendency, except as governing the habits of life.

At the annual business meeting held at 2 P.M. on Tuesday, Drs. John C. Monro, Algernon Coolidge, Jr., and William D. Hodges, of Boston, H. M. Wilson, of Vannersville, N. Y., Van Ruck, of Ashville, N. C., and L. J. Flick, of Denver, Col., were elected to membership, and Dr. Henry I. Bowditch, of Boston, was elected an honorary member. The following officers were chosen: President, Dr. Charles Denison, of Denver, Col.; vice-presidents, Dr. J. R. Leaming, of New York, and Dr. W. H. Baker, of Lansing, Mich.; secretary and treasurer, Dr. J. B. Walker, of Philadelphia; council, Dr. F. H. Bosworth, of New York, Dr. F. C. Shattuck, of Boston, Dr. R. G. Curtin, of Philadelphia, Dr. F. I. Knight, of Boston, and Dr. S. E Solly, of Colorado Springs, Col.

It was voted to hold the next annual meeting at Denver, Colorado. The time to be subsequently determined, but probably during the month of June.

In the evening about thirty members of the association attended a banquet at the Hotel Vendome. The retiring president, Dr. Vincent Y. Bowditch, of Boston, presided. Speeches were made by many of those present. Quite a number of the members had gone to Newport, R. I., to the annual meeting of the American Medical Association.

(To be continued.)

FORTIETH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION,

HELD AT NEWPORT, R. I., JUNE 25TH, 26TH, 27TH, 28TH.

The meeting of the Association itself was preceded by that of the American Medical Editors' Association, which was addressed by its President, William C. Wile, M.D., of Danbury, Conn., upon

OUR DUTIES AS JOURNALISTS, AND THE REFORMS WE SHOULD PERSISTENTLY ADVOCATE.

Dr. Wile said: —

It is useless to comment further upon the power which this association may yield, not only as regards the medical profession of which it forms so important a part, but in other fields, where energy and influence are no less urgently demanded. It remains for me only to indicate the reforms which seem to be most urgently needed, with the full confidence that by the assistance afforded by the medical profession they will be brought to a happy termination.

What then shall be our line of action during years to come? What changes should be inaugurated? What projects already undertaken should be carried on to completion? These are questions which it becomes us at this time to consider and decide upon. In their treatment, however, we are hampered by the superabundance of facts and suggestions which present themselves, and which by reason of their importance demand special consideration. Let us, however, study those requirements which may be held as essential to the prosperity and healthful growth of the medical profession.

The subject of medical education as it exists in this country to-day has been often commented upon and held up to criticism. It is a widely recognized fact, that year after year there go forth from our colleges hundreds of young men who are totally and manifestedly unqualified for the work before them. As candidates for admission they are, in many cases, unfamiliar with the first principles of English composition, to say nothing of the other primary branches of learning. As graduates they have been found familiar with not one-half of the diseases observed in general practice, much less with the various specialties of medicine. Not only are such men allowed to enter the colleges, but they are solicited and encouraged so to do, by inducements without number, so that no one, of whatever race, nationality, or condition, be he moral or immoral, ignorant or well-informed, can have any plausible excuse for not studying medicine, and not taking a diploma after receiving two courses of lectures.

For these reasons, our system of medical education has become unfavorably known throughout all foreign countries, and such reputation is working us irreparable injury. The present state of civilization demands for our profession, not stock companies which derive their revenues wholly from the fees of their students, and which consequently make large pecuniary demands without any adequate returns, but rather, institutions which are able to exercise independence and can, to a certain extent, choose their own students, and can insist upon a four years' study of medicine. There should be three years of clinical work beside such instruction, with frequent examinations by the faculty, and no student should be awarded a diploma who has not a good knowledge of practical anatomy, surgery, and obstetrics, as well as a fair clinical acquaintance with the various specialties of medicine. I believe that by proper legislation such a curriculum will be adopted and carried out by every college in the country, while the various mushroom institutions which now exist will be compelled to go into bankruptcy from lack of support.

To bring about such reforms is to excite much hostile feeling and adverse criticism, for both money and influence are pledged for the maintenance of diploma mills, and sympathy is often enlisted even for an unworthy cause; yet with the means at its disposal it certainly lies in the power of the profession to protect itself and the public as well from the dangers which have been so long in active existence. Recognizing as we do the many shortcomings of the medical colleges and the men they graduate, it seems urgently required that some remedial measure should be at once advocated and put into operation.

We are practically aware of the fact that many of the existing laws governing the practice of medicine are of very limited application and avail little as regards the suppression of quackery in its various forms, and the protection of the medical profession. Most harmful and disreputable systems of practice are thus allowed to exist and indeed to flourish, and it is difficult and at times impossible to secure the conviction of any one guilty of malpractice. Those who hold diplomas and are now engaged in medical work are, to a great extent, beyond our jurisdiction. It is in the prevention as much as in the treatment of these evils that we are specially concerned. To prohibit the manufacture of ignorant and unscrupulous practitioners, no less than to convict and punish those who already exist, should form our chief aim and purpose.

One of the measures which promises the best results is the establishment of State boards of medical examiners, which might be appointed by the governor of each State, upon the recommendation of its own medical society. To such bodies should be entrusted the sole licensing power, with the privilege of rejecting all applicants who are found to be notoriously incompetent. Such action has already been taken by at least four States, and in a modified form by five others, all of whom have recognized the fact that it is only in this way that satisfactory results may be attained. We have over one hundred medical colleges in the United States, and the number is steadily increasing. In most, there are no preliminary examinations worth mentioning; indeed, so great is the competition among the latter that the college which should presume to demand anything but money of the applicant would soon find itself supplanted by the great number who demand nothing at all.

Again, in the various schools of a higher grade, there is a disposition to insist upon technical and purely theoretical points, and a disregard of the more practical aspects of medicine. To these various faults and deficiencies there may be applied a like remedy.

State examining boards, requiring of the applicant a high standing of scholarship and a thoroughly practical acquaintance with the duties of the profession, would quickly eradicate the worthless institutions, would institute improved methods of instruction, and would enhance the value and the dignity of those medical schools of the first class which are now taking the lead in these measures of reform.

Thus, with the increased preliminary requirements, an extended and graded college course, with its many improved facilities for instruction, and the final test exercised by an independent examining board, there is an absolute certainty of limiting the number of schools and the number of graduates, and likewise of bringing to the profession a degree of dignity and status unequalled at any time in its past history.

The policy of protection holds good in the case of medical practitioners as well as in the importation of foreign labor and manufactures. While American physicians are prohibited by the most stringent laws and regulations from practising in Europe, yet, on the other hand, a foreigner with little or no education may come to this country and practise his calling without fear of molestation. The result is, a large influx of incompetent and otherwise undesirable men, who come to join the three thousand or more graduates who are turned out yearly by the various medical colleges of this country. The laws governing the practice of medicine in Europe are most stringent and effective, and few, if any, enter the profession there before attaining a fair knowledge of its duties. In Germany, Russia, Switzerland, Italy, Spain, Portugal, and other countries a rigid state examination is demanded. In France the requirements are equally high, while in some parts of Europe the applicant for a license, in addition to his other qualifications, must be a naturalized citizen. In short, we have nothing, in this part of the United States at least, which compares in efficacy with the requirements adopted by most other countries. The consequence is we receive upon our shores, not only those who have failed to obtain licences, but also those who have never applied for them;

moreover, many of the medical immigrants have little or no knowledge of our institutions or language. They are foreign taught and know nothing of American methods of treatment. For these latter reasons alone they should be debarred from practice. This state of affairs would, I believe, find an efficient remedy in the supervision exercised by the State boards of examiners, who might sit in judgment upon 'hese cases as well, and thereby render their country a valuable service.

While the quack, the pretender, and the incompetent doctors demand, and often receive, fees which are quite out of proportion to the services rendered, the regular physician is too often defrauded of his just dues. In all other professions, scientific work demands a more or less adequate compensation, and by virtue of existing safeguards satisfactory returns are generally made for services rendered. In the medical profession, however, there exists comparatively little protection against possible losses. The physician is at the mercy of the dishonest patron, and it is only after a long period of attendance, involving perhaps a great expenditure of physical and mental labor, to say nothing of loss of time, that he becomes aware of the moral and financial standing of his patient, who is oftentimes inclined to depreciate rather than extol the service which he has neglected to pay for.

This state of affairs has existed for years — the patient going the rounds of the medical faculty and receiving advice and medicine gratis, while the physician suffers in reputation as well as in a pecuniary way. It is time that these acts of dishonesty meet with the punishment which they so richly deserve. During the last few years there has been an effort made in various localities to remedy this evil, and by a plan which has met with success wherever it has been adopted. I would advocate, therefore, the establishment in every town and city of a Physicians' Protective Alliance, by which a complete record may be kept of all who are able but unwilling to pay for medical attendance, together with such other facts as occasion requires. With such a method in operation, the receipts of the physician would be more in proportion to the amount of labor expended and his services held in far greater estimation.

There has arisen no question of more vital importance than that which concerns the protection of our country from the invasion of contagious diseases. Yet it is a most singular fact that few civilized nations possess regulations which are so lax and inefficient as ours. Those which now obtain have been inaugurated after long, persistent, and laborious effort. Although appropriations have been obtained from the government to be used in the time of need, for the suppression of epidemics, yet by reason of the few existing laws and the many restrictions placed around, such sums cannot and never will enable us to exercise the proper sanitary precautions. Under existing circumstances, quarantine is maintained, if maintained at all, by individual States, whose laws possess no uniformity whatever. It has been stated that there are but three ports in this country where proper precautions are in force. The efficient quarantine of one port, however, not only fails at the present time to protect its own State, but really adds to the dangers of the adjoining States, which possess no safeguards. Given one harbor of entry, where infected vessels may repair, the quarantine of all others must necessarily prove of little avail, and it is apparent, from this exposed condition of our coasts and the free intercourse existing between the States, we are in constant danger of infection from various sources. An occasional appropriation to be used in cases of emergency, when danger is imminent, fails utterly to meet our wants. At the same time it is not just that individual States, situated on the seaboard, should be compelled to bear the expense of protecting the inland States. Although, by means of a large expenditure of money, we have thus far protected many of our seaports, still many thousands of dollars have been foolishly wasted and no permanent or definite results obtained. This applies not only to dangers from foreign sources, but also to those which arise in our midst, and by reason of faulty safeguards are allowed to increase and multiply and to extend from one community to another. It is important that the health laws of all towns, cities, and States should be clearly defined and identical in their provisions, and at the same time readily executed. It seems wholly improper that the Marine Hospital Service should any longer attempt to carry on any portion of this important work; in fact, it would be difficult to determine what special qualifications this department possesses that it should assume an interest in such matters and constitute itself an almoner of the health funds. It certainly has many and important duties of its own, and should therefore be allowed the time necessary for their proper performance. Upon reviewing the question, therefore, from its various standpoints, there appears to be no better way of remedying the numerous evils and shortcomings which exist, than the establishment of a National Bureau of Health, which should form a distinct department of our national government, and to which should be entrusted the general supervision and enforcement of all measures relating to sanitation, as well as to coast and inter-state quarantine. The appropriations allowed this board should be generous, and there should likewise exist a permanent fund which could be drawn upon in sudden emergencies which might arise.

Having secured in this way a general uniformity of all sanitary laws and regulations, with intelligent methods and with abundant means for carrying them into execution, we may expect more brilliant and lasting results than have heretofore been attained. In this department of health it would be highly proper that the chief executive officer be made a member of the cabinet, as evidence of a proper appreciation of the dignity and the importance of one of the most practical branches of human education and knowledge.

That the work of this board may be carried on with the best results, and in order that there may always be found intelligent aid and co-operation, it is important that the students of all of our colleges should receive instruction in sanitary science. In this latter there has recently been a rapid advance, and in no other department of medicine have greater or more brilliant results been noted.

No specialty can be pursued with better and more definite results than this one; and as the most intractable and fatal diseases seem to be the very ones which are most easily averted it follows that no practitioner who is unfamiliar with the first principles of this science can perform his duties with the greatest profit to himself and with justice to his patients. In these matters the physician is, as a rule, wholly self-educated, and, in the investigations he may wish to make, labors under manifest disadvantages which a proper preliminary training would have obviated. So urgent, however, are the present demands of preventive medicine that we have reason to hope that, with the necessary encouragement on our part, every medical college will be obliged to recognize their importance by establishing a chair of sanitary science, by which students may acquire all of the known facts relating to biology and allied topics, together with the necessary data for future investigations. Said an English writer more than thirty years ago: "Redoubled attention should be devoted to hygiene, public and private, with a view of preventing disease on a large scale and individually in our sphere of practice. Here the surest and most glorious triumphs of medical practice are to be achieved." The discoveries which have been made and the results which have been attained during the past few years are but the fulfilment of this prophecy, and should render the student more devoted to sanitary science than ever before.

Facilities for bacteriological work have been heretofore lacking, and American students in this department of science have been obliged to either carry on such investigations under the greatest possible difficulties at home, or to pursue their studies in the various laboratories abroad. Under such conditions we advance slowly and laboriously, and can necessarily take little part in the triumphs of modern scientific research. A thorough knowledge of the causes and modes of propagation of disease, as well as the laws governing epidemics, must be acquired before we can use with intelligence whatever resources may be placed at our disposal. We can now boast of six or seven private bacteriological laboratories, and there is reason to suppose that if properly equipped and supported they will do good and efficient work, yet, to meet the many and varied requirements of our government something more is needed. Our national health officials should be enabled to carry on the many kinds of investigations needed without assistance from foreign or outside sources, and such experiments should not be allowed to languish or fail through lack of time on the part of the officers, or the need of funds to meet current expenses. In no way can such sanitary work be prosecuted with better success than by the establishment of a bacteriological laboratory, forming an adjuvant to the Bureau of Health — liberally maintained by the government and wholly devoted to the needs and demands of the latter. Many countries have set the example. We have only to commend a measure whose feasibility has been so fully established.

There could be no association whose interests we hold so greatly at heart as the one with which we are so intimately connected. Its triumphs and successes are no less our own, while for any failures or shortcomings it might manifest we should hold ourselves in part responsible. We may then rightfully interest ourselves in those measures by which the aims of the American Medical Association are defined and furthered, and by which its honors and benefits are rendered free to the profession at large. As the official organ of the association, the Journal should obtain certain special features. We see too many elaborate and scientific articles and those which are both uninteresting and far from practical. We are too often obliged to spend too much time in eliminating the great mass of verbiage and dry details with which a few plain facts are surrounded. A journal designed for the general medical reader has no right to fill its columns with articles upon optics or cerebral localization or pathological anatomy. Contributions which have their own proper place should not be inflicted upon the general practitioner, to be read during the limited time at his disposal. The reports of medical societies may be placed in the same category. If they contain anything of special value let it be summarized and allowed no more space than it deserves. The association does not require a journal which deals with special branches and investigations, but rather one which will give a comprehensive digest of medical progress and medical news, and at the same time possess such features as will render it popular and attractive.

The editor of such a publication should not be chosen without due care and deliberation, as the office is a most important and responsible one. It follows that in addition to his other qualifications he should be a man of liberal education, elevated thought, and considerable executive ability. He should be able and willing to devote to the office the care and attention which it demands, without incurring the suspicion of having used it for the purpose of furthering his own private and personal interests. What applies to medical journalism as a whole, may be said to represent the needs and requirements of the official organ of the association, and the realization of projects for its growth and improvement is, no doubt, a source of care and solicitude to all of us. In this, as in all matters which concern the future growth and prosperity of the American Medical Association, our support and loyalty are pledged. It is within our power to add materially to its usefulness and success, while at the same time we endeavor by all possible means to improve the present condition of the medical profession by elevating its standards and placing it upon a firmer moral and intellectual basis.

I have endeavored briefly to direct your attention to some of the more striking evils which now exist, and the measures which might be employed to overcome them. We have, at the present time, an important mission to perform, yet no one who fully appreciates the influence and the capabilities of this society of medical editors can justly despair of final success. We feel to a certain degree satisfied with the work which has already been accomplished by our association, and desire to show our appreciation of the evidences of esteem and encouragement which have been extended, yet no thought is more gratifying to us than the conviction, that in years to come we shall have been found to have added our full quota to the triumphs and achievements enjoyed by the medical profession of America.

After this address the nominating committee reported the following names for officers for the ensuing year, all of whom were unanimously elected: —

President, Dr. I. N. Love, St. Louis; vice-president, Dr. C. W. Dulles, Philadelphia; secretary, Dr. J. F. Gray, Chicago.

Dr. Wm. Brodie followed with a talk on medical journals and the methods and proper plans for conducting them, favoring a board, as on the *British Medical Journal*, instead of one single editor. Dr. Dulles, of Philadelphia, followed, stating briefly what he thought a good medical journal should be. Dr. Connors, of Detroit, spoke of the shortcomings of many medical journals. Dr. Love, of St. Louis, thought that the journals and the profession were advancing with the growth of the country. Dr. N. S. Davis spoke vigorously in favor of American educational institutions, and said students could now get fully as good a training in the best schools here as they do in Europe, and if they patronized this country more the schools would be able to improve.

Dr. T. D. Crothers, of the Hartford *Journal of Inebriety*, followed with an article on

THE INFLUENCE OF MEDICAL JOURNALISM ON THE MARCH OF SCIENCE.

A complimentary excursion was given the association by the editorial staff of the *New England Medical Monthly*.

THE OPENING SESSION.

The fortieth annual meeting of the American Medical Association opened under favorable auspices at eleven o'clock June 25, in Music Hall, Newport. The large audience room, in which the general sessions of the association were held, was well filled by the members of the convention and by a large number of ladies and of laymen as well. The platform was occupied by the officers of the association, ex-presidents, His Excellency Governor Ladd, the chaplain of the day, and the chairman of the local committee of arrangements.

The sessions of the convention were opened by the chairman, Dr. Horatio R. Storer, who introduced the president of the association, Dr. W. W. Dawson, of Cincinnati. Dr. Storer then introduced, as the senior clergyman of Newport, Rev. Thatcher Thayer, D.D., pastor emeritus of the United Congregational Church, who offered prayer.

His Excellency, Governor H. W. Ladd, was next introduced, and he extended a hearty welcome to the association.

Dr. James H. Eldredge, of East Greenwich, ex-president of the Rhode Island Medical Society and one of the oldest members of the American Medical Association in that State, was then introduced and read a brief address of welcome on behalf of the profession of Rhode Island.

The address of the president, Dr. W. W. Dawson, of Cincinnati, was then read by Dr. J. A. Larrabee, of Louisville, Ky. The following is a brief abstract of this address: —

The Premier, Mr. Gladstone, after quoting the statistician who estimates the English-speaking people at the close of the next century at one thousand millions, says, "What a prospect is that of many millions of people, certainly among the most manful and energetic in the world, occupying one great continent." This destiny in numbers is startling, but the assertion of Dr. Dollinger, a German scholar, portrays the culture of the future almost as strikingly when he says "that the intellectual primacy of the whole world is certain to fall to the Anglo-Saxon race." Most of that race will be in America.

Looking to such a future the position of the learned professions is certainly conspicuous — their obligations imperious. Medical men should be loyal to this grand destiny.

An eminent modern critic, in discussing civilization in America, while admitting that we have well solved the political and social problems, asks what have we done to solve the human problem, "the humanization of man in society." The struggle in his own country, he asserts, has resulted in "an upper class materialized, a middle class vulgarized, a lower class brutalized."

We trust that our efforts have yielded better fruit; and since medical science and medical men are prominent factors in society, among every people, we may well ask what they have accomplished, what part they have here taken in the solution of the vital problem. In the "Century of Medicine" Prof. E. W. Clark in his classical address says: —

"It is not an extravagant assertion to say that in all this turmoil, change, and progress (referring to the revolutions and changes in society, religion, and governments for the past century), medicine has kept abreast of the other natural sciences, of politics, and of theology, and has made equal conquest over authority, error, and tradition," and, it may be added, has contributed largely to man's comfort, happiness, and advancement. To intensify this, reference need only be made to some of our triumphs, to vaccination, to anæsthesia, to sanitation, the prevention of pestilence, the lengthening of human life. It is, however, more especially the contributions of the profession in America to which attention is desired at this time. What are we doing in the humanization of man, in the work of civilization?

Are our medical practitioners and our medical teachers what they should be? We shall see. Criticisms abound concerning the defects of medical education. Those who do not condemn, often ridicule; these criticisms and strictures are made for the most part, it must be said, by gentlemen unacquainted with teaching, without any practical knowledge of the constitution of medical colleges, or of the toil, devotion, and sacrifice made necessary by those engaged in didactic and clinical instruction.

These censorious addresses are delivered before and to a body of professional gentlemen, the peers of any, some of whom have grown gray in the hard service, others are still in the prime of life, with reputations coextensive with civilization. The rest are young, full of life and enthusiasm, fired with ambition to render loyal service to that profession which they have chosen. Can our system be so defective? The pessimistic orator seems to forget that he is the product of the system of medical education which he is so severely condemning. Some one has said, "By retrospection and introspection an individual, like a profession, may be benefited." In this self-examination we should have but one motive, the elimination of error, the development and support of truth.

The speaker then went on to consider further the subject of medical education, discussing consecutively the physician of the future, medical schools, and the question whether they have increased too rapidly, and the facilities for laboratory work. He touched briefly upon the history of medical teaching in this country, upon medical journals as the heralds and vanguards of medical progress, on the Medical and Surgical Library and Museum at Washington, the medical and surgical history of the war of the Rebellion, medical societies, and medical literature. He turned for a moment to the "clouds" on the medical horizon and spoke of the proposed legislation for the regulation of the practice of medicine.

The address closed as follows: —

The presence of this body of professional gentlemen, representing our entire country, furnishes sufficient argument for the existence of a national organization; one embracing the virtue and strength of the profession, one to which all questions should be referred for just and final decision. Questions will arise, differences of opinion will occur between honest men. We must have some tribunal, some body, to which these questions, these differences of opinion, can be relegated for solution. The golden rule is a principle, not a law; it cannot interpret itself. Its application to life in detail must be defined. In this respect we are like other men and other organizations. Our morale, however, is higher; it has a zeal, a spirit, a hope and confidence peculiarly our own. If we would have our organization pure, we should make it strong — strong enough to eliminate all that is not true or truthful. We are mortals; not transcendentalists. We cannot live as the commune. We must have laws; remembering always that they are not made for the righteous, but for the sinner. "They that be whole need not a physician, but they that are sick." I will not attempt to defend the ethics of our profession. It would be a poor compliment to your intelligence, to your manhood; for there is not a clause in our code which a gentleman could not cheerfully obey. Organize whatever we may please: associations of specialists, of physicians, of surgeons; academies of physicians; congresses of physicians and surgeons; but let us not lose our loyalty to this parent association. Projected almost a half-century ago, when medical societies were few, it has annually convened — in the North, in the South, in the East, in the West, and in the far West, on the Pacific shore; if you will examine its yearly roster, you will find that it embraced the best and the wisest. Almost all who were present at the beginning are at rest; their places have been filled by worthy men. Thus, yearly, new life — new men — being added this association cannot grow old.

"When a people hold their lives and property as nothing, the enemy has already suffered defeat." So, too, when virtue will not compromise with vice, the victory, although it may be long delayed, will surely come.

Of the American Medical Association let us unite in saying, *Esto perpetua*.

At the conclusion of the address a unanimous resolution of thanks to Dr. Dawson was passed.

Upon motion, telegrams of greeting, congratulation, and affection were directed to be sent by the secretary to Drs. D. Humphreys Storer and Henry I. Bowditch, of Boston.

[To be continued.]

MEDICAL NOTES.

— According to the Brunswick, Me., *Telegraph*, there have been sixty-eight cases of diphtheria at the insane hospital at Augusta since last December, and fourteen deaths, and the trustees have decided to clean up the building.

— The Maine Medical Association met June 12, at Portland, and elected as president Dr. B. F. Sturgis, of Auburn; first vice-president, Dr. A. L. Hersey, Oxford; second vice-president, Dr. R. D. Bibber, Bath; treasurer, Dr. A. S. Thayer, Portland; recording secretary, Dr. Charles D. Smith, Portland.

NEW YORK.

— Diphtheria is very prevalent and likely to spread rapidly in Long Island City, and the secretary of the State Board of Health has written letters to the mayors of New York and Brooklyn in reference to the matter as follows: "Having been informed that diphtheria exists to an alarming extent in Long Island City, you are hereby notified of such report, and requested to take such precaution against the spread of the disease to your city as may seem to be necessary. You are further notified that there is no board of health in Long Island City, and the State Board is powerless to act for the preservation of the public health, the law only allowing jurisdiction through local boards. The State Board of Health has used every endeavor, without avail, to have a board of health organized in Long Island City, and also to secure such legislation as would enable it to act in such an emergency." Only last winter the State Board of Health introduced in the legislature a bill authorizing it to step in where no local board exists, in case of disease becoming epidemic, and organize a local board; but it failed to become a law. The reason for the anomalous condition of affairs existing in Long Island City is that the common council failed to confirm a board of health.

— Prof. James N. McLane has been elected president of the College of Physicians and Surgeons in place of the late Dr. John C. Dalton, and Prof. Thomas M. Markoe vice-president. At the recent commencement of the college, the graduating class numbered one hundred and sixty-six.

— A question of some interest has been decided by the admission to probate of the will of Mrs. Susan Pine, of Jamaica, Long Island, which has been contested for over a year by relatives. The ground on which the contest was made was incapacity to make a will from the excessive use of opium; and the testimony certainly showed that she was an inordinate opium eater; it being no unusual circumstance for her to drink from a pint to a quart of laudanum in a day. In his decision the surrogate differs from the opinion of the contestants as to the effect of opium-eating upon the intellectual faculties, and he cites many instances of lawyers, physicians, judges, and statesmen who were addicted to the habit, and yet attained great eminence. He claims that as a matter of law the indulgence in the opium habit, even though to excess, cannot be sufficient to establish want of testamentary capacity.

— At the last meeting of the Academy of Medicine for the present season the plans for the academy's new building were exhibited and explained by the architect, Mr. R. H. Robertson, who is a son-in-law of Dr. T. M. Markoe; after which there was a collation and social reunion.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 8, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,571,558	688	286	20.40	14.10	3.30	.60	7.80
Philadelphia	1,040,245	386	137	15.08	11.18	4.40	3.64	2.34
Chicago	830,000	229	03	18.04	13.20	—	1.32	13.64
Brooklyn	814,505	322	141	18.60	12.40	4.34	.31	9.43
Baltimore	500,343	134	46	9.62	18.50	3.24	1.62	1.08
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	188	65	11.13	15.37	1.59	1.59	6.89
New Orleans	250,000	142	65	31.50	11.90	24.50	1.40	.70
Cincinnati	225,000	117	—	22.10	15.30	5.10	1.70	10.20
Washington	225,000	94	34	16.96	15.90	7.42	2.12	3.18
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	20	7	20.00	5.00	15.00	5.00	—
Charleston	60,145	41	24	24.39	9.76	12.20	7.32	—
Portland	40,000	13	2	—	46.14	—	—	—
Worcester	78,292	20	10	20.00	10.00	5.00	—	5.00
Lowell	71,518	26	8	11.55	7.70	—	3.85	7.70
Cambridge	65,552	—	—	—	—	—	—	—
Fall River	62,647	18	10	16.66	11.11	11.11	—	5.55
Lynn	53,334	11	0	18.18	9.09	—	—	9.09
Springfield	40,731	12	3	8.33	25.00	—	—	8.33
Lawrence	40,619	18	4	16.66	22.22	—	11.11	5.55
New Bedford	37,253	11	5	22.22	—	—	—	22.22
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	17	4	—	17.64	—	—	—
Salem	29,011	12	0	—	—	—	—	—
Brockton	28,813	5	2	20.00	—	20.00	—	—
Chelsea	28,167	12	2	16.66	16.66	—	—	16.66
Haverhill	26,058	7	1	—	14.28	—	—	—
Taunton	25,170	7	2	—	42.84	—	—	—
Gloucester	24,263	7	2	14.28	14.28	—	—	—
Newton	21,553	—	—	—	—	—	—	—
Malden	19,774	7	2	14.28	14.28	—	14.28	—
Fitchburg	17,534	7	1	—	—	—	—	—
Waltham	17,332	8	4	6.25	6.25	6.25	—	—
Newburyport	13,875	6	4	13.33	—	13.33	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	3	2	66.66	—	—	—	66.66
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2625; under five years of age 1126; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 581, consumption 297, acute lung diseases 214, diarrhœal diseases 250, diphtheria and croup 151, scarlet fever 39, typhoid fever 39, measles 35, whooping-cough 32, cerebro-spinal meningitis 15, malarial fever 13, erysipelas 7. From typhoid fever, Philadelphia 14, Chicago 7, New York 4, Baltimore, Boston, Cincinnati, Charleston, and Lawrence, 2 each, Brooklyn, New Orleans, Lowell, and Cambridge 1 each. From measles, Philadelphia 11, New York 8, Chicago 7, Brooklyn and Cincinnati 3 each, Baltimore, Boston, and New Orleans 1 each. From whooping-cough, New York 19, Brooklyn 7, Charleston 2, Philadelphia, Chicago, and Washington 1 each. From cerebro-spinal meningitis, New York 6, Lowell 4, Philadelphia 2, Chicago, Washington, and Nashville 1 each. From malarial fevers, Brooklyn and New Orleans 4 each, Baltimore 3, New York 2. From erysipelas, New York and Chicago 3 each, Brooklyn 1.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending June 1st, the death-rate was 16.5. Deaths reported 3019; infants under one year 661; acute diseases of the respiratory organs (London) 162, measles 138, whooping-cough 114, diarrhœa 48, scarlet fever 39, diphtheria 39, fever 23.

The death-rates ranged from 12.7 in Bradford to 38.6 in Preston; Birmingham 16.9; Bolton 21.4; Hull 20.6; Leeds 18.5, Leicester 14.9; Liverpool 18.3; London 13.8; Manchester 25.1; Nottingham 16.0; Sheffield 18.2; Sunderland 18.7.

In Edinburgh 14.9; Glasgow 25.5; Dublin 19.7.

The meteorological record for the week ending June 1, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, June 1, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean	8 A. M.	8 P. M.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	Duration. Hours & Min.	Amount in inches.
May 26	30.06	49.0	50.0	44.0	96	77	78.0	N. E.	S.	20	7	C.	F.		.00
" 27	29.95	51 0	51.0	45.0	72	93	91.0	E.	S. E.	5	15	R.	R	8.10	.59
" 28	29.79	58 0	73.0	49.0	82	69	90.0	S. W.	S. W	12	7	R.	O.	15.30	2 21
" 29	30.18	54.0	68 0	42 0	67	61	78.0	W.	S. W.		13	F.	O		.00
" 30	30.21	62.0	73.0	49.0	82	86	76.0	N.	N. W.	12		F.	O.	0 15	.01
" 31	30.20	73.0	80 0	61.0	64	83	62 0	W.	N W.	14	12	C.	C.		.00
June 1	30 09	72.0	77.0	58.0	78	81	70.0	N. W.	N. W.	21	16	C.	F.	1.20	.41
Means for the Week	30.07														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JUNE 15, 1889, TO JUNE 21, 1889.

By direction of the Acting Secretary of War the following changes in the stations of officers of the Medical Department are ordered: Major ALBERT HARTSUFF, Surgeon, is relieved from duty at Fort Hamilton, N Y., and ordered to Fort Omaha, Neb. Major J. M. BROWN, Surgeon, relieved from duty at Fort Omaha, Neb., and ordered to Fort Meade, Dak. Capt. W. C. SHANNON, Assistant Surgeon, relieved from Fort Meade, Dak., and ordered to Fort Yates, Dak. First Lieutenant FRANCIS J. IVES, Assistant Surgeon, relieved from duty at Fort D. A. Russell, Wyo., and ordered to Fort Lyon, Col. Capt. J. F. PHILLIPS, Assistant Surgeon, relieved from duty at Fort Lyon, Col., and ordered to Fort Crawford, Col. First Lieutenant WALTER D. MCCAW, Assistant Surgeon, relieved from duty at Fort Crawford, Col., and ordered to Fort McPherson, Atlanta, Ga. Par. 9, S. O. 136, A. G. O., Washington, D. C., June 13, 1889.

GIBSON, ROBERT J., Captain, Assistant Surgeon, U. S. A. (Fort Trumbull, Conn.) is designated as Medical Officer for the encampment at Fisher's Island. N. Y., and he will proceed to Fisher's Island, N. Y., August 1, 1889, and report to the Commanding Officer for duty at that post. Par. 5, S. O. 133, Hdqrs. Divn. of the Atlantic, June 13, 1889.

By direction of the Acting Secretary of War the following changes in the stations of officers of the Medical Department are ordered: First Lieutenant BENJ. L. TEN EYCK, Assistant Surgeon (recently appointed) ordered to Fort Leavenworth, Kans. Capt. JOHN DE B. W. GARDINER, Assistant Surgeon, relieved from duty at Fort Leavenworth, Kan., and ordered to Fort Reno, Ind. Ty. Par. 3, S. O. 132, June 8, 1889, A. G. O., is so amended as to direct First Lieutenant P. G. WALES, Assistant Surgeon, to report to Fort Huachuca, Ariz., for duty in place of Presidio of San Francisco, Cal. Capt. M. C. WYETH, Assistant Surgeon, relieved from duty at Fort Huachuca, Ariz., and ordered to Fort McDowell, Ariz. First Lieutenant LEONARD WOOD, Assistant Surgeon, relieved from duty at Fort McDowell, Ariz., and ordered to Presidio of San Francisco, Cal. Par. 2, S. O. 138, A. G. O., June 15, 1889.

The leave of absence for one month granted Captain WALTER W. R. FISHER, Assistant Surgeon, by S. O. 30, c. s. Department of California, and extended fifteen days by par. 3, S. O. 37, c. s. from these Headquarters is further extended fifteen days. Par. 1, S. O. 41, Headqrs. Divis. of the Pacific, San Francisco, Cal., June 12, 1889.

By direction of the Acting Secretary of War leave of absence for two months is granted First Lieutenant HENRY S. T. HARRIS, Assistant Surgeon. Par. 13, S. O 140, A. G. O., June 18, 1889.

By direction of the Acting Secretary of War the following changes in the stations of the Medical Department are ordered. First Lieutenant BENJAMIN L. TEN EYCK, Assistant Surgeon (recently appointed) will proceed from New York City to Fort Leavenworth, Kan., and report for duty to the Commanding Officer of that post. Par. 2, S. O. 138, A. G. O., Washington, June 15, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 22, 1889.

BEARDSLEY, GROVE S., Medical Inspector, granted a year's leave of absence with permission to leave the United States.

FERRBEE, N M., Surgeon, detached from special duty at Naval Academy and wait orders.

ROTHGANGER, GEORGE, Assistant Surgeon, ordered to the Naval Hospital at Mare Island, Cal.

SOCIETY NOTICES.

ASSOCIATION OF AMERICAN PHYSICIANS.

The following is the preliminary programme of the Association of American Physicians to be held at the Army Museum Building, Washington, D. C., on the 18th, 19th, and morning of the 20th of September, 1889.

1. The president's inaugural address, Francis Minot, Boston.

DISCUSSIONS. — 2. The relations between chlorosis, simple anæmia, and pernicious anæmia including leucocythæmia and Hodgkin's disease — Referee, Frederick P. Henry, Philadelphia; co-referee, F. Forchheimer, Cincinnati. 3. The relation of rheumatism to rheumatoid arthritis — Referee, William Osler, Baltimore; co-referee, M. Longstreth, Philadelphia.

PAPERS. — 4 Primary cancer of the duodenum, E. N. Whittier, Boston. 5. Gastric neurasthenia, G. M. Garland, Boston. 6. Chylous effusion into serous cavities, S. C. Busey, Washington. 7. Etiology of pleurisy, especially in its relation to tubercular disease, A. A. Smith, New York. 8. Thrombosis of the cerebral sinuses, A. B. Ball, New York. 9. The early stages of general paralysis, C. F. Folsom, Boston. 10. Tetany, James Stewart, Montreal. 11. Tetany, and a new theory of its pathology, John T. Carpenter, Pottsville. 12. Migraine, its history, nature, and treatment, Wharton Sinkler, Philadelphia. 13. Diseases characterized by loss of consciousness and coma, Israel T. Dana, Portland. 14. Substitutes for opium in chronic diseases, J. F. A. Adams, Pittsfield. 15. The contagion of diphtheria, P. Gervais Robinson, St. Louis. 16. The bacillus tuberculosis, J. T. Whittaker, Cincinnati. 17. How far may a cow be tuberculous before the milk becomes dangerous as a food supply? Harold C. Ernst, Jamaica Plain. 18. A supplementary inquiry into the frequency with which lead is found in the urine, James J. Putnam, Boston. 19 The anatomical and physiological relations of lesions of the heart and kidneys, H. F. Formad, Philadelphia. 20. Specimens from two cases of cretinism, W. F Whitney, Boston.

DEATHS.

Died in Boston, June 15, 1889, Jonathan Mann, M.D., M M S.S., aged seventy-three years.

OBITUARY.

DANIEL V. FOLTS, M.D

Dr Folts was born in Frankfort, N. Y., August 31, 1815. He pursued his academical and literary studies in Fairfield Academy, New York; commenced the study of medicine under Drs Reuben Mussy and De La Mater of the Medical Department of the same institution. He continued them with the same distinguished professors when they went to Dartmouth College, Hanover, N. H. He finally graduated with honor and high hopes at Albany, Medical Department of Union College. He commenced practice with Dr. Jesse Merrill, Franklin, N. H., when, health failing, he located in Springville, N. Y., stayed three years, with good practice, but was induced to settle in East Boston in January, 1846, where he has since that date pursued the practice of medicine and surgery, and won the confidence and esteem of the community. His conscientious care of the patients who were entrusted to him secured many warm friends. His tastes led him to the study of Natural Science in its various branches, and he early became an enthusiast in this pursuit. His interest in the reforms of the day was ever unmistakable, and as a member of the Congregational Church from early years, he was always known as the Christian physician and the good citizen He died May 27, 1889, aged seventy three years and nine months. His disease was cerebral apoplexy followed by paralysis. He leaves a wife, two sons, and one daughter

THE BOSTON

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GEORGE B. SHATTUCK, M.D., EDITOR
CHARLES F. WITHINGTON, M.D., ASSISTANT EDITOR

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Address.

OPENING ADDRESS TO THE SECTION OF PRACTICE OF MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.[1]

BY FREDERICK C. SHATTUCK, M.D., CHAIRMAN OF THE SECTION.

In obedience to the rule of the association that the chairman of each section shall review the progress which the year has brought in those subjects which immediately concern his section, I ask your attention to a very brief consideration of a few of the large number of topics which might worthily find notice here. The practice of medicine, materia medica, and physiology include so much, the workers are so many, and the fruits of their labors are so varied and abundant that the difficulty of selection is itself an embarrassment.

The grass had scarcely grown on the grave of the treatment of pulmonary tuberculosis by gaseous enemata before another curative method was advocated by Weigert,[2] Halter,[3] and Krull,[4] a method which would seem at first sight to have claims to be called curative in that it is designed to remove the cause of the disease by destroying the bacilli *in situ*. We know that the development of this particular microbe is arrested at a temperature of 107° F.; and if, then, the intra-pulmonary temperature can be raised to or above this point and there maintained for a time, the happiest results must follow. I can confirm the statements of the originators of this method as to the ability of patients to breathe with impunity air at a surprisingly high temperature. I have myself inhaled it at 320° F., and seen patients inhale it at 428° F. without notable inconvenience. Nearly six months ago Dr. G. G. Sears, of Boston, began to practise inhalations of hot air on some of my patients in the House of the Good Samaritan. His results are now ready for publication, and it will suffice to say here that an apparatus was used devised by Mr. G. L. Kingsley, of the Harvard Medical School, an apparatus which can be made by any copper-smith for $5, — that patented by Weigert costs in this country $75, — and that we are satisfied that the problem of intra-pulmonary direct germicidal action is still unsolved.

The pancreas, an organ the diseases of which have been until recently of pathological rather than clinical interest, is being dragged from obscurity. Senn's work on cysts of the pancreas is followed up by Fitz,[5] who has collected seventy cases of the several forms of acute inflammation of the organ and subjected them to a rigid analysis which yields a notable increase to our knowledge. A frequent cause of acute pancreatitis seems to be the extension of an inflammation from the duodenum into the pancreatic duct and thence to the interstitial tissue of the organ; which tissue stands in such relation to the peritoneum, the retroperitoneal and retropancreatic fat tissues, as to permit the ready passage of bacteria, and thus account for the peritonitis and disseminated fat-necrosis so often resulting from pancreatic inflammation. Inflammation of this organ is doubtless much more common than has hithero been generally supposed, and is not impossible of diagnosis. The affections with which it is most likely to be confounded are irritant poisoning, perforating gastric or duodenal ulcer, perforation from gall-stones, and acute intestinal obstruction. The first three can be excluded by the history of the case and the associated symptoms; the last by determining the patency of the large intestine through injection, by the seat of the pain and tenderness in the upper abdomen, and by the absence of marked tympanites. I trust that I may be pardoned here for bringing in my own personal experience, which I do with the less hesitation inasmuch as it is not especially to my credit. It was my lot during the past winter to be one of six physicians and surgeons at a consultation: four of us considered the case as probably acute intestinal obstruction, one inclined to perforation, while Dr. Fitz alone held that it was acute pancreatitis and advised against operation. Laparotomy was done, no obstruction was found, multiple fat-necrosis was seen in the omentum, and the autopsy revealed acute hæmorrhagic pancreatitis.

Frerichs long ago noticed the frequency of atrophy of the pancreas in diabetes mellitus; and Lancereaux,[6] in a recent and important paper, calls attention to the relation between these conditions, based on twenty cases which he has seen, with post-mortem verification in fourteen of these. Pancreatic diabetes, in contradistinction from the other forms of the affection, is characterized by sudden onset, rapid course, and severity of the symptoms with great emaciation. In two of the cases, by the way, epigastric colic led to the diagnosis of pancreatic calculus, and the autopsies brought justification.

Here we may allude to the experiments of Pavloff and Smirnoff,[7] which show that in rabbits whose pancreatic ducts have been ligated regeneration of the gland may take place after a new and spontaneous communication with the intestine has been formed.

The much-vexed question as to the nature of diabetic coma, with the indications for the liability of its occurrence in any particular case and the means for its relief, are ably considered by Kirstein,[8] who details the steps through which our present knowledge has been attained. In certain cases of diabetes the organism seems to have lost the power of burning the fatty acids, largely oxybutyric acid, to their normal end products. These cases are characterized by a large increase in the amount of ammonia in the urine rather than by any striking symptoms or complex of symptoms, and these are the cases in which coma is to be dreaded; this form of coma being the result of the formation of larger amounts of free acid than can be neutralized by the ammonia which the organism is capable of supplying, the consequent abstraction from the blood of the fixed alkalies, and thus toxæmia. The quantitive estimation of ammonia in the urine of diabetics is consequently of great importance therapeutically, as well as for prognosis; but, unfortunately, a method for this estimation, readily applicable to clinical purposes, is still lacking. When this large excess of ammonia is found the indications are to restrict the acid rather than the sugar-forming foods, — meats, for instance, — and to give alkalies freely. On the advent of the peculiar dyspnœa, which is apt to be the first symptom of coma, alkaline intravenous injection is to be practised, as has already been done in a small number of cases, Minkowski alone having saved his patient.

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[1] American Medical Association, Newport, R. I., Tuesday, June 25, 1889.

[2] New York Medical Record, 1888, ii. p. 693.

[3] Berl. klin. Wochenschrift, 1888, Nos. 36-38.

[4] Berl. klin. Wochenschrift, 1888, No 39.

[5] The Middleton-Goldsmith Lecture for 1889. Boston Medical and Surgical Journal, 1889, p. 181, 205, 229.

[6] Bull de l'Acad. de Medecine, 1888, Tom. xix. 3eme Serie, p. 588.

[7] Lancet. 1889, i. p. 993.

[8] Deutsch. Med. Wochenschrift, April 11, 1889.

The diseases of the blood have been studied by Graeber, Hunter, and others. According to Graeber,[9] anæmia, chlorosis, and pernicious anæmia are distinguishable from one another by a count of the red corpuscles and an hæmoglobin estimation. Hunter[10] argues to show that pernicious anæmia is an entity, pathological and clinical; depends on increased blood destruction, probably in the liver; and is to be differentiated from all secondary grave anæmias, as, for instance, those of cancer and intestinal parasites, as well as from all other primary anæmias, by the greatly increased amount of blood pigment, responding to the micro-chemical tests for iron, found in the liver in this affection. The spleen contains no such excess of iron as does the liver, and in the latter organ the seat of the pigment is chiefly the outer portions and cells of the lobules, not the capillaries, a fact which goes to show that the blood destruction takes place in the liver itself, the pigment entering the cells in soluble form — hæmoglobin — and there undergoing conversion into albuminate of iron. In all cases where the blood destruction takes place elsewhere than in the liver, and pigment is deposited in that organ, it accumulates in and about the capillaries.

A paper of MacMunn,[11] of Wolverhampton, on Addison's disease is noteworthy. He has studied the adrenals and urine of patients with this disease spectroscopically; and, reviewing our knowledge of the subject, concludes that the function of the adrenal bodies is the removal from the circulation of worn-out pigments and their accompanying proteids. "When the adrenals are diseased, these effete pigments and effete proteids circulate in the blood; the former, or their incomplete metabolites, producing pigmentation of the skin and mucous membrane, and appearing often in the urine as urohæmatoporphyrin; the latter producing toxic effects, and leading to further deterioration of the blood with its consequences."

During the past year the internal antipyretics have continued to seek their level. It is seen that they exert no curative influence on specific febrile processes; and, as we recognize more and more clearly that even continued fever is not productive of the changes in the parenchymatous organs with which we credited it of late years, but that the danger in these processes lies rather in the effects of toxic alkaloids on the nervous centres than in temperature elevation,—as we recognize this fact we appreciate how irrational it is to address our therapeusis chiefly to pyrexia. When the fever is in itself productive of discomfort to the patient the internal antipyretics are useful; but the indications seem to me, at least, strong that the antineuralgic and analgesic will survive the antipyretic application of this class of drugs. On the other hand, it seems probable that the cold bath treatment of continued, and especially of typhoid, fever must be adopted and conscientiously carried out in this country. As the principles of Brand's method gain headway in France, a country not prejudiced in favor of German leadership; as Brand's results are confirmed by other observers and in other countries: and in the face of such statistics as are put into our language by H. C. Wood,[12] Wilson,[13] and Baruch,[14] — it is difficult to see how a people which prides itself on its wealth, general intelligence, and practical qualities can be longer deterred by scepticism, or motives of convenience and economy, from the adoption of a method of treatment which reduces the mortality of typhoid fever to 3%.

The hypnotics sulphonal and amylene hydrate have come into more general use, and prove themselves to be valuable additions to our list of remedies of this class. Unpleasant effects seem rare, while the slow absorption of the one and the rapid action of the other gives each a place.

The treatment of locomotor ataxia by suspension (accidentally hit upon by Motchonkowsky of Odessa, who was struck by the benefit derived by a tabetic patient, also suffering from spinal curvature, after the suspension required in applying a plaster jacket) has spread with great rapidity, and is being thoroughly tested in this as well as in other countries. It is still too early to determine how useful it will prove to an unfortunate class of patients.

At our meeting in Cincinnati last year a discussion took place on the modern methods of diagnosis in diseases of the stomach, and high hopes were expressed that by the examination of the gastric contents an ease and certainty of diagnosis in these affections is almost within our reach, comparable to that which urinary analysis yields in renal disease. The more carefully the question is studied the greater is the demand for yet further study, and the more clearly does the necessity appear for the exercise of great caution in the formation of definite conclusions at present. In the first place, it is now seen that the only single test for hydrochloric acid which has a real clinical value is the phloroglucin-vanillin; the tropæolin, congo red, methyl violet, and other tests either reacting to other acids or acid salts, or being often prevented from reacting by albuminoids, even when free hydrochloric acid is present. Secondly, it gradually appears that it is not safe to base a diagnosis of gastric cancer on even the persistent absence of this acid from the gastric contents withdrawn an hour after a test meal. Such absence is indicative of notable impairment of the functional activity of the mucous membrane, as from a severe catarrhal condition; or of extensive destruction of the secretory glands of the stomach, largely irrespective of the cause of the destruction. Thus, in a case of cancer sharply localized and unaccompanied by catarrh to any marked degree, free hydrochloric acid may be found in sufficient amount until the cachexia is well advanced. On the other hand, in severe but simple catarrh, especially if attended by the formation of much mucus; in atrophy of the gastric tubules; in amyloid disease of the organ; after strong caustics have done their work; even in certain cases of impaired innervation,— no free hydrochloric acid may be detected, though sought for repeatedly with the utmost skill and the aid of every appliance and reagent.

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[9] Fortschritte der Medicin, July 15, 1888.

[10] Practitioner, Aug. 1888, and Lancet, 1888, Sept. 22 and 29, Oct. 6.

[11] British Med. Journal, Feb. 4, 1888.

[12] Therapeutics, its Principles and Practice, seventh ed., 1888, p. 58 *et seq.*

[13] Annual of the Med. Sciences, vol. i.

[14] N. Y. Med. Record, 1889, i. p. 431.

It also appears that hyperacidity, though a frequent, is by no means a constant, accompaniment of peptic ulcer.

Indeed, it is impressed upon us that the pathology of an organ which varies so widely physiologically in the same individual within such short periods of time is a very complicated thing; and the lesson is again enforced that it is not in pathognomic signs, but in careful weighing of each piece of evidence and in the painstaking collocation of them all, that accurate diagnosis is to be attained.

Before leaving this subject I must say a word in praise of Ewald's remarkable work on diseases of the stomach,[15] and of the balance which he preserves while enthusiastically pursuing his subject.

Morton Prince[16] was led by his duties as examiner of applicants for the Boston Fire Department, and by the frequency with which he heard temporary murmurs in vigorous men. to a study of their mode of origin. It has been believed for some years that in debilitated states leakage may take place through the mitral valve, the curtains of which are not tightly closed by reason of the insufficient force of the ventricular contraction. It will be at once appreciated that Prince's cases were the reverse of debilitated: and his ingenious explanation of the murmurs heard in them is that under conditions of great excitement, such as many of the applicants presented. the valve may be forced by ventricular contractions of a power disproportioned to the resistance of the valve. It is not easy to detect a flaw in his argument, and it seems as if he had made an important addition to our knowledge.

There are many other subjects of which I should like to speak did time permit, and were the programme less attractive. Very likely another in my place would have selected quite a different series of topics. The highly important and interesting subject of cerebral localization, for instance, has not been mentioned. But the work which has been done in that direction the past year has been rather in popularizing previous studies, and in the application of their results to practical surgery, than in new discovery.

Prudden's[17] studies of diphtheria and the constancy with which he finds a streptococcus in diphtheritic lesions deserve more than passing mention. So also Hare's Fothergillian prize essay on mediastinal disease.

To sum up the results of the year, it may be stated that it has been one of real though not of brilliant progress. Knowledge has been advanced almost all along the line, more in some parts than in others; bacteriology in its broad sense, including the chemical poisons generated by or accompanying the microbes as well as the identification and life-history of the organisms, offering an enormous field for patient research. One fact seems to me to stand out in strong relief; namely, that our countrymen are on the high-road leading to the attainment of a reputation for scientific research equal to that which they have long enjoyed in the more immediately practical branches of medicine and surgery.

The future glows with a promise which the achievements of the past assure us will be realized; and it is the part of each one of us, if he cannot discover, at least to do all that in him lies to make the highest and best use of the discoveries of others more gifted than himself.

Original Articles.

A MURDERER'S DYING CONFESSION DISPROVED

BY SURGICAL AND ANATOMICAL FACTS;

Read before the Massachusetts Medico-Legal Society. June 11th, 1889

By Benjamin E. Cotting, M.D., &c.,

Senior Consulting Surgeon to the Boston City Hospital, Associate member of the Society.

On the afternoon of July 1st, 1874, a woman, twenty-two years of age, of no very uncertain character, was brought to the Boston City Hospital. She was completely paralyzed on the right side; seemed nearly or wholly unconscious; and had fearful and bloody injuries about the head. The story that came with her was that she had been found in this condition, a few hours before, in her "own hired" room, and in her own bed. When found she was motionless, and was at first supposed to be without life. Her head, neck, and shoulders were red with blood; and under them the pillows, sheets, and bedding were saturated with it. This blood had flowed freely from a number of open wounds on the left side of the head; but there was no spattering on the walls or objects near by. She was lying on her right side, with face towards the middle of the room, in the exact position apparently that she had taken on first going to sleep. Her night-gown and the bed-clothing about her body had not been perceptibly disturbed. Her day garments and smaller articles were orderly distributed about the room, as left on retiring. There was no sign discoverable that indicated the presence of any other person during the night. The room-door was locked, and the key remained in the lock on the inside. The windows were closed, but one was found unbolted. Through this a person could have entered, or escaped, as the room was on the ground floor; yet a most diligent search failed to reveal even the slightest evidence that anything of the kind had been done. At what hour she retired no one could tell; and no response had been gained to repeated applications to her door in the course of the forenoon. Although an adjoining room on the same floor had been occupied that night, its inmates declared that they had not heard a groan or a sound from her apartment.

So far as known she had not an enemy; yet doubtless had angered some one, inasmuch as an unrecognized man had asked for her the evening before, and, not finding her at home, had vowed terrible vengeance as he left the house.

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[15] Klinik der Verdauungskrankheiten, Bd. ii., Berlin, 1888.

[16] N. Y. Medical Record, 1889, i. p. 421; Boston Med. and Surg. Journal, 1889, i. p. 109 *et seq.*

[17] Am. Journal Med. Sciences, March and April, 1889.

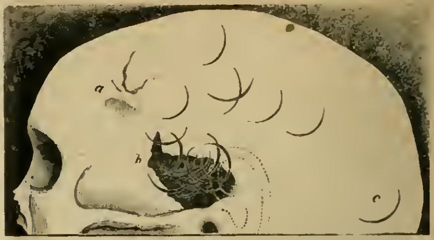
Who did the deed, and what the instrument, were mysteries that seemed at the time to be past finding out.

On examination at the hospital several extensive and complicated fractures of the skull were discovered, with considerable depressions, thought to be chiefly in the outer tablet and not requiring trepanning. On and through the scalp were a number of bleeding wounds, — the hospital record says "nine on the left side of the head, besides several others near the left ear which cannot be separated." The ear itself was "greatly lacerated," caught as it must have been several times on the edge of the instrument when it passed into the scalp. Its helix also, with the cartilage, was cut through at its anterior upper part. These wounds were all of a curved or crescent shape, clean cut, each "little more than an inch long." From two of them "brain substance protruded in a mangled state;" and into one of them, the only one mangled, the finger could be passed, and carried through the broken skull to a considerable depth, without force, in the injured brain — the record states "fully two inches," and Dr. Cowles markedly (on his finger) confirms this statement. The lines of these wounds turned generally in one direction, inclining towards each other at various small angles; in several instances running together or crossing; some mingling in a confused or inseparable manner — particularly at the spot where the finger could be passed into the brain. The little points or tongues of skin, wherever these wounds crossed each other, were perfect to their very tips, and showed no sign whatever of rent or bruise.

The hair was very long and very thick: "We noticed it," Dr. Cowles writes, "to have been cut off quite sharply in correspondence with the cuts in the skin. . . . I am quite clear as to the cutting of the hair."

From the worst wound (it being indeed where were several of those "which cannot be separated") a few fragments of bone of considerable size were taken; and from just within the external opening of the wound some chopped hair, mixed with the mangled tissues there, required removal. The injuries to the bones, including depressions, were estimated to be within an irregular space of about three inches long and nearly or quite two inches wide, somewhat semicircular at its upper or widest part. The external wounds or cuts, also, with one or two exceptions, particularly one in the occipital region (diagram at *c*), were within the limits of such a space.[1] There were no wounds on top of the head, or any other part of the body.

Now, it is evident that a first blow must have instantly stunned and paralyzed this woman — else there would have been movement of her body or derangement of clothing, of which there was neither. This blow may have been given by a bludgeon, a mallet, or a hammer of suitable size, form, and weight. Such blow repeated would naturally extend the fractures, comminute them, and cause any amount of depression in the bony skull. But open wounds in the fleshy scalp by such instruments would as naturally have crushed or bruised edges (not the linear cuts here present) and the blows that made such wounds would have caused a spattering of blood all about — not the free bleeding which in this instance blanched the victim and saturated everything near by.



To account for the fractures and depressions then did not seem so very difficult, — any heavy club might answer. But what produced the curved and curiously situated incisions was a more difficult problem: and experts, professional and lay, called upon to solve it, as well as detectives and friends, all failed to suggest an adequate solution.

Several days after her admission, Dr. Cowles, superintendent of the hospital, called me in, as a consultant, to look at these wounds, to see what I could make of them. The parts had been shaven and fomented. The surface of the skin was quite smooth and uniformly convex — still notably swollen — the swelling covering rather more than the space originally thought to include the injuries to the skull bone. Some of the cuts near the ear gaped a little, but the others were generally in a satisfactory condition, and all had the appearance heretofore described. After hearing the whole story, and a careful consideration of the matter in all its bearings, I suggested that such wounds required a sharp instrument (as all admitted), and that the deed had been done by a mechanics' inch-wide *gouge*, — a tool resembling a chisel, but having, instead of a flat, a "hollow" cutting blade, a longitudinal third or trisection of a cylindrical tube. This is bevelled off, like a chisel, to a cutting edge, which in this way becomes curved or crescent-shaped. If the corners also are ground off, as on turners' gouges (*vide* fig. *inf.*)[2] the cutting end partakes of a rounded, spear-like form, and presents a drawing edge to whatever may be brought in contact with it. Hence it might cut hair almost as easily as a razor. Its handle is usually nearly or quite cylindrical, and of firm hardwood. Thus the tool might be just the club for heavy blows, if held by its metallic end, while its cutting edge would most certainly make wounds like those in question.

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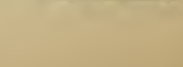
[1] The following diagram may assist in forming an idea of the number, nature, and situation of the curved wounds in the scalp; and also of the location of the injuries in the skull, at *a*, *b*, and *c*, as seen afterward in the specimen. Most of the heaviest blows, with the cutting end of the weapon, excepting that at *c*, must have been in front of the upper lobe of the ear, towards *b*, that is to say, where the skull was much cut through, where "brain protruded in a mangled state," and where fragments of bone were taken out. The temple" was evidently aimed at by the assailant.

[2] The figure below represents the cutting end of a turners' gouge, — showing its curved shape, and the rounded outline of its edge.



Such an instrument had not been thought of; but the suggestion evidently made an impression; for, on the next day, Dr. Cowles came to my house, bringing a turners' gouge, of inch-wide blade, a new one procured from a shop as a specimen by a police officer who wished to know whether that was the kind of instrument I had spoken of, — as it certainly was. The tool brought to me was nearly or quite two feet long — its inch-wide steel or cutting portion and its handle being of about equal lengths. Its handle was a heavy billet of hardwood, smooth, cylindrical, slightly ovoid at the end. Such a tool usually weighs thirty-five ounces, at least a pound more than a policeman's billy. Held by the metallic portion, a blow, given by it as with a club, would be quite capable of crushing in a skull and instantaneously stunning a victim to unconsciousness. Indeed, this would be almost inevitable; and without necessarily breaking the scalp. Repeated blows would have the effect heretofore indicated. This done the operator, without removing his hand, but by simply turning the tool nearly or quite vertical, with edge downwards, could stab the fleshy parts as rapidly and as many times as he chose, before the victim could have time to revive or even move. He could do this after premeditated intention, or on the impulse of the moment, to thoroughly complete the deed. Such stabs would make clean-cut and curved or crescent-shaped wounds naturally turned in the direction of those found; and when the instrument was driven with force it would not be apt to slide or make grooves in the flesh, as a blunt tool would; and might pass directly through the already comminuted bone into the brain itself.

As the skull injuries showed that they could have been made by the handle of a gouge such as that brought to me, so the flesh wounds indicated the blade of a similar instrument. Indeed, Dr. Cowles had already tried the cutting end of the tool he had with him, and found that it would fit the wounds exactly.

Thus the problem seemed to be satisfactorily solved.

Dr. Cowles then went on to say further, that among those interested in the woman was a young mechanic, who was, in fact, so tremulously anxious about her possible recovery as to excite suspicion, and induce the surveillance of the police. Since my visit to the hospital this man had been taken into custody. Proving to be a turner by trade, his workshop and tool-chest had been searched. The chest contained the usual tools, having a series of gouges complete, with the exception of the inch-bladed one. That was missing! The arrested man could not explain its absence, or give any account of what had become of it. He could not even tell when he had used or seen it last; and it was too large a tool to be lost without notice. These were rather damaging circumstances, but he stoutly asserted his entire innocence of the whole affair; and no other evidence was ever found against him. He had, it appeared, known the woman for some length of time, and had always seemed to be anxious for her welfare.

The woman did not in any way connect him in the matter, nor even recognize him; in fact, she was never able to recall the assault or any thing or person of the evening previous — an ante-accident oblivion not uncommon in those who have been severely stunned. The detained man made out an *alibi*; and was subsequently set free. He was generally accounted guiltless of the assault. I am not aware that the missing tool has ever been found, or its loss accounted for.

(As merest conjecture, in solution of this part of the mystery — possibly the man who with "horrid oaths" had threatened vengeance the evening before the assault, while in search of a club, may have robbed the chest of this tool — a very natural thing for a mechanic to do, and not unnatural in anyone on felonious intent. This may have suggested itself more readily to him if he knew the owner was an intimate of the threatened woman, as in such case the missing tool would tend to divert attention from himself and to turn it upon another man. Besides, the carrying a tool would not attract notice; whereas the possession of a club might arouse suspicion. The deed done, he could easily throw the tool into the waters of the dock near by, nevermore to be seen of men. There was, moreover, as rumor had it, an unaccounted-for disappearance from the neighborhood of a man quite competent to all this.)

The injured woman, after a protracted convalescence (during which the paralysis gradually disappeared) and a residence for a time at an asylum, at length regained her usual health and sanity. Before she was discharged, however, she declared her fixed determination to return to her old mode of life; and was soon lost sight of, except by the local police of her own immediate neighborhood.[3]

In May, 1876, nearly two years afterward, a condemned murderer, a few days before his execution, made a "confession" of many of his misdeeds, and claimed this assault as one of the number. He stated that by chance that evening he had met upon the street this woman, before unknown to him; that he went with her to a restaurant; thence to her house, and passed the night there; that, in the early morning, while she was yet sleeping, he pounded her on the head with a hammer, and then left her for dead. He further stated that the hammer might be found buried in the earth in a cellar he had access to at that time. He had had other things there, for murderous purposes, awaiting opportunity. The finding of a hammer gave credence to the story, which was pretty generally acquiesced in. But having had much to do with the case for which this man was to suffer (his last victim having been my patient), I distrusted the narration. Yet what motive, it may be asked, as it has been, for a man so situated to make misstatements? Although now concerned with facts, not motives, here is one among others, quite conceivable. At about that time, in another case, a death-sentence was delayed and a commutation expected (afterward actually granted) on the open avowal of murders and other revolting crimes, — on the ground that "irresistible impulse," or something of the kind, had rendered the villain *not responsible*. More than one murder was chargeable to this last convict. A long list might save his *life*, if his philanthropic sympathizers (after having denounced his sentence as unmerited and too hasty) could be induced to urge upon the government the plea that "he couldn't help it." It would have been the venture of desperation; but it was too late.[4] He soon became "much mixed," and finally broke down.

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[3] Dr. Edward Cowles, now superintendent of the McLean Asylum for the Insane, at Somerville, Mass., kindly permits me to say, that to the best of his knowledge and belief the case in my paper, so far as it came under his observation and cognizance, has been related by me in a true and faithful manner.

As to my patient, I had, as her murderer at last acknowledged, given in open court more correct details of the deed than he was able to recount when, in sight of the gallows, he attempted a narrative of his now admitted crime, — admitted to his amazed legal defender, whom he had deceived, up to that moment, into full belief of his innocence.

In regard to the injured woman, his statements were so defective, or so at variance with my observations as a medical man, that, for myself, I soon became convinced that he never had anything whatever to do with her, unknown to him, as he admitted, up to the day of the assault.

But the hammer! It was (I have seen it), a smiths' hand or riveting hammer,[5] with circular face of seven-eighths of an inch in diameter, not very sharply defined at the edge, but enlarging almost at once into a square form of an inch and three-eighths diagonal line; weighing only rather more than a pound, handle and all; not very likely on a first blow to completely stun in an instant, and thoroughly paralyze one struck by it, or to cause, with its small face, large fractures or depressions in the skull, or any fracture at all without leaving small, local, pulpy bruises in the scalp where struck, and not a uniformly smooth swelling as in this case. The *pein*, or wedge-shaped end of such a hammer, if the blow were of sufficient force, might cause a fracture, but then the wound left in the scalp would be a *straight*, mangled furrow or indentation. In like manner its round face would have a soft or pulpy and somewhat cup-shaped depression. If an open wound of the full size of its face could be so made, it would be circular, of course; but if less complete and of an inch in length (more than the diameter of this hammer's face), it could not be of a lesser arc than a semicircle. One, or two such wounds segregate, might be *imagined*, perhaps, but half a score or so would be clearly impossible. Now, the wounds we had to deal with were crescent-shaped, not semicircular; were sharply defined incisions, all of equal lengths, variously inclined and running into or crossing each other, and in themselves hardly conceivable as the work of a hammer, or as made by anything else than a sharp, cutting instrument. Besides, no hammer's blunt face could be forced into and through the skin, except at an angle, and then the opening would be bruised down on one side and crushed off on the other, according as the instrument slipped, as it inevitably would more or less, on a rounded skull. Furthermore, we repeat, wounds made by a blunt tool might spatter their blood, but not set running so many freely flowing vessels. Bruised wounds do not bleed like incised ones. Again, and fatal it would seem in themselves to the "confession." —

(*a*) No hammer, however keen its circular face-edge, or other blunt tool, could make such "sharp" *cuts* in and through the mass of hair this woman had, — no, not one such; much less a score; (*b*) Nor is it possible, supposing a human arm had the power, that a hammer-head, being only one inch and seven-eighths in length from its face to the hole for its handle, could be forced through such hair, scalp, and skull, into the brain to a depth in all of "fully two inches," without making a much larger opening, carrying in to the very depths hair, flesh, and fragments of bone, and leaving a very different state of things on the outside from that here found.

All that was done, however, could have been easily effected with a turners' gouge.[6]

Not long ago, March 20th, 1889, fourteen years after the injured woman left the hospital, a notice appeared in the newspapers that her body had been received at the morgue. I immediately called on Dr. Harris, medical examiner, who at once, with most courteous readiness, offered all facilities possible at so late a period. He had not known anything of her previous history; but had been told that after a prolonged drunken debauch, of which she had had many, nature giving way, she fell into a state of exhaustion, and in a few days thereafter had a painless and peaceful death. The cause of death had been officially reported "alcoholism."

Even in the grimness of her present surroundings and after such a life she was not ill-looking. Her face and features were not disfigured. She had "never had disease," except from alcohol, and was not wasted. Her head-of-hair was quite extraordinary in abundance, great length, softness, and glossy blackness. It had been well cared for; even the officials of penal institutions had respected it; and, contrary to their usual custom, had left her in full possession.

There had been an autopsy, and everything had been replaced in proper order; not then to be further disturbed. I sought out, however, the external scars in the scalp — an important matter. They were not at first easy to find on account of the thickness of the hair. They were there, nevertheless; and, except near the ear, where was a wrinkled group, they were delicate, linear, crescent-shaped scars, unmistakably the result of clean cuts, or incisions healed by first intention, — not of bruises. There could be no doubt in the matter.

Some weeks later I had a chance to see the "specimen," — deprived of most of its integuments. Looking at it in front, a general depression of the middle of the left side, as compared with the right, was quite evident; and this occupied about the space estimated in the first examinations at the hospital. Such a uniform and shallow depression suggested the result of blows by a weapon of considerable size, without angular projections, — a smooth club, most probably.

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[4] This supposition is not necessary to the argument, and perhaps it implies too great facility in expedients; but a man who could thoroughly hoodwink his friends and advocates at will, could readily take a new tack when convinced that the one he was on was soon to prove fatal.

[5] A friend reminds me that the murderer said that he used a plasterers' (*i.e.*, lathers') hammer — quite a different tool from that found; an instance of his inability to give details correctly. The hammer, as found, was so defective and weak in its handle, where attached to the metallic head, that a very feeble blow would have broken its head off.

[6] A small matter, perhaps, but tending to show the kind of instrument used, — almost all, if not all, the curved wounds had their points forwards or somewhat turned diagonally upwards, precisely as if made by a gouge held as one, when about to strike such blows, would naturally hold it — at its middle near the junction of the handle, with the tips of the fingers resting high up in its metallic, "hollow" part.

On side view, about two inches above the anterior third of the zygomatic arch, there appeared evidences of former fractures (diagram, at *a*). From a point on the frontal bone near the parietal several lines of old callus radiated at acute angles as from a centre. Between two of the uppermost of these was a double triangular prominence about an inch long and quite an inch and a half or more wide as it diminished off towards the base.

Very likely the fractures at this place came from the first blow the woman received from her assailant.

On, or just above, the level of the zygomatic arch, there was an oblong opening in the skull — beginning at the largest portion, just in front of the anterior part of the temporal ridge, and extending forwards about two inches (diagram, at *b*). The upper and lower bony edges of this opening, irregular in outline, were not rough, having been smoothed off naturally in progress of time since the injury. The lower border seemed to be of two nearly equal lines, each very slightly curved and joined together at an angle, open upwards, of about a hundred and twenty degrees. The upper border of the opening was rather more irregular, but equally smooth. The anterior limits ended in a point, almost, while the posterior or aural portion was three-fourths of an inch, or more perhaps, across. From this space undoubtedly came the fragments of bone removed at the first examinations. Here too, near the ear, the finger could be passed into the brain, but no hammer of the size and form of that found could have ever made an entrance through such an opening. A gouge could have done this, and easily have shaped the lower border of this cavity.

On the occipital bone, about three inches behind the meatus auditorius, was (at *c*) a well-marked curvilinear depression of about an inch chord, which, with a slight ridge inside, gave strongest evidence of a former wound by an instrument that had gone completely through the skull at this point. This was where (in Dr. Cowles's trials, before mentioned) the gouge would most exactly fit the fleshy wound; and the prolonged depression of the enclosed fragment of skull showed with what difficulty the tool must have been wrenched from its impackment in the bone. Now, indeed, if any one can conceive of anything better adapted to produce such a wound than a gouge, he must have greater powers of imagination than I can lay claim to. Even with such an instrument the blow must have been given with very great force. Not to insist that, in the position the victim was lying, the blow of a hammer in the hand of an assailant, if it made a curved indentation, must have made one in a different direction, — no hammer-head, even if held as a punch and struck by a sledge, could be driven through all the coverings of the skull and the skull itself at that place, and simply cut out, or force in, a circular, or as in this case an almost semicircular, fragment. A general crush of all the neighboring parts would be inevitable. A small hammer in the single hand of one person would seem wholly out of the question.

There did not appear to be anything else in the "specimen" attributable to the assault now under discussion.[7]

To recapitulate, — it appears from the length and width of the space involved in the fractures, and the depressions being in the outer table chiefly, that the victim had been struck by a club of some kind, — one of considerable size, and smooth also, inasmuch as the scalp was not laid open by it;

That, instantly stunned and paralyzed, her motionless insensibility permitted other blows, and the infliction of any number of open wounds;

That the wounds actually made, a score or so scattered or inseparable, were curved or crescent-shaped, with clean-cut edges, the little points, at the crossing of any two, whole and clearly defined, not bruised; that these wounds were of nearly equal size, each a full inch in length; and, further, that they were cut through thick hair "quite sharply," and through the scalp also, in one or two instances going quite through, and deeply into the brain; all evidently done by some kind of sharp-edged instrument;

That these wounds bled freely, as cut wounds generally do;

That a turners' gouge fulfils all the requirements of the case; while the hammer utterly fails in regard to the open wounds, and, as we think, in every particular.

Such are the premises; and such the offered solution.[8] An adequate explanation, however, ought to be enough to hold against the improbable, or the defective.

To some persons the circumstances attending the "confession" may seem to add credibility to the murderer's story, but they should not. The confession of criminals, even when without motive and only tending to increase their infamy, are not received by courts of justice unless supported by other and more trustworthy evidence. Dying persons, in their feeble and imperfect utterances, seldom fully know what they are talking about, as momentary revivals often prove. In the partial delirium of weakness, as in half-sleep, a person striving to say one thing may utter something very different from what he wishes, semi-consciously, and in spite of himself. Last words, ordinarily of little moment, should be construed with caution, for too seldom can they bear the interpretations one would gladly give to them. Death-bringing illness, while killing the body, generally, even where and when least expected, clouds or nearly obscures the intellect, and fills the mind with baseless delusions, while the crushing terrors of impending destruction seem at times to start up in a culprit's mind remembrances of crimes which he never committed.[9] What wonder then, that, broken down by despair, the last straw of hope floating away, with mental powers utterly demoralized,[10] a doomed man, with or without rational motive, magnify his many misdeeds, assuming the acts of others which he had gloated on, and incorporating them with his own.

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[7] There were three little depressions in the outer table near the vertex, two on one side of the sagittal suture and one on the other side, — as if it were at the corners of a right triangle. They were each capable of holding half a large pea, flattened. They were out of the reach of a weapon of any kind as the woman was then lying; and, as there were no wounds of any kind in that region when she was admitted to the hospital, they could not have had anything whatever to do with this assault.

I have the support of the highest authority in saying that there is nothing in the "specimen" inconsistent with the theory that a gouge was the instrument used by the assailant.

[8] Its elucidation an after-thought — else more thorough in details — incited by the last notice in the newspapers of the woman and her avowed assailant.

At all events, this portion of the murderer's "confession" I did not believe at the time. I do not believe it now. Facts in the case disprove it.

N. B.—After reading my paper a friend called my attention to an article in the London *Lancet* (Apr. 20, 1889, p. 819) wherein the writer asks, "Are most dying declarations unreliable evidence, and how may we differentiate them?" and then says, in answer, "If a human being be aboulic . . . . if suffering from extreme nervous exhaustion through terror or otherwise . . . . his [dying] statements are unreliable as evidence, ... and the sooner medical jurists insist on the alteration of the position and value of such testimonies the better it will be for society and for mankind."

THE MOVEMENTS OF THE LOWER JAW.

BY CHARLES E. LUCE, HARVARD DENTAL SCHOOL.

THIS paper presents the results of certain original investigations conducted in the physiological laboratory of the Harvard Medical School under the direction of Prof. Henry P. Bowditch. The results obtained are interesting, as they indicate the exact movements of the jaw, and prove that certain errors exist in all descriptions of this articulation as given by the eminent anatomists and physiologists.

These discrepancies may be briefly noted as follows:—

Monro[1] wrote, "that the mouth could not be opened, if the lower jaw was protruded, without withdrawing it from its advanced position;" this is clearly incorrect, as will be indicated later.

Ferrein[2] was quite accurate in his description, but he wrote that "the condyle advances under the eminence;" in many cases it goes under it and mounts the other side, which he omitted to say.

Humphrey[3] falls into the same error and said that "the condyle advances upon the glenoid ridge and should not go quite to the summit," which in many cases it certainly does.

Morris[4] was in error when he wrote that the condyle itself never reaches quite so far as the summit of the glenoid ridge.

Kuss[5] wrote that the lower jaw, as it rises and falls, represents a lever moving around a supposed axis centred at the condyle, which remains in the glenoid cavity in small openings; and in greater separation the supposed axis is placed at, or near, the dental foramen; this is also incorrect, as will be proven later.

Quain[6] states "that the condyle rests on the convex root of zygoma when the mouth is opened. As stated above, in most cases it advances farther forward than he states.

The error of Gray[7] is in the statement that in openings of slight extent, the condyles simply rotate on a transverse axis against the cartilages, whereas the condyles begin to move forward simultaneously with the beginning of opening. Again, he says the condyles simply "glide on to the articular eminence."

The first requisite in the study of jaw movements is to move the jaw and get a permanent record of the movement; the method used was the photographic, the same as that used by Marey and others, and may be described as follows: a bright silver bead was fastened to a wooden pin or dowel, which was firmly inserted between the inferior central incisors; with the subject in a strong sunlight, so that a bright spot should be reflected from the bead, a pure profile or side view was photographed, and the sensitive plate was exposed during the opening of the mouth; the bright spot reflected from the bead during the motion was continuously photographed and its excursion recorded on the negative as a line, giving the actual movement of the place upon the jaw to which the bead was opposed.

The earlier experiments dealt solely with the simple tracing at the symphysis, and while the results obtained with one bead were both instructive and interesting, the more valuable results were found by getting the relative movements of condyle, angle, and symphysis; to get tracings at these points, a light framework was constructed, which simply reached around the face from the lower incisor teeth, to which it was securely fastened, nearly to the ear; adjusting devices held bright beads which could be placed directly opposite the condyle, angle, and symphysis; the photographing took place as before, each bead making its tracing.

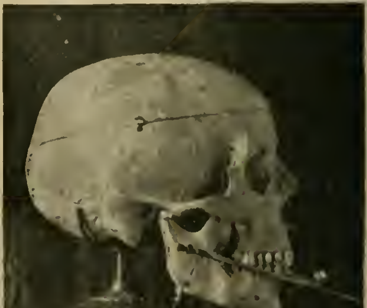

FIG. 1

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[9] "An instance of remembering events that never occurred."—H. W. B. on testimony in another noted case.

[10] A recipient of another part of the "confession" says of it that it was "true so far as a person, with a mind so thoroughly demoralized as his had been, could make it." In fact, it is to be surmised that his statements generally would require corroborations from other testimony.

[1] Medical Essays, Edinburgh, 1735.

[2] Collection Academique, Paris, 1785.

[3] Humphrey's Human Skeleton, 1858.

[4] Anatomy of the Joints, Morris.

[5] Lectures in Physiology, Kuss, Duval.

[6] Quain's Anatomy, 1883.

[7] Gray's Anatomy, 1887.

Figure 1 shows the device as applied to a skull; the pin is inserted between the lower front teeth, two of the bright beads being adjusted directly opposite the condyle and angle, the other in front of the symphysis. It is apparent that the jaw and device will move in concert, and that the movement of the beads is, in fact, the same as that of the points opposite to which they are placed.

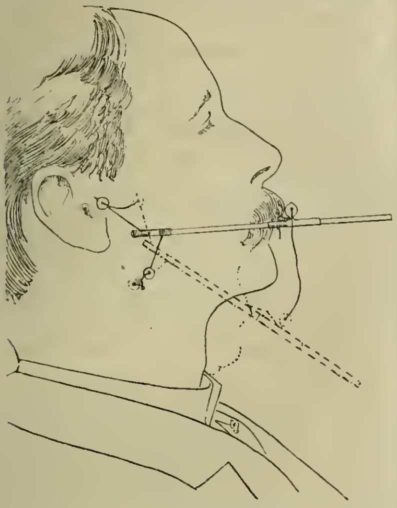

Fig. 2.

Figure 2 represents the tracings as taken at the three points mentioned.

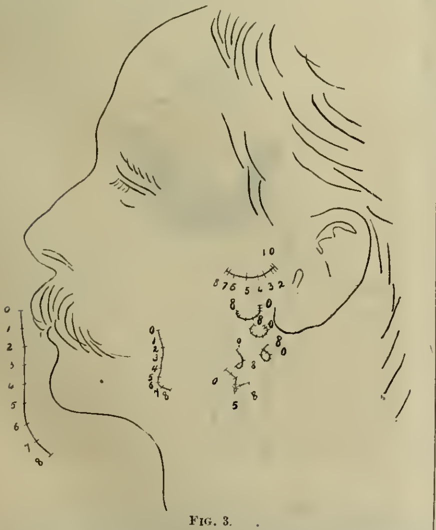

Fig. 3.

It now becomes necessary to indicate the methods by which the several tracings were subsequently studied. The picture was enlarged in outline by optical projection, and the tracing of the opening at symphysis was subdivided into convenient spaces; then, by means of dividers, corresponding points in the tracings at condyle and angle were determined as follows.

Referring to Figure 3, it is evident that the distance between the point marked 0 in the tracing at symphysis and the point marked 0 at the condyle does not change, inasmuch as both points are attached to a device which does not change its length; and though these points may seek different positions when the mouth is opened, the distance between them remains the same; and we find the ends of the tracings at 8 to be the same distance apart as at 0, the beginning. If the dividers are set at the proper distance, we can find, by simple measurement, how far the condyle moves in a given movement at the symphysis, and the motion of the angle is worked out in the same manner. The numbers on the tracings in Figure 3 indicate the positions occupied simultaneously by the various points of the jaw, the movements of which have been studied.

The tracings at all points in the jaw are readily understood, if we regard their motion as the result of a combination of a uniform downward and backward rotation round the condyle, with a forward motion of the condyle itself in a curved line, with the concavity upwards, always bearing in mind that this movement of the condyle is, at first, slow, then more rapid and subsequently slow again. It is evident that points in the immediate neighborhood of the condyle will have a movement differing very little from that of the condyle itself, while at more distant points the backward rotation round the condyle will be relatively more prominent, because the motion is on the circumference of a larger circle.

The tracings in Figure 3 illustrate this point. It will be noticed that the tracing nearest to that of the condyle is, like the latter, a curve with its concavity upward, but at the beginning and end of the motion, where the movement of the condyle is relatively slow, the rotation round the condyle is able to impress its backward motion upon the tracing. In studying the motion of points in the ramus, successively more and more distant from the condyle, we observe that the backward rotation becomes more and more prominent as a factor, and the forward movement due to the gliding of the condyle round the articular eminence less and less marked. The fact that this forward movement is most rapid in the middle of its course explains the loop-like character of these tracings, which is retained even so far down as the angle of the jaw.

By referring to Figure 3, it will be noticed that the condyle begins to move forward immediately, and even in a small opening of the mouth it performs quite a considerable excursion, contrary to the assertion of Gray and others to the effect that in small openings the condyles simply rotate on a transverse axis against the fibro-cartilages.

Again, it is stated by Morris, Humphrey, and others that the condyle never quite reaches the summit of the eminence; most of the tracings show that it does reach the summit and even begins to mount the anterior side, as may be seen by Figure 3.

There are, however, exceptions, and it seems necessary that any assertion as to the action of this articulation should be qualified by the statement that there is considerable individual variation in the relative movements of condyle, angle, and symphysis.

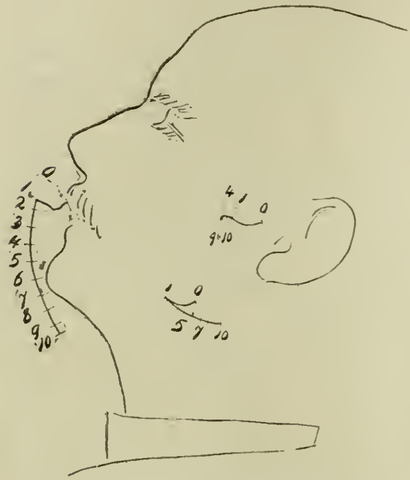

Fig. 4

The idea of Meyer[8] that the jaw is suspended or hung in its lateral ligaments is substantially correct, and we can readily see that in moderate opening, when the condyle advances, the movement of the angle is comparatively slight, but when the capsular ligament becomes tense the condyle is kept from farther anterior movement and the angle goes back, as may be seen in Figure 3, the jaw swinging from the attachment of the lateral ligaments on the temporal bone.

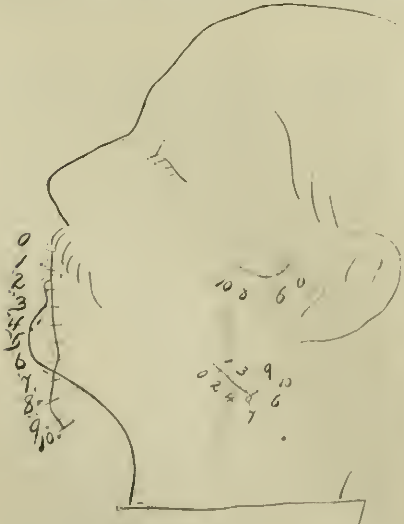

Fig. 5

Monro, as I have previously stated, said that if the jaw was protruded it would be impossible to open the mouth without the jaw sliding back, or a dislocation occurring, and Ferrein disputed this statement.

Figure 4 vindicates the Frenchman, inasmuch as it shows that after protrusion, when the mouth was opened the condyle continued to advance, contrary to Monro's theory.

Figure 5 is a tracing of a subject who tried to keep the condyle back while opening the mouth, and it is shown, by comparison with the normal opening in Figure 3, that the condyle was held back in a measure, but the interesting point in this connection is that although Gray asserts that the condyle simply turns on a transverse axis in the cartilage in small openings, this tracing proves that the condyle advances even if an effort is made to hold it back.

Other tracings were taken of the down and up motion of the jaw with the subject facing the camera. While the sensitive plate was being exposed the mouth was opened, the bead making its tracing, and when the mouth was opened widest the head was turned slightly, that the tracing of the bead in closing should not be in contact with the opening tracing.

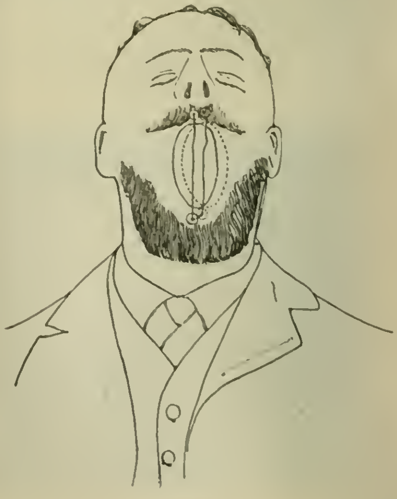

Fig. 6.

The lines drawn show that the jaw is not depressed or closed in a straight line; the tracings taken contain several curves, which will vary with the same person at different times, on account of the extreme mobility of this articulation and the fact that the condyles do not advance synchronously.

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[8] Die Statik und Mechanik des Menschlichen Knochengerüstes. Leipsig, 1873.

These tracings are interesting to dentists, inasmuch as they show what has to be contended against in taking the "bite" preparatory to the insertion of an artificial denture.

To conclude, as Ferrein said one hundred and fifty years ago, the movements of the lower jaw are not well understood, and much that is written of them is at least faulty. Probably some inaccuracies may be explained by the fact that anatomists have made too much use of the cadaver to demonstrate the actions of the articulations, whereas it may be that the contraction of the various muscles coöperating with and antagonizing each other is the important factor in determining the exact movements of the jaw.

If these investigations throw any light upon the movements of the lower jaw, or awaken an interest in the further study of them, something will have been accomplished.

REPORT ON PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

PARALYSIS IN POTT'S DISEASE.

Elliott[1] has considered, in a careful and comprehensive article, the mechanism of the lesion or lesions which give rise to pressure paralysis in Pott's disease. As the old theory of injury to the cord by the encroachment on the canal by the crumbling vertebræ was seen to be unreasonable, by the fact that the degree of deformity does not materially influence the occurrence of paralysis, and also that specimens often show no encroachment on the canal, however much the direction was altered, attention was directed to the cord; and after the observations of Michaud, Charcot, and others, it was accepted that the paralysis was due to a myelitis, the result of a mechanical lesion. Of late, however, the inflammatory nature of this lesion has been doubted. Erb speaks in favor of a process of softening, and Strümpell claims that he has never found signs of inflammatory change in cords compressed by spinal caries. The following facts are urged in favor of a purely mechanical cause: A mechanical cause is present in the diseased vertebræ, and the tendency to formation of abscess cavities, the walls of which are partly formed by the thickened dura and anterior ligament, which have undergone a change characterized by the name of pachymeningitis externa caseosa; the bulging of this is into the canal toward the cord; clinically, the appearance of a gluteal or psoas abscess is followed by a disappearance of the paralysis; the site of the diseased dura is limited to the place of the diseased vertebræ, and does not extend to its inner surface, while the examination of the cord does not give evidence of any condition incompatible with compression. Experiments producing compression give results which from analogy favor this view — that the pathological change in the cord is the result of mechanical pressure only. The following summary is given: —

1. We have a simple mechanical process in the form of an abscess cavity, thickened dura or bone.
2. The inflammatory process is invariably a limited one, the inflammation of the dura being limited exactly to the site of the diseased vertebræ, showing no tendency to extend in the membrane — Nature's protection.
3. The ventral or medullary surface of the dura, at the site of the lesion, is almost invariably normal.
4. The pressure lesion is simply a mechanical one, manifesting no tendency to involve the spinal cord, through any inherent specific character of the carious process — a simple, bland mechanical lesion, and the damage it does commensurate with pressure exerted.
5. Pathological examinations have in the majority of cases necessarily been limited to old cases where the lesion had existed for a very considerable period, and such examinations usually revealed the cord largely converted into connective tissue, at the site of the lesion.
6. The presence of sclerotic tissue at the site of compression is no evidence that the original lesion was of an inflammatory nature, since it is a well-established pathological law that throughout the nerve centres destruction of nerve tissues by processes degenerative or otherwise is invariably followed by increase of connective tissue.
7. Experimental physiology gives no evidence of an inflammatory lesion following experimental compression of the spinal cord.
8. Finally, a careful revision of the pathological findings, in carefully reported cases, reveals to us in the light of recent pathological knowledge but a very few cases (4) where we have reason to believe the lesion to have been inflammatory. The suppurative process had been a very virulent one, and the pia mater had become involved. In three of the cases the dura mater has been perforated.

There are certain cases which he claims would be folly to consider as due to either myelitis or compression as described. Such are those in which the paralysis is of short duration, or the recovery is very rapid. These he considers are due to the indirect interference with the circulation. The blood-supply of the central part of the cord is by small arteries, and the anastomosis is not free. The lesion in pressure paralysis is not deep, and the arteries, situated on the surface of the cord and nerves, are at a disadvantage. Also, it is known that the inter-vertebral foramina are filled with exudation material, and microscopical examination of the arteries shows a thickening of their walls. Thus there is ample opportunity for considerable interference with the circulation. Erb says that softening and necrosis follow after this interference reaches a certain degree. Also, if the venous outflow is hindered there may be hæmorrhage from the engorgement. In favor of this theory of vascular disturbance he gives the following statement of the points demonstrated:—

1. Loss of blood-supply to the spinal cord produces motor and sensory paralysis. This is the result of experimental physiology to that end.
2. Increasing interference with blood-supply to the cord produces gradually increasing paralysis.
3. The blood-supply of the cord depends largely

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[1] Trans. Internat. Med. Cong., ix. 1887, iii. 363.

upon the reinforcing branches which pass through the inter-vertebral arteries.

4. These arteries course over the surface of the cord.

5. The symptoms of this form of paralysis arise from affection of the anterior rather than the posterior portion of the cord, of the superficial rather than the deep, and the pathological findings sustain the clinical picture.

6. We have further shown that the result of the interference with the blood-supply may be in all degrees, from partial impairment of function to complete ischæmic softening.

7. This form of paralysis complicates a lesion when there are inflammatory products pressing upon the nerves and arteries coursing through the inter-vertebral canals.

8. The clinical picture of the vast majority of these cases is satisfactorily explained by the variance of the vascular mechanism.

The following conclusions are given as embracing the etiological condition of this disease:

1. A lesion producing pressure paralysis is in certain cases of an inflammatory character, a true myelitis, manifest in either the parenchymatous or interstitial form.

2. The vast majority of cases, however, we believe are due to a mechanical lesion, of which the circulatory cause is but a variety, and that this is in the future to be made the basis of pathology, and will merit the place held by the inflammatory theory of to-day.

TREATMENT OF JOINT TUBERCULOSIS.

Gester[2] calls attention to two aids of anti-tubercular therapy, preventive and curative, which he considers do not receive the attention they amply deserve.

First — the ice bag, on the principle demonstrated by Koch, of the extraordinary sensitiveness of the bacilli of tuberculosis to slight variations of the temperature of the soil in which they grow. This depression of temperature does not kill the spores, but brings about an arrest of growth, during which time the general power of resistance can be strengthened, and the healthy tissues can throw up around the focus of disease a wall of protective tissue. The class of cases especially benefited by this treatment are those of purely synovial tuberculosis.

The second "consists in the early ferreting out and surgical evacuation of tuberculous cheesy foci located in the epiphysis of the bones entering into the formation of this or that joint."

In adults, owing to the difficulty of orthopedic treatment, especially of the lower extremity, he advocates early exsection, and sums up as follows: "In tuberculous affections of the joints of adults in poor circumstances, especially those of the lower extremity, early operations are indicated and justified; total exsections deserving the preference, as a rapid and lasting cure is most desirable."

In children with local articular disease he advocates removal of the diseased portions only. This removal should be very thorough, that no diseased bone may remain as foci of extension of the process. This is aided by continuous irrigation with strong solutions of corrosive. General infection from the mechanical disturbance of the joint, called by Koenig "operative dissemination of tuberculosis," should be carefully guarded against. In such situations where an Esmarch bandage may be employed, this is easily avoided, but with the hips and shoulders special precautions must be taken. Such are, the avoidance of all rough force, clean work with the knife wherever possible, and the use of continual irrigation whenever the scoop is used to remove granulations, carious bone, or cheesy matter.

Barker,[3] in an article on the operative treatment of tubercular joint disease, describes an instrument used by him, by which the diseased portions are detached and washed away at the same time. It consists of an ordinary scoop, the handle of which is hollow and opens into the concavity of the instrument. A rubber tube of an irrigator is attached to the handle, and a free flow of water can thus be directed at the point of operation, under the immediate control of the operator.

ARTIFICIAL AUGMENTATION OF THE GROWTH OF BONE.

Max Schüller.[4] The theory is based on the principle that increase of blood-supply is frequently followed by an activity in growth, as is often seen after chronic inflammatory processes, this occurring when the disease affects the diaphysis, but when the epiphysis, or interarticular cartilages are the seat of disease, a decrease in bone formation ensues. Langenbeck, Bergmann, Dittel, Tillmann and others have made observations on the regeneration of bone. Helferich, von Bidder, and Haab have confirmed them experimentally. Pathological increase in bone growth has more rarely been observed after fractures, in joint disease, etc., and only in children. Experiments show that irritation results in an increase of bone formation. This may be done by scratching the periosteum, insertion of pegs, or by an elastic bandage producing an artificial congestion, as recommended by von Helferich. Schüller produced irritation in bone by means of steel pins, which were driven into the affected bones and left in four or five days. The results were very favorable. These cases are given with decided improvement. One case was of infantile paralysis, one of resection of the ankle leaving a loose joint, and one of genu valgum. An increase of bone formation occurred in each, with an improvement in usefulness of the limb.

Schüller tried the elastic ligature in cases of infantile paralysis. He so applied it that it compressed the veins but not the arteries. In addition he employed massage, exercise, bathing, diet, etc. At first the bandage was allowed to remain only a few hours, but later was worn continually. Improvement occurred in all. In two cases reported there was an actual increase in the length of the bone.

RESECTION OF LONG BONES.

Arthur Neve[5] gives his results of resections of shafts of long bones, about two hundred in all. The operations were for necrosis, more or less extensive, and in some cases the entire shaft was removed. The periosteum was carefully preserved, and in no case was there failure of reproduction of bone with useful limb, and only two cases were fatal. The primary resection is applicable to those cases in which more or less general necrosis is inevitable, and particularly for those cases of acute periostitis, sometimes called osteomyelitis, following fracture. The patients react quickly and well, even those reduced by long suppuration. The reproduction of the osseous tissue is usually rapid; in one case, in which four and a half inches were removed, the patient walked in a month.

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[2] Trans. Med. Soc. N. Y., 88, 478.

[3] Brit. Med. Jour., 1889, I, 121.

[4] Deut. med. Zeitschr., 88, No. 99, from J. Med. Sc., Feb., 1889.

[5] Am. J. Med. Sc., 1889, Mar., 229.

Secondary resection, that is, of healthy bone, is on a different basis. In this operation the age of the patient and condition of the periosteum is to be considered as well as general conditions, as there is danger of too great interference, and a failure to obtain sufficient new bone formation, and in early operation on cases other than of total necrosis it is not easy to estimate the amount of bone that will be sequestrated. When there is considerable central necrosis it is better to remove a part of the circumference, as the cases heal much quicker.

After resection of the whole thickness of a long bone, shortening and distortion is to be guarded against.

(*To be continued.*)

Reports of Societies.

FORTIETH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION,

HELD AT NEWPORT, R. I. JUNE 25TH TO 29TH, 1889.[1]

General Session — Second Day — Wednesday, June 26th.

The meeting was called to order by Dr. W. W. Dawson, the President, who called upon the Right Rev. Thomas U. Clarke, Bishop of Rhode Island, to offer prayer.

Dr. William Pepper, provost of the University of Pennsylvania, then gave the address on general medicine.

It consisted almost wholly of a biographical sketch of Dr. Benjamin Rush, of Philadelphia, who was born in 1745 and died in 1813. He was surgeon-general and physician-general of the Continental army, and professor of the theory and practice of medicine in the Philadelphia Medical College. In 1785 he planned the Philadelphia Dispensary, the first in the United States. Dr. Rush was by far the most prominent of the doctors of the Revolutionary period, — so prominent, in fact, that he was to the American medical profession what Dr. Sydenham was to England. His fame rested chiefly on his great efforts in the epidemic of 1793, when he stood out beyond all his colleagues as the doctor whose practice most resembled the practice of the present day, although he treated fevers and phthisis by bleeding. His use of the lancet was compared with that of Dr. Sydenham and the present day, and the opinion given that in the earlier periods of disease it is a question if the practice of these older men was not, at times, better than the present. After considering the practice of Dr. Rush in the case of fevers, in which he advocated the use of cold water and dieting, Dr. Pepper spoke of his great abilities in other directions. In mental diseases he was a pioneer of rare sagacity, large wisdom, and enlightened humanity. His course in consumptive cases was referred to and his advanced views shown. In every way Dr. Rush was a pioneer in the field of medical practice, and the history of American medicine practically begins with and was for a time the history of Dr. Rush.

Surgeon A. L. Gihon, U. S. navy, chairman of the Rush Monument Committee, then read his report, starting with the statement that the committee could report no progress compared to their expectations, and, at the present rate, there was no hope even of any of the present committee ever living to see the monument. It was thought there would be no trouble in getting $40,000 if the doctors each contributed one dollar for the purpose. After five years the committee had but one thousand, instead of the forty expected. The history of popular monuments generally agreed, however, with this, the speaker quoting the Washington, Grant, Liberty, and other monuments to show how slow the American people were in such matters compared with the Old World. He made an eloquent plea for some decisive work, and announced that the $1 limit was dropped and larger sums would be taken.

During the morning $264.50 was received, one of the contributors being Dr. Earley, whose family physician Dr. Rush had been. Several propositions were made to further the work of collection, and it was voted to appoint a canvasser in each county to personally solicit.

Various amendments to the constitution were proposed, discussed, and rejected.

A resolution from the section of state medicine was read, stating it to be the duty of the United States and every other country to abolish sources of infection within their borders.

Third Day — Thursday, June 27th.

A communication was received from the Social Science Association inclosing a copy of resolutions passed by that association demanding a more thorough training for medical students, and petitioning the State legislatures for laws against incorporation of bodies unqualified to teach medicine.

The memorial was accepted.

Dr. Hooper, of Arkansas, offered the report of the trustees of the journal of the association.

The report showed that the weekly circulation was four thousand six hundred and thirty-three copies, four thousand three hundred and thirty-nine of which were sent to members of the association; the present edition was five thousand, and the journal was free from debt.

THE ADDRESS IN SURGERY

was delivered by Phineas S. Connor, M.D., of Cincinnati.

It was one of much interest, reviewing the progress of surgery in the past forty years, showing the triumphs of anæsthetics, of antisepsis, of internal operative surgery, whether in the abdominal, the thoracic, or the cerebro-spinal cavities, and indicating the probable conquests of the surgeon in the future — especially in regard to tuberculous and cancerous affections.

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[1] Continued from page 650, vol. cxx.

Dr. Connor brought his eloquent and hopeful address to a close with the following words:—

As we survey the advances, etiological, diagnostic, and therapeutic, made in the few years just past, that are of the scientific period, and consider, even in the most hurried way, the problems that are yet awaiting solution — problems relating to nature, origin, and treatment of the diseases and injuries of parts within the domain of surgery — what may we not reasonably anticipate as the future of our science and art! Accidents must occur, diseases will prevail, no matter how great the triumphs of preventive medicine. Surgical pathology is but in its infancy. Years ago it was declared that operative surgery had reached its climax. Yet since then operations have over and over again been done within abdomen, chest, and skull, upon the larynx, throat, and spinal cord, that in boldness of conception and brilliancy of execution have no parallel in the history of medicine. The end is not yet, nor will be while, the world over, there are active minds and cunning hands busied with the determination of the existence and extent of surgical affections, and ready and able to remove them, aided more and more by labors of investigators in many departments of science, general as well as medical. Year by year he who may deliver the address on surgery will be able to report doubts removed, discoveries made, remedies employed, and operations done.

The next meeting of the association it was decided to hold at Nashville, Tenn., the third Tuesday in May, 1890.

The report of the nominating committee was accepted and the nominees were elected as follows: —

President, E. M. Moore, of Rochester, N. Y.; vice-presidents, J. W. Jackson, of Missouri; W. W. Kemble, of Minnesota; J. H. Warren, of Massachusetts: T. B. Evans, of Maryland; permanent secretary, Wm. B. Atkinson, of Philadelphia; treasurer, R. J. Dunglison, of Philadelphia; librarian, C. H. A. Kleinschmidt, of Washington, D. C. Trustees of the journal, T. O. Hooper, of Arkansas; Alonzo Garcelon, of Maine; I. N. Love, of St. Louis; W. W. Dawson, of Cincinnati. Address in medicine, N. S. Davis, of Illinois; in surgery, Hunter McGuire, of Richmond; in state medicine, A. L. Carrol, of New York. Chairman of the committee of arrangements, W. T. Briggs of Nashville. Assistant secretary, G. C. Savage, of Nashville.

Dr. F. Woodbury, of Philadelphia, offered a resolution, which was adopted, recommending the alteration of our patent laws in so far as these now favor foreign manufacturers of drugs.

A resolution from the section on state medicine was adopted recommending uniformity in State medical legislation; that a thorough preliminary examination, three courses of lectures, and an examination by the board issuing a license be required; the license to practise be recorded in the office of the county clerk; and that the licensing board be endowed with power to revoke a license on acount of immoral conduct.

Dr. Woodbury, of Philadelphia, moved that the members of the American Pharmaceutical Association be invited to seats on the platform, and that a committee be appointed to confer with the association in reference to the creation of a section of pharmacy and materia medica in this association, and to report on the second day of the next annual meeting.

Sir James Grant, of Ottawa, was presented and made some brief remarks.

Officers of sections were elected as follows for the ensuing year: —

Practice of medicine — Chairman, J. H. Musser, Philadelphia; secretary, Hugh McCall, Lapere, Mich.

Surgery and anatomy — Chairman, B. A. Watson, Jersey City; secretary, John B. Deaver, Philadelphia.

Obstetrics and diseases of women — Chairman, W. W. Potter, Buffalo; secretary, Joseph Hoffman, Philadelphia.

State medicine — Chairman, J. B. Hamilton, Washington; secretary, F. S. Bascom, Utah.

Laryngology and otology — Chairman, John O. Roe, Rochester; secretary, Frank H. Potter, Buffalo.

Diseases of children — Chairman, I. N. Love, St. Louis; secretary, E. F. Brush, Mt. Vernon, N. Y.

Dermatology and syphilography — Chairman, I. E. Atkinson, Baltimore; secretary, W. T. Corlett, Cleveland.

Oral and dental surgery — Chairman, J. L. Williams, Boston; secretary, E. S. Talbot, Chicago.

There was no election in the section of Ophthalmology.

SECTION OF THE PRACTICE OF MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

First Day — June 25th, 1889.

The section was called to order at 3 p. m. by the Chairman, Dr. F. C. Shattuck, of Boston, who, in accordance with the usual custom, reviewed the progress of medicine in the past year.[1]

The first paper was read by Dr. C. G. Stockton, Buffalo, N. Y., on

THE PASSAGE OF PORTAL BLOOD INTO THE GENERAL CIRCULATION, AND ITS PROBABLE RELATION TO TOXÆMIA.

The reader claimed, first, that the occurrence of inosculations between the portal and general systemic veins was to a certain extent normal; that these intercommunications might as anomalous conditions be extensive; that obstructive liver diseases, or peri-hepatitis, might result in the production of new anastomoses.

Second, that the blood of the portal vein was toxic in character, at times extremely so. The lower pressure of the blood in the portal than in the general venous circulation was held to be the reason of prevention of toxæmia in ordinary cases. In case of obstruction in the portal circle portal blood entered the systemic veins without filtering through the liver, thus inducing toxæmia.

Were it not for the action of the blood upon the substances which are carried into the circulation this would prove more disastrous than it does. The blood in health possessing the power of self-purification to a certain extent, serious toxæmia did not often follow until the integrity, the resistance, of the blood was diminished by long effort or by disease, and then toxicity was made evident by symptoms.

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[1] See page 1 of this Journal.

Reference was made to the coma of cirrhosis, to propeptonuria, glycosuria, and certain cachexiæ. The low pressure in the portal vein was proved by experiment of Prof. Julius Pohlman upon lower animals.

DISCUSSION.

Dr. William Osler, Baltimore, in opening the discussion, said he doubted if toxæmia in hepatic cirrhosis received its solution in this way. The collateral circulation, of which the reader spoke, was not a rarity, but a constancy; for the blocking of the channels in the liver due to cirrhosis must be met by collateral circulation; and in every case of cirrhosis whether symptoms occurred or not would depend entirely upon the degree of collateral circulation established. It was the counterpart of the narrowing of a valve in the heart; if compensatory hypertrophy occurred symptoms were slight Most extreme cases of cirrhosis had been found post mortem without a single symptom in the individual's lifetime. In such a case a large proportion of the portal blood was passed into the systemic circulation. Furthermore, those still rarer instances of firm fibroid, obliteration of the portal vein, where all the portal blood had had to find its way for years into the systemic circulation, seemed quite opposed to such a theory.

Dr. W. S. Tremaine, United States army, thought a mistake was often made in thinking of the portal circulation and the portal system as distinct from each other. The portal circulation was a part of the venous circulation, the liver being interposed. The portal circulation contained blood which differed from that found in other portions of the venous system, and when the blood passed through the liver it passed through for certain purposes, many of which were not clearly understood. He thought these toxic symptoms were due rather to defective action of the liver in eliminating deleterious or in producing other products which might be necessary. He agreed with the reader with reference to his remarks on the blood. He was inclined to look upon the blood, not as a homogeneous fluid flowing through the blood-vessels, but as an organ capable of manufacturing certain substances which might be necessary to life, and capable of removing or destroying deleterious substances. Digestion, he believed, did not conclude with the liver, with the stomach, with the intestines, but was carried on in the blood. We were apt to be led into error by accepting certain physiological statements as facts, while they were often only theories.

Dr. J. H. Musser, Philadelphia, said that clinically the forms of coma he had seen in cases of cirrhosis of the liver, or after other liver derangements, he had explained either by the occurrence of cholæmia or possibly uræmia. The liver was a poison destroyer, and when its function was destroyed coma might arise from toxæmia.

The establishment of collateral circulation was something we should look forward to as offering relief to our patients.

In all the cases of coma he had seen there had been some determining factor prior to the coma disturbing the balance of the economy, as for instance pneumonia, which interfered with oxidation, or an extreme degree of congestion of the lungs or some other organ, some serous membrane particularly.

Dr. Hare, Philadelphia, expressed the belief that any capillary network was just as destructive of poisonous substances in the blood as the liver. Experiments seemed to show that the liver, so far as poisons were concerned, was nothing more than large capillary networks through which these poisons had to pass.

It seemed to him reasonable that the interference of oxidation in pneumonia might be a cause for some of these toxic symptoms, owing to the presence of effete matters in the blood.

In regard to the influence of the blood which passed from the portal vein into the systemic circulation in the production of poisonous symptoms we must bear in mind that if it contained peptones thoroughly converted by the gastric juice no disturbance would result, whereas semipeptones would produce very distinct toxic symptoms.

Dr. C. G. Stockton, in closing the discussion, said he did not deny that in cirrhosis and in other diseases involving practically occlusion of the portal vein no serious symptoms might occur. He did not wish to be understood as directing the paper towards cirrhotic coma, but he had used that as a marked illustration. He admitted that the inosculations were common, but held that portal blood did not flow into the systemic veins, except when there was obstruction in the liver, because of the low pressure in the portal vein. This low pressure was the only protection, he held, to the entrance of portal blood into the general circulation, and there must be present a condition producing portal obstruction to allow the portal blood to flow out in this way. If the liver had this function of acting as a capillary network and prohibiting some of the poison entering the blood, and the blood could overcome to some extent the poison that entered, he held that the low pressure in the portal vein was conservative, and that certain toxæmias from certain obstructive diseases of the liver occurred because this blood entered the circulation in a toxic condition and led to toxæmia.

Dr. G. R. Martine, of Glen's Falls, N. Y., read a paper on

A NEW PLAN FOR THE TREATMENT OF PNEUMONIA.

Dr. Martine alluded to the many general plans of treatment.

The first abnormal symptom after the premonitory chill was quickening of the pulse and increased flow of arterial blood, and in consequence a distention of calibre in the arterial vessels, overstraining of capillary walls, and extravasation of blood corpuscles. Reduction of the temperature at this stage would not hold in check this increased flow of blood to the lungs, which, if unrestrained, was sure to end in consolidation.

Now, the whole method of the new plan could be given in five words, viz., Hold the pulse below

80. Keep your fever thermometer in your pocket; it was of little or no use in pneumonia.

Death did not result from high temperature in pneumonia, but from high arterial action, resulting extravasation and consolidation and consequent heart-failure.

In holding the pulse veratrum viride had seemed to serve the reader best, yet he admitted that other arterial sedatives might in the hands of others act as well. If the pulse be held below 80 in adults or at 100 to 120 in children, with perfect vigilance, no further trouble need be apprehended; for in that condition there would be no extravasation, if no extravasation no consolidation, if no consolidation no hepatization, and if no hepatization no suppuration, mortification, or death.

Heart-failure in uncomplicated pneumonia would be a thing impossible, provided this plan be followed.

DISCUSSION.

Dr. Atkinson, Baltimore, objected to the claim made for veratrum viride in the treatment of pneumonia. Veratrum viride had undergone severe tests and had not, he thought, yielded the results claimed in the paper.

In pneumonia patients died not so much from filling up of the lung with blood as from failure of the action of the heart, and it was this failure that we must guard against in treating our patients. He did not think a remedy capable of depressing the action of the heart was one especially to be recommended in cases where the very condition of depressed heart-action was the one we must dread.

Dr. Hare, Philadelphia, thought the great trouble in the use of veratrum viride in pneumonia was that the fact of two diametrically opposite conditions in this disease was lost sight of. In the first stage of pneumonia there was a perfect "rush" of blood into the lung due to over heart-action, and it was in that stage the veratrum viride should be given to abort, not to cure, the pneumonia. In the second stage, where the heart's action was weak, digitalis was indicated.

In regard to the poisonous properties of veratrum viride, there were only four fatal cases recorded. This was owing probably to its emetic action, and the emetic action was the element in the cardiac depression. When veratrum viride proved fatal it was through depression of the respiratory centre, not by depression of the heart.

Dr. G. R. Martine, in closing the discussion, claimed that his plan was new in this, that no writer had told us when to hold the pulse and prevent consolidation and consequent heart-failure. Heart-failure would not come on in pneumonia if the patient were properly treated and the pulse held. When the lungs became filled with blood we began to get heart-failure. The right side of the heart, in trying to force the blood through, became fatigued. His plan prevented the filling of the lungs with blood and consequent heart-failure. He had treated pneumonia in this way thirty years, and he did not expect to lose an uncomplicated case of pneumonia any more than a case of toothache.

Dr. John H. Musser, of Philadelphia, read a paper on

SOME CLINICAL ASPECTS OF VOMITING.

Dr. Musser called attention to the mechanism of vomiting, saying it was a reflex act due to excitation of a vomiting centre situated in the medulla in intimate relation to the respiratory centre. Motor influences were transmitted from the centre to the abdominal and thoracic muscles, to the œsophagus and cardia, causing its relaxation, and to the pyloric end of the stomach, causing its closure. Excitation of this centre was made by impulses derived by afferent nerves from various organs of the body. It was shown that the vomiting may be toxic in origin, may be from organic change about the centre, as tumors, abscess, etc Lastly, it was reflex from affections of the brain and of various organs, all of which were detailed.

Attention was called to morning vomiting, and causes other than those usually mentioned were detailed, as in sewer gas poisoning; to vomiting due to subacute naso-pharyngeal catarrh, and to ovarian and uterine vomiting, etc.

Some special clinical aspects of vomiting were then detailed, and it was insisted upon that in affections of various organs vomiting might for some time be the only marked symptom, and particularly if the function or structure of an organ was not interrupted. Cases of pneumonia, peritonitis, intestinal obstruction, etc. were detailed, and vomiting that attends apoplexy described.

Regarding the relation of this symptom to cerebral hæmorrhage the following conclusions were presented: —

1st. That constant vomiting in the aged, painless, with or without nausea, with no evidence of indigestion or acute gastritis, the ejection composed of mucus or a watery fluid, was often one of the first symptoms of central hæmorrhage.

2nd. Such vomiting was not attended with the usual symptoms of relaxation and with the sthenic phenomena which usually attended apoplexy.

3rd. If the usual collapse symptoms occurred in a person of that age the vomiting was more likely to be due to a uræmic origin.

4th. If the respiration was altered in rhythm, or was of normal frequency or hurried, because of the intimate relation of the centre of vomiting and the pneumogastric centre, the cause was doubtless a central hæmorrhage. Hurried breathing attended the acute vomiting of other causes.

5th. The occurrence of vertigo was not of special significance.

6th. The prognosis was very grave in such cases.

Habit vomiting, so called, was then described.

DISCUSSION.

Dr. C. G. Stockton, Buffalo, N. Y., said that one point particularly struck him, and that was vomiting in connection with naso-pharyngeal catarrh. He thought also that chronic gastric catarrh was a common accompaniment of naso-pharyngeal catarrh, and that vomiting in these cases in his experience had almost always been accounted for by the gastric catarrh.

Dr. W. G. Scott, Ohio, said that in his experience patients who vomited at any time — in the midst of a meal or after a meal, etc. — always had some trouble with the stomach, and frequently we had catarrhal condition, the secretions of the stomach changed entirely.

Dr. I. E. Atkinson, of Baltimore, read a paper on

SOME OF THE RARER AND GRAVER FORMS OF CINCHONISM.

Dr. Atkinson devoted most of his paper to detailing cases in which cinchonism had occurred from the administration of rather large doses of quinine, also cases where quite marked symptoms had resulted from small and often-repeated doses. His general conclusion was that the physician should use caution in repeating the larger doses, owing to the risk of amaurosis and other symptoms indicative of poisoning by quinine. Oftentimes smaller doses were efficient, and it should not be the routine practice to employ large doses; and when large doses were indicated the use of quinine subcutaneously would be a good substitute, as the dose was much smaller when so used.

Dr. Hare, of Philadelphia, called attention to one explanation why cinchonism did not result oftener from large doses of quinine; it was due to the fact that it often passed the pyloric orifice without being acted upon, was precipitated and passed out with the stools, not having been absorbed.

Dr. W. G. Scott, Ohio, said large doses were by no means always innocuous, and were not always passed out without being dissolved.

In treating malignant intermittent fever small doses would not arrest the fever, and people had died, he thought, for want of a good large dose. He had never seen cinchonism or bad effects from the legitimate use of quinine. Such a remedy, however, which exerted such an influence upon the central nervous system, if not needed, might do harm.

Dr. J. H. Musser, Philadelphia, said it had been found that ordinary cases of intermittent fever seen in the neighborhood of Philadelphia could be controlled with smaller doses than were formerly given. One grain three times a day had been found, by Dr. Osler's experiments, to be efficient in causing the disappearance of the changes in the blood.

Dr. W. S. Tremaine, U. S. army, thought the size of the dose depended entirely upon the locality and what one had to deal with. If the malarial poisoning was intense, large doses were indicated; if mild, small doses might suffice.

Dr. Atkinson, in closing the discussion, said he did not wish to raise a question against quinine in large doses, but simply that the administration of large doses was not without very serious danger, although bad effects were rare.

No doubt large doses of quinine often passed through the alimentary canal unabsorbed; and the old practice of giving a large dose of calomel before giving quinine was justified in that it cleared out the upper portion of the intestinal canal of its alkaline contents and kept the contents of the stomach acid, and thus facilitated the absorption of the quinine. When amaurosis resulted from large doses of quinine, although it might never be complete, yet it might result in such permanent damage to the eye that in his opinion only the greatest emergencies justified the lavish giving of this drug, and where large doses were necessary it was better to give smaller doses under the skin than enormous doses by the stomach.

Dr. Robert T. Edes, of Washington, read a paper on

HYDRONEPHROSIS AND RENAL ATROPHY; ESPECIALLY AS RESULTING FROM FUNCTIONAL DISTURBANCES OF MICTURITION.

The ordinarily recognized mechanical causes of hydronephrosis were stated. Systematic authors admitted that there were cases not explicable by any of these causes.

Two cases were reported.

1. A boy with frequent micturition but probable retention of urine, who presented symptoms of interstitial nephritis, and was found, after death, to have a large bladder, dilated ureters, atrophied kidneys, and hypertrophied heart, no mechanical obstacle being present.

2. A little girl with albumen, casts, and pus in the copious, light urine was noticed to have some difficulty in micturition. After dilatation of the urethra the casts soon disappeared and later the albumen.

The back pressure of urine necessary to produce moderate hydronephrosis with renal atrophy was not great.

The bladder was a portion of the apparatus necessary for the discharge of the urine, and was not to be regarded simply as a passive reservoir.

In order that it might perform its function properly a certain balance between the nervo-muscular apparatus promoting the discharge (detrusor urinæ) and that restraining it (sphincter vesicæ) was necessary. If this balance was disturbed either by paralysis of the detrusor or by spasm of the sphincter, pressure was thrown back toward the kidneys and dilatation of the passages took place, followed by renal irritation and destruction of the parenchyma.

In the constantly recurring spasmodic action of the bladder in cystitis, with the consequent exaggeration of the intravesical pressure, the same thing might occur, with this modification, that the urine which was backed up being mingled with inflammatory products, the result was a pyonephrosis, rather than a hydronephrosis.

It is suggested that some cases of interstitial nephritis in the young, even when accompanied by hypertrophy of the heart and not differing greatly in symptoms from the disease which was more familiar in persons in middle life, might have a local origin in unrecognized causes of this kind, rather than the constitutional changes so prominent in the etiology of the Bright's disease of later years. A few cases were to be found in medical literature bearing on the subject of the paper.

SECTION OF SURGERY.

First Day — Tuesday, June 25th.

The address in this section was by the chairman, Dr. N. P. Dandridge, of Cincinnati, on

THE SURGERY OF THE SPINAL CORD.

It is only within a few years that the surgery of the spinal cord may be said to have come into being. The surgeon of a former generation never thought of opening the spinal canal for the removal of the effects of injury, or for the cure of disease. The method of treating Pott's disease by extension is also a modern method.

There are certain lesions, as tumors, where without an operation the surgeon is powerless to render aid. In Pott's disease simple extension sometimes works wonders; sensation and motion, previously lost, return after application of a plaster jacket and suspension. Instances were cited where a paralysis of eight months' duration was cured by this method; in one case the patient had been paralyzed for two years.

Resection of the spinal arches of certain of the vertebræ by relieving pressure (removal of a clot, of certain exudations, etc.) has often enabled the spinal cord to recover its functions.

Fractures of the vertebræ are not as fatal as they were once believed to be; 21% survive, and of this number 10% make a good recovery, while 11% are completely disabled. Extension has given good results in some cases of vertebral fractures; trephining has been attended with only partial success.

Of the various modes of extension, the hammock suspension had been especially successful in the practice of the reader.

In fractures of the cervical vertebræ any displacement should be rectified at once; in dorsal and lumbar fractures there may be a reasonable delay, and here suspension, with the plaster jacket, sometimes works wonders. Marked depression of the arches and laminæ calls for instant trephining.

Dr. W. H. Pancoast, of Philadelphia, spoke of the importance of extension in fractures of the spine. There are cases of fracture of the vertebræ that cannot be diagnosticated during life. Again, there are cases of death due to shock where the bones and ligaments are intact. Dr. Pancoast is confident, from many observations which he has made, that often in cases of hanging the person dies from shock without fracture; there is not even rupture of the ligaments.

The next paper was by Dr. H. H. Smith, of Philadelphia, on

CONCUSSION OF THE SPINE IN ITS MEDICO-LEGAL ASPECT.

The legal liability of capitalists and corporations for damages for neglect to provide for the safety of individuals who have entrusted their persons and their lives to their care may be seen to date from Lord Campbell's Liability Act in 1848. Since this time the various States of the Union have incorporated in their ordinances statutes making companies and corporations liable to damages for loss of business and time, for physical injuries sustained by persons through ignorance, carelessness, and neglect of officials or employees. Since then incalculable sums of money have been paid, especially by railroad corporations. Juries are almost certain to find against these corporations, and physicians have not always placed themselves in an attitude of impartiality when called to testify in behalf of their clients.

The reader believed that the professional opinions of twenty years ago on the vexed question of concussion of the spine are now utterly unreliable, nor does he think that Erichsen should longer be regarded as an authority on the subject. There has been a great advance in the knowledge of the histology (normal and morbid) and symptomatology of the spinal cord within the last two decades. He asked, "Does the so-called 'railroad spine' exist?" and while believing that there is such a theory as spinal concussion with no recognizable organic lesions, where only molecular disturbances are assumed to exist, yet he does not hesitate to affirm that such cases are extremely rare. Fraud is very common. According to Hodges' estimate, out of forty-nine cases thirty-six were proved to be fraudulent. Most cases are attributable in the last analysis to hysteria or malingering. The reader was of opinion that serious organic disease very seldom follows concussion; and if the symptoms were simply subjective, if there were no organic manifestations, as loss of sensation and motion, loss of reflex excitability, vaso-motor disturbances, muscular atrophy, he should doubt the existence of any serious injury. Any grave lesion of the cord will certainly be followed by objective symptoms, and these will ensue soon, in a few hours or days, not months, after the injury. He gave from his record-book instances in support of this statement, but here the morbid phenomena accompanied grave myelitis with softening, the result of the injury. He did not believe that jars from travelling, as when cars are coupled with too much violence, ever cause such lesions. A severe shock to the spinal cord may give rise to hæmorrhage, or effusion, to some form of myelitis with more or less paralysis and muscular atrophy, but in such cases we have something besides subjective symptoms for a guide. It is true, however, that sometimes a pre-existing neurasthenia may be awakened and aggravated, or a latent hysteria developed into active exercise. The physician should weigh well the probabilities of these conditions in any give case, as well as the chances of fraud and dishonesty on the part of the patient.

Dr. Herbert Judd, of Galesburg, said that the question of concussion of the spinal cord had become a matter of business, in the pursuit of which ignorant or unscrupulous physicians in concert with knavish lawyers and dishonest laymen "bled" the railroad companies; millions of dollars had, in fact, the past twenty-five years been paid to settle claims that were for the most part fraudulent. For all this such authorities as Erichsen were largely to blame. Generally there are nothing but "subjective" symptoms to substantiate these claims. We ought always to suspect imposture where there is no paralysis, no muscular atrophy, or other objective manifestations.

This business is demoralizing society. It is by no means uncommon for a person with a reputation for honesty and truthfulness to "nurse" a really trivial injury into a permanent disability, and impose on even the wary physician; thousands of dollars damages are obtained, and the patient speedily gets well. People than lose confidence in the honesty and competence of physicians; and the medical profession is brought into ridicule. This matter of spinal concussion is largely a "bugaboo."

More people are annually injured by ordinary vehicles (as by upsets) than by railroads, but how seldom do we see spinal concussion follow; he doubted whether there be such a thing as spinal concussion as some authors have described it.

Dr. William Brodie had seen so much of the unfairness and injustice of juries towards railroad companies, that he now advised railroad officials to settle instantly by a money payment whenever a complaint was made of injury received on a railroad by cars running off from the track, or in any other way.

Dr. B. A. Watson said that he did not believe in spinal concussion as Erichsen describes it. Is there such a disease analogous to concussion of the brain? If there be such a disease it is extremely rare. That the spinal cord sometimes receives severe injury from blows, falls, the force of a nearly spent bullet, the impact of sea-waves, etc., he fully believed, but in such cases there are generally fractures of vertebræ, rupture or stretching of ligaments, hæmorrhagic extravasations, etc., which produce decided and more or less permanent objective symptoms. Even in the case of the existence of the latter, the physician should be on his guard, and satisfy himself that the paralysis or muscular atrophy was not produced by some other cause.

In his (Dr. Watson's) experience, railroad accidents more frequently cause injuries of the viscera than of the nervous system. The lungs are lacerated, or contain hæmorrhagic infarctions; there are lacerations of the liver or spleen, ruptures of blood-vessels in the bladder or other viscus.

Dr. Penrose, of Philadelphia, communicated to the association a paper on the same subject, which was read by the secretary. The views advanced were similar in kind to those above presented. He thinks that spinal concussion analogous to cerebral concussion is almost unknown. He protests against the robbery of cities and corporations by claimants who have nothing but pain or other subjective symptoms to substantiate their claims.

Dr. W. H. Pancoast had a word to say in defence of the general public who have certain rights of protection which they may justly demand of railroad officials. He did not believe that there had been as much shamming as had been represented by previous speakers. He had some faith in spinal concussion as the older authorities have taught it, where long disability without paralysis or atrophy follows an injury, and thinks that the victims of accidents should be recompensed for even a temporary shock and consequent sufferings.

Dr. Smith, in closing, said that the railroad companies are always ready to settle just claims. Witness the Lehigh valley awards. It is the exaggerated and fraudulent claims that they contest.

Dr. M H. Richardson, of Boston, read a paper on

THE SURGERY OF THE PERIPHERAL NERVES.

It was a very reliable presentation of the results in the Massachusetts General Hospital of neurectomy and nerve stretching for neuralgia and painful muscular spasm. Exsection has been oftenest performed in the inferior dental nerve, which is comparatively easy of access. In 1876 the first operation for avulsion and destruction of the whole nerve was performed, and this operation has been several times repeated since then. The buccal nerve has in several instances been divided where it comes out over the buccinator, and the inferior maxillary nerve has been cut down upon at its point of emergence from the foramen ovale, and a portion exsected. This is a rare and difficult operation. Nerve stretching has been performed mainly for neuralgias of the sciatic. The operation has been five times performed in the Massachusetts General Hospital; the results have not been favorable. He does not think that traction stretches the spinal cord. In neuralgias of the inferior dental nerve, stretching has done good in a few cases. Muscular spasm has in some instances been relieved by nerve stretching, *e.g.*, stretching of the facial for tic douleureux, stretching of the supraorbital nerve for spasm of the brow muscles, of the spinal accessory for spasm of the sterno-mastoid and trapezius.

There have been seven cases of nerve suture; these pertained to the median, ulnar, and musculospiral nerves, and this operation was attended with marked though very gradual return of power and function. The nerve ends must be freshened, brought loosely together, and a few fine catgut or silk sutures put in.

Dr. W. H. Pancoast spoke of neurectomy of the fifth nerve, as performed by his father, the late Dr. Joseph Pancoast. The latter was the first to reach the inferior maxillary nerve trunk by sawing through the condyle, and to cut it close to the foramen ovale. He (the speaker) had made several exsections of the sciatic and crural nerves in obstinate neuralgias.

Dr. Gordon, of Portland, said that he had several times stretched both sciatic nerves, then the anterior crural, for the *douleurs fulgurants* of locomotor ataxia; the operation was attended with great relief.

SECTION ON OBSTETRICS.

First Day.

President, Dr. W. H. Wathen, of Louisville, Ky.; secretary, Dr. A. B. Carpenter, of Cleveland, Ohio.

CHRONIC INVERSIONS OF THE UTERUS

was the subject of a paper by Dr. Henry O. Marcy, of Boston, who presented numerous illustrations of this trouble in crayon drawings, and made a very interesting talk and demonstration. He sketched somewhat briefly the history of chronic inversion of the uterus and its etiology, and then discussed more fully the pathological changes which ensue. He somewhat critically reviewed the experience of Dr. Thomas and his followers in first performing laparotomy in order to dilate the cervical constriction and thus aid the reposition of the organ. He had studied the matter faithfully and at last came to the conclusion to pass long ligatures of coarse silk deeply through the cervical tissues which he determined were possessed of ample resisting power. The doctor presented an instrument, simple, yet possessed of sufficient power for the work. It has at the distal end a cup-shaped extremity for the reception of the fundus. The deep cervical ligatures, four in number, are attached to a movable sleeve adjusted upon the shaft of the instrument. By means of a screw in the handle pressure is brought to bear upon a concealed spring and the force applied is at once determined upon a graduated scale, showing the amount of pressure. Dr. Marcy reported one case which came under his care during the past year. Dr. Clark, of Cambridge, Mass., and Dr. Cleveland, of New York, spoke in terms highly complimentary of the instrument.

Dr. E. E. Montgomery, of Philadelphia, read a paper on

THE INDICATIONS FOR AND LIMITATIONS OF THE OPERATION FOR THE REMOVAL OF THE UTERINE APPENDAGES.

He concluded that the operation should be promptly performed in every case in which it is evident that relief cannot be otherwise obtained. It should be considered a *dernier ressort*, and its consideration should be dismissed in every case capable of restoration to health by other plans of treatment.

Dr. Joseph Price, of Philadelphia, read a paper on

A SERIES OF FIVE HUNDRED CASES OF CONFINEMENT IN A MATERNITY,

in which he gave the minutiæ of the treatment in a maternity hospital in Philadelphia with which he is connected. The treatment was after the highest and most approved method of cleanliness. He said the talk a few years ago was to abolish the lying-in hospitals on account of their terrible mortality. The tables are now turned, and the greater mortality is in the private practice. He wished to invite a discussion which would lead to more refinement in the technique of the treatment of labor.

Dr. Thomas Opie, of Baltimore, had visited the maternity spoken of and found it unique. He had great hopes for the future in this line.

Dr. Hirst, of Philadelphia, considered the plumbing of great importance. In an infirmary where he practised he had the closets put in towers where the ventilation was excellent, and had noted within twenty-four hours a fall of temperature. He had found the mortality to be very great in tenement houses where the plumbing was at fault.

Dr. W. T. Lusk, of New York, thought that the practitioner should hold himself responsible for the plumbing of the house in which he delivered patients.

Dr. Henry D. Frey, of Washington, D. C., read a paper on

THE APPLICATION OF THE FORCEPS TO TRANSVERSE AND OBLIQUE POSITIONS OF THE HEAD; DESCRIPTION OF A NEW FORCEPS.

He had sent circular letters addressed to the teachers of obstetrics in the United States asking their practice in these conditions and the kinds of instruments they used. He gave their replies in a tabulated form. He thought the obstetrician should not content himself with one form of instrument, but be expert with several, so as to be able to use them as occasion demands.

Dr. Wm. S. Stewart, of Philadelphia, read a paper on

WHEN SHOULD THE OBSTETRIC FORCEPS BE USED, AND WHAT FORM OF INSTRUMENT IS REQUIRED?

They should never be used to save time or to satisfy nervous women or fidgety nurses. We should use the form of forceps best fitted to the particular case. He presented a pair of his make which he had used in a number of cases with good success. In these either blade can be introduced first, the child is not disfigured, and they do not slip.

Dr. Joseph Taber Johnson, of Washington, M. C., thought that women in childbirth were entitled to all the skill of the obstetrician, and spoke in high praise of the forceps in labor.

Dr. Theophilus Parvin, of Philadelphia, regarded the instrument exhibited as the revival of an old instrument, which will also become an old instrument and be revived by some one else. He thought it dangerous, that it would crush the child's head. It was an ingenious, complicated instrument, but we want simplicity. The power is too far remote from the resistance for the nearer you can get a horse to the load he pulls the better he will pull.

Dr. Joseph Price, of Philadelphia, looked upon the forceps of Dr. Stewart as dangerous instruments.

Dr. Thomas Opie, of Baltimore, read a paper on

THE KINSHIP OF OBSTETRICS AND GYNECOLOGY.

He reviewed the history of obstetrics from the earliest times and always found it closely allied to the diseases of women. He found obstetrics and gynecology bound together with hooks, forceps, and specula of steel. A few years ago the opinion was that lying-in-hospitals should be abolished. Now they challenge private practitioners with their results. Gynecology has grown out of obstetrics, an obstetric development, they are separated but not divorced; they interdigitate. The gynecologist should know obstetrics and the obstetrician should be a good gynecologist. The very nature of the gynecologist insists that he should be first an obstetrician. To know the abnormal he should first know the normal. United they stand like Siamese twins. To separate them would inflict irreparable injury. The obstetrician has long cried honestly against feticide, that old commandment, "thou shalt not kill," and the gynecologist against Onanism, the limitation of families and sterility. He considered the thought of breaking up this long-standing alliance between obstetrics and gynecology, which had taken the form of a resolution before the general sessions, sinful.

Dr. H. R. Storer, of Newport, read a paper on

BENJAMIN RUSH AS AN OBSTETRICIAN.

In studying medical numismatics he had been struck with the importance of the work of Benjamin Rush in the department of obstetrics. Fifty years ago the idea of the induction of anesthesia in obstetrics was an American idea in the mind of Rush, and he, after observing a painless delivery while the mother was in an epileptic fit, and another while the mother was intoxicated, prophesied the finding of a drug which would relieve the pains of childbirth. The writer brought this subject up before this section because he thought Rush a man who deserved well of the section in obstetrics, especially as an effort was now being made to raise him a monument. On resolution the paper was referred to the general sessions when the subject came up.

Dr. W. W. Potter, of Buffalo, N. Y., read a paper on

BORACIC ACID IN GYNECIC PRACTICE.

The doctor was first brought to the use of boracic acid by the fact that iodoform in him always caused a very troublesome dermatitis. He found boracic acid valuable when the medication was required to remain longer in the vagina than it was possible for tampons to remain on account of the decomposition. He then described minutely his method of applying the remedy, which consisted of an injection, a drying of the vagina, the application of the boracic acid with alternating layers of cotton. He, in some cases, allowed this dressing to remain a week, and thought once a week often enough for these applications. He has had good results with boracic acid after plastic operations. In these cases he leaves a rope of borated cotton hanging from the os over the perineum.

He considered boracic acid a remedy of great value in sterility due to acrid secretion which destroys the fecundating power of the sperm. It is one of the best powders to render operative wounds in the genital tract aseptic. Boracic acid is suited to many gynecic uses where an antiseptic is required.

It can claim superiority over the vaginal tampon by reason of odorless, colorless, non-irritant chemical properties; these admitting of its frequent liberal and prolonged treatment.

THE PATHOLOGY OF ECTOPIC PREGNANCY AND PELVIC HÆMATOCELE.

The president's address was delivered by Dr. W. H. Wathen, of Louisville, Kentucky. He considered that the ovum was never impregnated in the uterine cavity, and thought that the conjugation of the male and female elements must take place before or just after the ovum enters the tube. Ectopic pregnancy is always primarily tubal, with possible exception of ovarian pregnancy. Abdominal pregnancy cannot occur except as a result of primary or secondary rupture, and if the villous or placental attachments are destroyed the ovum immediately dies, because it cannot form secondary attachments to other structures. If in rupture into the peritoneal cavity the ovum retains villous or placental attachments it may be possible under certain conditions for the pregnancy to continue, though not probable. If the amnion is ruptured in the early months the embryo or fœtus will die. So-called interstitial pregnancy does not always, though usually, rupture into the peritoneal cavity. If we define pelvic hæmatocele as an encysted or confined tumor formed of blood, then intra-peritoneal hæmatocele is not possible. Then followed an extensive argument upholding these propositions advanced concerning ectopic pregnancy.

The intimate relations existing between pelvic hæmatocele and ectopic pregnancy was his reason for considering these two subjects together in his address. Nearly every author who has written on this teaches that blood may accumulate in the peritoneal cavity and become rapidly encysted and fixed by the effusion of a layer of lymph exudations. The author did not adhere to this belief.

Dr. Wm. H. Taylor, of Cincinnati, read

THE REPORT OF A CASE OF ECTOPIC GESTATION SUCCESSFULLY TREATED BY GALVANISM.

The great practical importance of extra-uterine gestation and the prominence it now holds as a topic of discussion he thought justified his contribution. The diagnosis being difficult the first essential interest centres about this point. The doctor then gave a concise review of the latest published utterances on the subject of diagnosis and symptomatology. His case was then reported.

Dr. Georges Apostoli, of Paris, France, read a paper on

SALPINGO-OVARITIS.

(*To be continued.*)

THE MAINE MEDICAL ASSOCIATION.

THE THIRTY-SEVENTH ANNUAL MEETING, HELD AT PORTLAND, JUNE 11TH, 12TH, AND 13TH, 1889.

First Day — Tuesday, June 11th — Morning Session.

The association was called to order by the President, Prof. S. H. Weeks, M.D., of Portland, at 10 A.M., in the Common Council Chamber, City Building.

Prayer was offered by the Rev. Wm. H. Fenn.

The report of the treasurer, Dr. A. S. Thayer, of Portland, showed a balance on hand of $632.39, less by over three hundred dollars than that of last year, a decrease due to litigation over the Medical Registration Bill.

Dr. D. N. Skinner, of Auburn, read a paper on

GLAUCOMA,

urging the necessity of early diagnosis, so as to secure the benefit of prompt operative interference by iridectomy or sclerotomy; much stress was laid upon differential diagnosis, for the reason that remedies usually relied upon in treatment of diseases likely to be confounded with glaucoma were, if used in this affection, positively harmful. As between eserine and pilocarpine, the preference was given the former, the latter frequently causing ciliary spasm.

Dr. Jason Walker, of Minot, read a paper upon

EPIDEMIC JAUNDICE IN CHILDREN,

the cause being obscure and not traceable to sanitary defects or the ingestion of irritating substances. Curiously enough, each case developed after an interval of about two weeks from the appearance of the case preceding.

The question was raised whether catarrhal jaundice might not be of microbic origin; no explanation was suggested why in the epidemics cited by the author as occurring within his observation the disease was confined to children and youth.

Dr. A. G. Young, secretary of the Maine State Board of Health, read an interesting statistical paper upon

THE PREVAILING DISEASES OF THE YEAR.

First calling attention to the refusal of the last legislature to provide any means for an adequate collection of vital statistics, as requested by the State Board of Health, the speaker gave some facts with reference to frequency and relative prevalence of disease. Pulmonary tuberculosis headed the list, followed in order by diphtheria, scarlet fever, typhoid fever, and small-pox; measles and cerebrospinal meningitis were represented by a few cases. Small-pox occurred at Cumberland Mills primarily, secondarily at Brownfield and Deering, *presumably* from handling infected rags of domestic or English origin. Fourteen cases occurred, with two deaths; all but five of one hundred and six exposed in the rag room had been vaccinated. Of the five unprotected three were attacked by variola and furnished the two deaths.

This paper also noted the prevalence of jaundice in epidemic form in eleven towns, but not specially confined to children except as noted by the preceding speaker.

A resolution was offered by Dr. Young, and unanimously adopted by the association, offering its assistance to the census office in securing trustworthy vital statistics of this State for the next census.

Dr. J. O. Webster, of Augusta, also a member of the State Board of Health, read a paper on

THE SANITARY DUTY OF PHYSICIANS IN DISEASES OF THE COMMUNITY.

The speaker said the title of his paper meant "the duty of physicians in preventing the spread of disease through the community." Upon the insight, the experience, the good-will, and the sense of duty of the physician first called for the treatment of a given case of contagious disease principally depends whether the first case of such disease comes seasonably, late, or not at all to the knowledge of the sanitary authorities. Epidemics at the present day are largely due to disregard of the first principle of preventive medicine herein indicated.

Merely satisfying legal requirements by reporting such cases is of little avail or credit to him who does so, if measures are neglected looking to the discovery of the source, the etiological conditions, and the various preventive measures proper in each case.

Lack of intelligent co-operation on the part of the medical profession is almost fatal to the efficiency of a local health board.

Another element difficult to manage is the resistance opposed to sanitary placards and restrictive measures by business interests.

The problem to be successfully solved by sanitary authorities is how to secure the greatest possible prevention of commonly dangerous diseases of the people.

Afternoon Session.

The afternoon session opened at 3 o'clock with the introduction of Dr. P. H. Ingalls, of Hartford, Connecticut, and Dr. A. S. C. Millett, East Bridgewater, Massachusetts, as delegates from their respective State societies; followed by the president's address, delivered by Dr. S. H. Weeks, professor of surgery in the Medical School of Maine.

He reviewed the present law regulating the supply of material for the study of practical anatomy and showed it to be essentially prohibitory from its unreasonable requirements; he urged an attempt to secure its amendment by reducing the time of keeping bodies subject to the wishes of friends from three days to five days.

The decision of the Supreme Court adverse to the position of the association in relation to the late Registration Act was announced, and the association advised to formally undertake the preparation of a new bill for presentation to the next legislature.

The removal of the Medical School of Maine to Portland was insisted upon as necessary to its continued vitality and usefulness.

Dr. S. C. Gordon, of Portland, read a paper on

PREGNANCY AND OPERATIVE SURGERY: THEIR MUTUAL RELATIONS,

arguing that general surgical operations, and even those of a special nature, upon the uterus and appendages are permissible, provided hæmorrhage into the cavity of the uterus be prevented.

Operations remote from the pregnant uterus, however trivial, should be done under anæsthesia by ether. No operation should be made upon or near the uterus, unless imperatively demanded by the condition of the patient, until after confinement; but experience and accidental operations have demonstrated that operative interference may be safely made.

The speaker said that, while there was much less to fear now from minor operations than before antiseptic measures were inaugurated, there still remains the danger of septicæmia, which is always a powerful cause of abortion or premature labor.

Dr. Jas. A. Spalding, of Portland, read a paper upon

MERCURY CONSIDERED AS AN AGENT IN GENERAL THERAPEUTICS.

Evening Session.

Dr. I. T. Dana, of Portland, read a paper on

APOPLECTIFORM SEIZURES, DISCUSSING FOUR TYPES, THE EMBOLIC, THE HÆMORRHAGIC, THE CONGESTIVE, AND THE URÆMIC.

Apart from some interesting remarks by Dr. H. G. Beyer, U.S.N., upon cerebral localization, the discussion brought out nothing but conventional methods of observation and treatment.

Second Day — June 12th — Morning Session.

The association met at 10 o'clock. A telegram of congratulation was received from the Oregon State Medical Society, in session at Portland, Oregon, and was answered by a like message.

Dr. R. D. Birber, of Bath, reported a case of obscure disease of the brain, which post-mortem examination showed to have been extensive both in cortex and medulla, but attended by few definite symptoms.

Dr. G. A. Phillips, of Ellsworth, read a paper upon

CASES OF WILD-PARSNIP POISONING.

Botanically and in physiological action this plant resembles the water-hemlock. It is the *pastinaca sativa* of Gray.

The poison takes effect in direct ratio to the rapidity of the digestive powers in children, about two hours after the ingestion of the root. The symptoms are flushing of the face, mental dulness, followed soon by twitching of the extremities and severe convulsions, with coma, pupils widely dilated, respiration shallow, pulse weak, rapid, and thready, tongue dry and swollen. Treatment was by opium and prolonged etherization, after emetics and enemas.

Death occurs in cases not promptly relieved. Strong infusion of the root injected under the skin of a cat had no other effect than to widely dilate the pupil.

Dr. Phillips was requested by the association to continue his study of the plant and report at the next annual session.

Dr. E. T. Nealey, of Bangor, read a paper on

THE RELATION OF MICRO-ORGANISMS TO INJURIES AND SURGICAL DISEASES

He confined himself principally to the question, "Do bacteria, pathogenic or non-pathogenic, exist in the human healthy body?" and argued in the affirmative.

Dr. E. E. Holt, of Portland, read a paper on

TREATMENT OF ULCERATION OF THE CORNEA,

laying special stress upon the necessity of careful differential diagnosis, and its importance in determining the selection of proper remedies.

Dr. Abiel Libby, of Richmond, reported a case of puerperal convulsions relieved by venesection. The discussion showed that the general preference in treatment was for morphia and anæsthesia, placing little dependence upon chloral and bromides.

Second Day — Afternoon.

Officers were elected as follows: —

President, Dr. B. F. Sturgis, Auburn; first vice-president, Dr. A. L. Hersey, Oxford; second vice-president, Dr. R. D. Bibber, Bath; corresponding secretary, Dr. J. L. M. Willis, Elliot; the treasurer, Dr. A. S. Thayer, and permanent secretary, Dr. Chas. D. Smith, hold over, being elected for a term of years.

Dr. H. F. Twitchell, of Freeport, read a paper upon

PLEURITIC EFFUSIONS,

supplemented by another by Dr. J. A. Donovan, of Lewiston, on

DOUBLE TYPHOID PNEUMONIA FOLLOWED BY EMPYEMA.

Opinion embodied in the discussion seemed to be in favor of aspiration of effusions as soon as it was evident that absorption was not progressing. Dr. S. C. Gordon, of Portland, emphasized the advisability of evacuating purulent cavities through an opening secured by resection of a portion of one or more ribs, in preference to puncture through an intercostal space. He mentioned a modification of the usual method of closing abscess cavities, as devised by him, which consisted in dividing the chest wall at the junction of the ribs with their cartilages, allowing the chest to completely flatten.

Dr. E. H. Hill, of Lewiston, read a paper urging the establishment of a general hospital at Lewiston or Auburn, to meet the demand created by a large manufacturing population.

Dr. A. K. P. Meserve, of Portland, presented the necrologist's report, containing obituary notices of Dr. J. Q. A. Hawes, Hallowell; J. S. Cushing, Skowhegan; Galen J. Tribon, Steuben; Rufus K. Cushing, Bangor; Geo. H. Chadwick, Portland.

The evening session was devoted wholly to the

ANNUAL ORATION,

by Dr. F. E. Hitchcock, of Rockland, the subject being

EUTHANASIA.

He considered in detail natural anæsthesia, as exemplified by asphyxia, coma, syncope, and similar conditions; artificial anæsthesia by drugs; euthanasia in its relations to the death penalty; and the limitations of the physician's right to contribute to painless death.

Following the oration, the members, ladies, and invited guests were entertained at an elaborate reception given by the retiring president, Dr. Weeks, at his residence on Congress street.

Thursday, June 13th.

The closing session opened at 10 o'clock A.M. and was occupied with committee reports, appointment of standing committees, and listening to the final report of the board of censors. Dr. D. A. Robinson, of Bangor, was selected as orator for the session of 1890.

Delegates were appointed to the American Medical Association, the State medical societies of the New England States, New York, and New Brunswick, and visitors to the Medical School of Maine, the Portland School for Medical Instruction, and the Maine Insane Hospital.

Following the report of the special committee on the president's address,

Committees were appointed to secure an amendment to the existing law governing anatomical study, and to draft and present to the next legislature a new bill providing for medical registration.

The following resolutions were given a unanimous passage: Resolved: That the cause of medical education at the present day *demands* that medical schools shall offer facilities for clinical as well as didactic instruction.

Resolved: That the vitality and future prosperity of the Maine Medical School depends upon its removal to Portland, where the clinical instruction available at the hospitals and dispensary can be made a part of the education of its graduates.

The association then adjourned, to meet in Portland on the second Tuesday in June, 1890.

NEW YORK ACADEMY OF MEDICINE.

Meeting held June 20, 1889.

REPORT ON THE POLLUTION OF THE CROTON WATER-SHED.

Dr. John C. Peters, chairman of a committee consisting of Dr. A. Jacobi and S. Baruch in addition to himself, appointed at a previous meeting in regard to nuisances along the Croton water-shed, made his first report. Having referred to the recent thorough investigation of the pollutions and liabilities to pollution of the water-supply by the State Board of Health, he said that the next thing to do was to secure the removal of such sources of contamination and the protection of the water from contamination in the future. Having been informed that under the existing laws the responsibility of the matter lay with the Department of Public Works, the committee wrote to the commissioner. Mr. Gilroy, stating that the report of Sanitary Inspector Lucas of the New York city board of health, in 1884, showed that 1874 more or less preventable nuisances had been allowed to arise, and that the recent report of the State Board of Health showed that in 1888 these had increased to 2843. These consisted largely of out-door privies and in-door water-closets which emptied directly into the city's drinking water. of the sewage of whole villages and towns, and of large hotels and boarding-houses. and of the drainage from many barnyards, stables, pig-stys, and factories, and eighty-three cemeteries. As many new summer resorts were being developed on almost all the lakes and many of the streams going to make up the Croton river, and as thriving villages were arising almost everywhere along the three railroads traversing the region, it was to be supposed that these nuisances would increase still more rapidly in the near future. Concluding with the statement that previous departments of public works seem to have been entirely unconscious of their responsibilities and duties in these matters, the letter urged the commissioner to take prompt and decisive action in regard to them.

Mr. Gilroy replied that he would do all in his power to abate the nuisances, but that his department must act under the supervision of the State Board of Health; whereupon the committee wrote to Dr. Balch, secretary of the latter, who stated that Mr. Gilroy was mistaken, and that under the laws the Department of Public Works alone had the authority to remove the pollutions. Dr. Peters concluded his report by stating that all that the committee had therefore succeeded in accomplishing thus far was to find out just where the responsibility in the matter lay, and that their efforts in the future would be directed towards stirring up the Department of Public Works to do its duty.

— The students of the ambulance corps of the New Orleans Charity Hospital have made their appearance in uniforms. The outfit consists of a navy blue suit, square-cut sack coat with brass buttons, and a white cap.

— It is said that milk producers in New York State think they see a small measure of promised relief from the present depression of prices due to over-supply, in the development of the sugar-of-milk (*saccharum lactis*) manufacturing industry. Formerly consumers of the article in this country have depended entirely upon importations from Switzerland and Bavaria, and it is only lately, and in view of the increasing demand, that an attempt has been made to supply the market with a home-made product.

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THE MORTALITY IN THE CITY OF NEW YORK FOR 1888.

A PRELIMINARY report in relation to the mortality of the city for the year 1888 has just been presented to the board of health by Dr. Roger S. Tracy, the assistant sanitary superintendent, and the deductions made in it are somewhat remarkable. The sanitary police took a census of the tenement-house population during the year, which includes all the houses that are more or less constantly under the supervision of the board of health, but not the better class of apartment houses. The entire population included in this census was 1,093,701 persons, among whom there were 24,842 deaths, while the total number of deaths in the city was 40,175. The highest death-rate, 26.60 per thousand of the population, is in the district south of 14th street and west of Broadway; the next highest, 23.52, is in the district west of Fifth avenue and between 14th and 59th street, in which are situated a large proportion of the residences of the wealthiest citizens; and the third highest in the district east of Broadway and south of 14th street, the most densely populated part of the city, and containing almost exclusively a tenement-house population.

The general tenement death-rate was 22.71, while the general death-rate of the city in 1888 was 26.33, and this fact would seem to indicate that the population of the city has been under-estimated, and the quoted death-rate too high, or that all the deaths belonging in tenement-houses had not been credited to them, or else that the death-rate is actually lower for the tenement-house population than for the rest of the city; which would certainly seem most extraordinary. It might be that deaths that should have been credited to the tenement-houses have not been so credited; but of the total number of deaths in institutions, 7771, the former place of residence of the individuals was ascertained in 3444, and these deaths have all been credited to the houses in which they had lived. In all the districts the death-rate of persons five years of age and over as a rule decreases as the number of tenants increases, while the death-rate of children under five years of age increases up to a certain point, diminishing when there are more than eighty tenants to a house. The general death-rate is highest in houses containing from sixty to eighty tenants, and this is caused by the higher death-rate among the children, which reaches in these houses 114.04 per 1000 living.

The results of the investigation are summed up by Dr. Tracy as follows: The death-rate in tenement houses is less than the general death-rate of the city. The death-rate in the large tenement houses is less than in the smaller ones. While diarrhœal diseases and diphtheria show a greater death-rate in the larger houses, phthisis and pneumonia show comparatively little difference, that difference, however, being in favor of the larger houses. The greatest general death-rate among persons over five years of age, the next to the highest death-rate from diarrhœal diseases and pneumonia, and markedly the highest from phthisis, are in the district south of 14th street and west of Broadway. The excessive mortality in this part of the city is probably connected with the great number of old houses and the dampness of the soil. These results are much at variance with what was expected. It seems to be sufficiently established that people do not live under such extremely bad sanitary conditions in the tenements as they have been supposed to.

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THE AMERICAN MEDICAL ASSOCIATION'S ANNUAL MEETING.

None can more appreciate the interest of the medical meetings lately held in Newport than the country physician who looks back through a score or more of years in the dim vista of the past, to the time when he was a medical student, and realizes the immense progress which has been made in all departments of medicine and surgery, and the imperfect manner in which he has kept up with all this progress. In the various sections he saw, among the men who were to take part in the proceedings, physicians who are representatives of the profession of to-day, at whose feet he is content to sit in the humble attitude of a learner. His only difficulty was to know how best to improve the opportunity, for the programmes of all the sections were sufficiently tempting, and every one felt the embarrassment of choice where much was so good. If one chose to attend the Section on Surgery, one found no cause for regret. In fact, the programme under this head this year was remarkably good, and a wide range of subjects was discussed in a manner often singularly clear and thorough; the country physician who had his eyes and ears open could not have failed to learn more about spinal surgery and concussion, herniotomy, lithotomy and lithotrity, aseptic dressings, etc., than he could have acquired in months of desultory reading in his own office.

As is usually the case, special interest centred in the Surgical Section: speakers and auditors were enthusiastic; the discussions far exceeded the time allotted to them, and extra sessions in the evening had to be appointed to finish the work left undone in the afternoon. Valuable papers were crowded out. Members present on the evening of the 27th will not soon forget the papers on hernia, and the earnest discussion which followed: the meeting was prolonged to midnight.

The programme of the Section of the Practice of Medicine was also an uncommonly good one. Much might be said in commendation of the papers read: they were generally of an eminently practical character. Such speakers as Delafield, Osler, Pepper, Tyson, Whittaker, Edes, Vaughan, Davis, it is a great privilege to hear, even if for this purpose the country physician must travel from Texas or from Oregon.

In the Section of Obstetrics and Gynæcology fifty-five papers were announced. Of course many of these were read only by title. Leading specialists from all parts of the Union were present: several of the speakers were distinguished foreigners. If our medical Rip Van Winkle, after his long sleep of fifty years, had appeared on the scene, he would have listened with astonishment as he heard the laparotomies and hysterectomies and ovariotomies described as affairs of everyday gynæcological surgery.

The general practitioner who comes all the way from California or Washington Territory to attend these meetings will miss a great deal if he altogether skips the Section on Pædiatrics, as well as that on Dermatology and Syphilography. His first case of cholera infantum after his return home may die if he has failed to hear and profit by such a paper as that of Dr. Greenley, "On the Management of Infants during the first year," or the equally valuable paper of Dr. Brush, "On Cow's Milk for Infant Food." With regard to dermatology, the ordinary physician knows too little, and needs to be switched out of the common routine of arsenical medication and saline purgation by some such wide-awake, enthusiastic cutaneous specialists as were present at Newport. Members who listened to the address of Bulkley on the first day, entitled "Recent

Advances in the Treatment of Diseases of the Skin," were heard to speak of it in terms of great satisfaction.

Other sections, as that of State Medicine, Dietetics, Laryngology, and Otology, attracted their coteries of attentive listeners, and some very good papers were read in these sections. Country practitioners have found it highly desirable to know something about all these topics, and it were greatly to be wished that the meetings might be so arranged that, like the general sessions, only one thing would be going on at a time. Then members could step from practice to surgery, and from surgery to gynæcology, etc. But alas! such a scheme is probably impracticable for life is too short, and busy physicians cannot be induced to spend more than three or four days at a great medical meeting. Fortunately, the medical journals are able by their corps of reporters to give to their readers the best things that were said.

The addresses before the general sessions were as usual: Dr. Dawson, President, spoke of the physician of to-day, the physician of the future, medical journals, laboratory work, etc. The address on general medicine by Dr. William Pepper consisted principally of thoughts suggested by the life of Benjamin Rush. Dr. P. S. Connor gave the address on general surgery on the third day. It contrasted the surgery of the present with that of the past. Dr. W. H. Welch delivered a very admirable address in the Section on State Medicine.

In many respects the selection of Newport for the place of meeting was a felicitous one, and members found an agreeable diversion from the task of listening to so many papers in the beautiful scenery of the locality, and in the numerous excursions and other entertainments which had been provided for them. The air was cool and bracing, the weather fine. But few complaints were heard from visitors who had failed to obtain good accommodations. Some, it is true, were obliged to go to private houses to obtain lodging places. The places chosen for the general meetings and sectional meetings — Music Hall, Bellevue avenue, and adjoining rooms in the same building, and in the Newport Casino, were all that could have been desired.

The representation from the Western States was smaller than usual. Had there been a large attendance from that part of the country, in addition to those who did go, the need of more ample hotel accommodations would have made itself uncomfortably felt. The opinion was somewhat generally expressed that large centres of population and large centres of railway lines offer distinct and undeniable advantages for such meetings, — although, in the selection of Nashville for the next place of meeting, this opinion was not allowed great weight.

MEDICAL NOTES.

— We are assured by Americans living in Venice, Italy, that there would be an excellent opening there for a competent young American practitioner of medicine.

— Press despatches from Ottawa say: "A few weeks ago it was reported to the department of agriculture here, which is charged with the administration of health matters in Canada, that there were cases of leprosy prevalent in Cape Breton Island, N. S. Dr. Smith, medical attendant at the leprosy lazaretto at Tracadiz, N. B., was instructed to make a personal investigation into the matter.

This report, which has just reached the department, shows that there are three distinct cases of leprosy on the island, two women and one man. The disease has made terrible ravages on the latter, and Dr. Smith reports him to be a most repulsive looking object.

BOSTON AND NEW ENGLAND.

— A very pleasant complimentary dinner was given at Young's Hotel, Boston, on the 20th inst. at which some thirty members of the Cambridge Medical Society were present. The occasion was the celebration of the fiftieth year of continuous practice by Dr. W. W. Wellington, of Cambridge. Dr. J. L. Hildreth, president of the Cambridge Medical Society, conducted the after-dinner exercises, which were of an informal character. Dr. Wellington gave many reminiscences of his many years of practice, and he was followed by Drs. Morrill Wyman, A. C. Webber, and H. O. Marcy.

— At a meeting of the students of the Medical School of Maine, held in Brunswick, June 24, the following resolutions were formally adopted by the students: —

Whereas we, the students of the Medical School of Maine, unanimously believe that the benefits of the school are marred by the lack of clinical advantages, and for this reason many of the students are accustomed to leave the school at the end of the first or second year to finish their course in schools possessing greater clinical facilities; and

Whereas the city of Portland presents by far the best advantages of any locality in the State, both clinical and in other respects, —

Resolved, That we unanimously second the resolutions relative to the removal of the Maine Medical School adopted by the Maine Medical Association at their last session.

— Governor Ames has appointed the following members of the Metropolitan Drainage and Sewerage Commission: John Quincy Adams, of Quincy;

Asa French, of Braintree; and Hosea Kingman, of Bridgewater. All are members of the legal profession.

NEW YORK.

— At the last meeting of the New York Academy of Medicine, Dr. Walter Mendelson introduced a series of resolutions protesting against the appointment to the position of president of the board of health of an individual entirely without the sanitary knowledge requisite for a proper performance of the duties of the post, and urging the mayor of the city to reconsider his actions in the matter, and appoint some person properly qualified. On motion, the resolutions were referred to the council of the academy.

— The disinfecting corps of the New York city board of health made its first visit to Long Island City on June 25th, and many houses where there were or had been cases of diphtheria were disinfected. The mayor of Long Island City has also issued an appeal to the citizens to do all in their power to prevent the further spread of the disease.

— The board of health has called the attention of the Department of Public Works to obstructions in the sewer, and the bad drainage on the river front contiguous to Bellevue Hospital.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 22, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,571,558	760	392	26.65	12.61	18.46	.78	4.16
Philadelphia	1,040,245	400	197	21.75	20.25	20.25	4.25	2.00
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	454	286	30.80	8.14	22.00	.66	4.62
Baltimore	500,343	228	134	35.64	10.12	30.36	2.20	.88
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	158	55	20.79	15.12	6.33	1.28	8.19
New Orleans	250,000	—	—	—	—	—	—	—
Cincinnati	225,000	—	—	—	—	—	—	—
Washington	225,000	122	68	35.26	9.02	28.70	1.64	16.4
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	21	11	33.33	14.38	23.80	4.76	—
Charleston	60,145	38	19	23.67	10.52	23.67	—	—
Portland	40,000	4	0	—	25.00	—	—	—
Worcester	78,292	22	11	27.30	22.75	13.65	4.55	4.55
Lowell	71,518	41	19	26.84	12.19	24.39	2.44	—
Cambridge	65,552	27	11	25.00	14.80	3.70	3.70	14.80
Fall River	62,647	26	11	11.55	3.85	11.55	—	—
Lynn	53,334	9	—	—	22.22	—	—	—
Springfield	40,731	19	11	47.34	15.78	36.82	10.52	—
Lawrence	40,619	18	11	27.77	16.66	11.11	—	11.11
New Bedford	37,253	20	9	12.00	8.00	8.00	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	9	2	11.11	22.22	—	—	11.11
Salem	29,011	8	5	—	12.50	—	—	—
Brockton	28,813	7	2	—	14.28	—	—	—
Chelsea	28,167	—	—	—	—	—	—	—
Haverhill	26,058	6	1	16.66	33.33	—	—	—
Taunton	25,170	6	1	16.66	—	—	16.66	—
Gloucester	24,263	4	—	50.00	—	—	—	—
Newton	21,553	6	—	—	—	—	—	—
Malden	19,774	8	2	37.50	12.50	—	—	37.50
Fitchburg	17,534	8	2	—	12.50	—	—	—
Waltham	17,332	1	—	—	—	—	—	—
Newburyport	13,875	2	2	—	50.00	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	9	4	11.11	22.22	—	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2341; under five years of age 1266; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 659, consumption 277, acute lung diseases 168, diarrhœal diseases 439, diphtheria and croup 92, typhoid fever 40, scarlet fever 30, whooping-cough 20, measles 19, malarial fever 10, erysipelas 5. From scarlet fever, Philadelphia 10, New York 8, Brooklyn 7, Baltimore and Washington 2 each, Lawrence 1. From whooping-cough, Brooklyn and Boston 2 each, New York 4, Philadelphia and Washington 1 each, Gloucester 2. From measles, Philadelphia 6, New York 5, Boston 2, Baltimore, Washington, Nashville, Cambridge, New Bedford, and Haverhill 1 each. From malarial fever, New York 5, Philadelphia and Brooklyn 2 each, Baltimore 1. From erysipelas, New York and Philadelphia 2 each, Brooklyn 1. From cerebro-spinal meningitis, New York, Baltimore, and Worcester 1 each.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending June 8th, the death-rate was 17.7. Deaths reported 3244; infants under one year 769; acute diseases of the respiratory organs (London) 205, measles 152, whooping-cough 98, diphtheria 49, diarrhœa 67, scarlet fever 41, fever 23.

The death-rates ranged from 10.1 in Leicester to 36.1 in Preston; Birmingham 13.4; Halifax 27.0; Hull 22.1; Leeds 18.2, Liverpool 18.1; London 15.7; Manchester 30.2; Newcastle-on-Tyne 22.7; Sheffield 19.5; Sunderland 21.4.

In Edinburgh 15.1; Glasgow 23.5; Dublin 21.3.

The meteorological record for the week ending June 1, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, June 1, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean	8 A. M.	8 P. M.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	Duration Hours & Min.	Amount in inches.
May 26	30.06	49.0	50.0	44 0	96	77	78.0	N. E.	S.	20	7	C.	F.		.00
" 27	29.95	51.0	54.0	45.0	72	93	91.0	E.	S. E.	5	15	R.	R	8.40	.59
" 28	29.79	58.0	73.0	49.0	82	69	90.0	S. W.	S. W	12	7	R	O.	15.30	2 21
" 29	30.18	51 0	68 0	42 0	67	64	78.0	W.	S. W.		13	F.	O		.00
" 30	30.24	62 0	73.0	49 0	82	86	76.0	N.	N. W.	12		F.	O.	0 15	.04
" 31	30.20	73.0	80.0	61.0	64	83	62 0	W	N W.	14	12	C.	C		.00
June 1	30.09	72.0	77.0	58.0	78	81	70.0	N. W.	N. W.	24	16	C.	F.	1.25	.41
Means for the Week	30.07														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JUNE 22, 1889, TO JUNE 28, 1889.

By direction of the Secretary of War the extension of leave of absence on surgeon's certificate of disability granted Major William H. Forwood, Surgeon, in S. O. No. 118, May 22, 1889, from this office, is further extended four months on surgeon's certificate of disability. Par. 14, S. O. 142, A. G. O., Washington, June 20, 1889.

Corson, J. K., Major, Surgeon, U. S. Army, granted leave of absence for one month, with permission to apply for an extension of one month. Par. 2, S. O. 65, Headquarters Department of the Columbia.

By direction of the Secretary of War Major Ezra Woodruff, Surgeon, is relieved from temporary duty at Fort Monroe, Va., and will report in person to the Commanding Officer at Fort Hamilton, N. Y., for duty at that station. Par. 5, S. O. 146, A. G. O., June 25, 1889.

By direction of the Secretary of War the extension of leave of absence granted Captain Walter W. R. Fisher, Assistant Surgeon, in S. O. 41, June 12, 1889, Divis. of the Pacific, is still further extended fifteen days. Par. 8, S. O. 146, A. G. O., Washington, June 25, 1889.

Hoff, John Van R., Captain, Assistant Surgeon, U. S. Army, is relieved from duty at Fort Reno, Ind. Ter., and ordered to Fort Riley, Kansas. By par. 6, S. O. 145, Washington, D. C., June 21, 1889.

Bache, Dallas, Major, Surgeon, U. S. Army, is relieved from duty at Fort Riley, Kan., and ordered to report to Commanding General, Department of the Platte, for duty as Medical Director of that department. Par. 6, S. O. 145, A. G. O., Washington, D. C., June 21, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 29, 1889.

Siegfried, C. A., Surgeon, detached from the U. S. S. "Quinnebaug" and wait orders.

Curtis, L. W., Passed Assistant Surgeon, detached from the U. S. S. "Quinnebaug" and wait orders.

Smith, George T., Assistant Surgeon, ordered to the Army and Navy Hospital, Hot Springs, Ark.

APPOINTMENT.

Dr. Henry C. Coe has been appointed Professor of Gynecology at the New York Polyclinic, to fill the vacancy caused by the death of Dr. James B. Hunter.

SOCIETY NOTICE.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Preliminary Announcement. The seventeenth annual meeting of the American Public Health Association will be held at Brooklyn, N. Y., October 22, 23, 24, 25, 1889.

The Executive Committee have selected the following topics for consideration at said meeting: I. The causes and prevention of infant mortality. II. Railway Sanitation: (*a*) Heating and ventilation of railway passenger coaches; (*b*) water-supply, water-closets, etc.; (*c*) carrying passengers infected with communicable diseases. III. Steamship sanitation. IV. Methods of scientific cooking. V. Yellow fever. (*a*) The unprotected avenues through which yellow fever is liable to be brought into the United States; (*b*) the sanitary requirements necessary to render a city or town proof against an epidemic of yellow fever; (*c*) the course to be taken by local health authorities upon the outbreak of yellow fever. VI. The prevention and restriction of tuberculosis in man. VII. Methods of prevention of diphtheria, with results of such methods. VIII. How far should health authorities be permitted to apply known preventive measures for the control of diphtheria. IX. Compulsory vaccination. X. Sanitation of asylums, prisons, jails, and other eleemosynary institutions.

Papers upon miscellaneous sanitary subjects not included in the above list will be received by the Executive Committee, subject to the requirements of the By-Laws. Preference will be given, however, to papers upon the subjects selected by the committee in making up the daily programme of the meeting.

Irving A. Watson, *Secretary*.

Concord, N. H., May 20, 1889.

BOOKS AND PAMPHLETS RECEIVED.

Forty-first Annual Report of the Trustees of the Massachusetts School for the Feeble-Minded at South Boston, for the Year ending September 30, 1888. Boston. 1889.

The Radical Cure of Hernia. By Thomas W. Kay, M.D., Scranton, Pa. Reprint. 1888.

Proceedings of the Association of Medical Officers of American Institutions for Idiotic and Feeble-Minded Persons. Sessions Lakeville, June 15-18, 1887; Orillia, June 19-22, 1888. Philadelphia. 1889.

Catalogue of the Albany Medical College, Medical Department of Union University. Fifty-eighth Session, 1888-89, and Announcement for Session 1889-90. Albany, N. Y. 1889.

Remarks on the Unpleasant Effects of Sulphonal. By J. P. Crozer Griffith, M.D., Instructor in Clinical Medicine in the University of Pennsylvania, Physician to St. Agnes Hospital. Read before the College of Physicians, Philadelphia, May 1, 1889. Reprint. Detroit, Mich. 1889.

Uterine Massage. By W. B. Sprague, M.D., Detroit. Reprint.

Woman's Medical College of the New York Infirmary. Twenty-first Annual Catalogue and Announcement, June, 1889. New York. 1889.

Fifty-ninth Annual Report of the Inspectors of the State Penitentiary for the Eastern District of Pennsylvania for the year 1888. Philadelphia.

Annual Report of the School Committee of the Town of Tisbury, Mass., for the Year ending March 31, 1889.

Constitution and By-Laws of the New Mexico Medical Society with History. Las Vegas, New Mexico. 1889.

Original Articles.

CASE OF POISONING BY WATER GAS, WITH NEW METHOD OF TREATMENT; RECOVERY.

BY D. A. CLEAVELAND, M.D., MIDDLETOWN, CONN.

The subject of the use of water gas as an illuminating agent has been attracting much notice for several years past, and within the past six years the interest in the subject has greatly increased, owing to the persistent efforts which have been made by interested parties to introduce plants for its manufacture in those States whose citizens have been protected from its direful effects by statute laws.

This has been notably the case in Massachusetts, the only State, with one exception, in the country whose policy it has been to protect its citizens from dangerous adulterations of most of the articles in daily use, and which are among the necessaries of life.

Consonant with this policy, as is perhaps well known to most of your readers, a law was enacted by the Massachusetts legislature in 1880, prohibiting the sale of illuminating gas containing more than 10 per cent. of carbonic oxide.

Probably to this statute law, and the discussion growing out of an attempt to secure its repeal, we are largely indebted for the valuable investigations which have been prosecuted in relation to the poisonous nature of water gas.

For, under the stimulus of a threatening evil, with characteristic energy and thoroughness, commissioners were appointed in Massachusetts, who, acting in unison with the State Board of Health, deduced from scientific observation and actual experiments upon living animals facts which have clearly proved the dangerous nature of the gas, and largely enriched the literature of this subject.

It has been left to the citizens of those States unprotected by any legal provision against the sale of this dangerous compound to learn by experience the fatal effects following its use, either by the careless and forgetful or those bent upon suicide.

During the past six years, while acting in the capacity of medical examiner for this city, I have been called in a number of instances, both antemortem and post-mortem, to persons who were poisoned by the inhalation of water gas.

The symptoms presented by persons affected by the inhalation of this gas do not differ widely from those seen in persons who are deeply unconscious from the effects of other lethal poisons, except that the coma is more persistent and profound, and continues for several hours, with no marked change until near the end of life; then a sudden change in the respiration, a rapid failure of the heart's action, then a few forcible respiratory movements and the breathing suddenly ceases and the patient is dead. A brief inquiry in relation to the nature of water gas is perhaps proper, even though it weary some in the profession who are already familiar with the subject, as it will lead to a better understanding of its peculiar toxic influence.

It would not be in accord with my purpose, which is to make this article as brief as possible consistent with the importance of the subject, that I should enter into a discussion of the nature of all the chemical elements of which this gas is composed. Neither is it necessary, as the whole subject has been ably treated by several learned gentlemen, and its literature is full and comprehensive.

I shall therefore confine myself to the especial toxic element, carbonic oxide.

As long ago as 1875 the mayor of Boston appointed Charles F. Choate, Esq., and John T. Osgood, Esq., of Boston, and Prof. Edward S. Wood, of Cambridge, commissioners to inquire into the subject of gas manufacture.

In their report made the following year, speaking of water gas they say: "In reference to the poisonous nature of this gas, the constituent carbonic oxide is one of the most active poisons, producing when inhaled speedy death. . . . It forms a compound with the red coloring matter of the blood, which is more stable than that formed by carbonic anhydride, and it cannot be readily decomposed by oxygen."

In 1885 Dr. Samuel W. Abbott, secretary of the Massachusetts Board of Health, in his report for that year, shows that Bernard and Hoppe-Seyler demonstrate that "carbonic oxide displaces the oxygen from the blood, and enters into combination with the red coloring matter in such a manner as to render it incapable of absorbing more oxygen."

Profs William M. Sedgwick and William Ripley Nichols, of the Massachusetts Institute of Technology, made a careful study of the relative poisonous effects of coal and water gas, under the direction of the Massachusetts Board of Health in 1885, and verified the statements contained in their report by actual experiments upon living animals, both in this city and at Athol, Mass.

I will quote a single paragraph from that report. Speaking of carbonic oxide they say: "It exerts, for example, a direct action upon the living blood-cells of the animal body, depriving them of the power of performing their normal functions, and if present in sufficient quantity speedily undermines the functions of the whole body.

Dr. E. A. Down, one of the assistant physicians to the Connecticut Hospital for the Insane, contributed a paper to the Connecticut Medical Society, which will appear in the Transactions of the society for the present year, in which, besides referring to the case which is herein reported, he gives an able exposé of the whole subject relating to the toxicology and general characteristics of water gas.

An analysis of the two gases most used for illuminating purposes shows that coal gas contains 5.53 and water gas 27.46 per cent. of carbonic oxide.

This is the average obtained from several analyses of gases from different localities. The gas supplied to this city averages 30.33 of carbonic oxide.

This carbonic oxide is the especial toxic element with which we have to do when called to a case of poisoning by either coal or water gas; but as coal gas contains less than 6 per cent. of carbonic oxide we ordinarily find but little difficulty in resuscitating persons under its influence, providing they still breathe. For the changes in the red corpuscles of the blood are so slight, that a free inhalation of oxygen, with the employment of heart stimulants, will generally restore the patients.

This is not the case, however, with those deeply affected with the inhalation of water gas, as will presently be shown.

Considering, then, the deadly nature of water gas, and the perils attending its use, either as an illuminating agent or for fuel purposes, and in view of the fact that all the methods hitherto employed to resuscitate persons who have become deeply affected by its inhalation have been, so far as I have been able to learn, entirely unavailing, all the patients having died, it has occurred to me that the presentation of the following typical case may not be without interest and perhaps profit to the medical profession, especially in those localities where water gas is in use.

At 12.30 P.M., on the 27th of last March, I received the following telephone message from Dr. Olmstead, superintendent of the Connecticut Hospital for the Insane, located about a mile out of the city: —

"We have two cases of poisoning by water gas. One we think will recover, but the other is considered moribund. As you are interested in such cases, and will have to see the patient post-mortem, perhaps you would like to see her ante-mortem."

I hurriedly responded to the courteous invitation, and on my arrival at the hospital learned that Mary Fleming and Mary Doughty, two laundry women in the hospital, were discovered at 7 A.M., six hours previously, unconscious from having inhaled water gas that escaped into their room while they were probably asleep.

The Doughty woman was lying near a partially opened window and in a direct line between the window and a ventilator in the door which opened into the corridor. She was not so deeply affected as the other woman, and slowly regained consciousness.

The Fleming woman, who was found lying upon her bed in a corner of the room remote from the windows, was the one referred to as being moribund.

There were in attendance upon this woman Drs. Noble, Fisher, and Down, all of whom had worked diligently in their endeavors to save her life, from the time she was discovered until I arrived, a period of about six hours.

Artificial respiration had been kept up almost continuously, with the patient constantly exposed to a current of fresh air. Besides this there had been about twenty feet of pure oxygen administered by inhalation.

Hypodermics of ammonia, atropine, and other heart stimulants had been freely employed, and all this without the least appreciable effect.

The patient was in a profound coma. The countenance livid, the extremities cold, and in fact but little if any warmth of any part of the body that was exposed. The coma was completely anæsthetic, and there was an entire suspension of all sensory functions. The pulse would beat eight or ten times with a fair fullness and then run down to a mere flutter, and for a moment be entirely lost at the wrist. Then again there would be a few quite forcible beats, followed by the rapid diminution and entire suspension.

The respiration corresponded in character, if not in rhythm, with the pulse, there being a few forcible respiratory movements, succeeded by a rapid diminution in their depth until they would cease altogether. Then a sudden forcible inspiration would follow, to be succeeded by the rapid decline and suspension.

There were facial spasms of the right side and large dilatation of the right pupil.

Mucus was collecting in the trachea, giving rise to what is known as the death-rattle.

Hurriedly taking in the situation, and with a brief consultation with the physicians present, who agreed with me that if any further measures were to be tried there was no time to be lost, and in consonance with views expressed at a consultation with these physicians over a previous case, I proposed that I be permitted to transfuse her at once, which proposition met with ready approval.

There being no transfusion instruments at hand, and as time was precious, I called for a clean Davidson's syringe, an aspirator needle, a file, a whetstone, some warm fresh milk, all of which were promptly furnished. Cutting off the point of the needle and smoothing the end with the whetstone, and having the needle attached to the nozzle end of the syringe, the necessary apparatus was complete. Then applying a bandage above the right elbow I opened the median cephalic vein and drew about ten ounces of blood.

As the vein was opened there was a spurt of blood that flew two or three feet, then dwindled down to a mere dripping. Then it would well up again for a moment and then recede to a mere dripping, thus corresponding with the force of the pulse.

The blood was allowed to flow until the weakness in the heart-beat gave warning that the limit of safety had been reached. The bandage was then removed and placed below the elbow to prevent any further flow of blood.

Then pressing the little and ring fingers of the left hand above the orifice in the vein to prevent the entrance of air, leaving the other fingers and thumb to assist in the introduction of the needle, the needle was introduced about three-fourths of an inch, and about ten ounces of milk very slowly injected into the vein.

The needle was then withdrawn and a bandage applied to the arm.

The first indication of returning sensibility was noticed when the needle was pushed a little too high in the vein when nearly through with the injection, and its end impinged against the coats of the vein at the point of union of the cephalic and median cephalic. This sensibility was manifested by a motion, as if caused by a twinge of pain.

Two hours after the operation there was a marked improvement in the appearance of the patient, and four and a half hours after the operation she swallowed and retained stimulants, which she had not done before since she was discovered at 7 A.M., twelve hours previously.

There was on the day following quite a marked redness in the track of the vein above which the opening was made, but it soon subsided on the application of warm lead and opium wash. Excepting this and a very small abscess near the point of incision, which Dr. Down opened as soon as it was in suitable condition, and which did not gather again, there was no further trouble with the arm.

There was also a large and troublesome abscess formed at the angle of the jaw, which was evidently caused by the cold wind blowing on that point for a period of six or seven hours, but under the judicious management of Dr. Down, with the advice of Drs. Noble and Fisher, there were no unfavorable results from it. Twenty-five days after the operation she was able to sit up, and continued to improve until she perfectly recovered, and has remained well up to the present time.

I have entered more fully into the minute detail of this operation than would be warranted in the description of an operation of more common occurrence. I have done it, however, not to enlighten the experienced practitioner, who may have performed it several times, but for the benefit of any practitioner who may, for the first time, be called to a case when hurried transfusion may be deemed advisable.

The literature of transfusion is very incomplete in many of the text-books, and there is a paucity of detail in regard to it. And in some of the books the directions are confusing, having evidently been written by persons who have never operated nor seen it done.

I trust, however, that any practitioner may learn from the description here given how, by the observance of a few simple rules, the operation can be easily and safely done. And upon an observance of these rules may depend the facility and rapidity with which it can be done; and cases requiring transfusion are generally those demanding prompt and speedy action.

For convenience I will condense a few important points into one or two short paragraphs: If the operator be right-handed let him select the right arm of the patient, and take his position upon the outside. His position will enable him to use the left hand for controlling and compressing the vein, and the right for bleeding and introducing the needle.

Select the median cephalic vein, as it lies nearest the operator and its direction is favorable for introducing the needle without the end impinging against the coats of the vein. After bleeding, compress the vein above the opening with the little and ring fingers of the left hand, and carefully introduce the needle.

Before releasing the pressure above the orifice, press the ball of the left fore-finger flatly over the needle at the point of entrance to prevent the entrance of air. Inject the liquid very slowly, to avoid the fatal complication of paralysis of an already enfeebled heart from too sudden venous plethora.

The above directions, of course, do not apply to immediate or vein to vein transfusion.

The description of the instruments used on this occasion is given to show that in extreme emergencies we can sometimes improvise instruments that will do as good service with as favorable results as could be obtained with all the surgical appliances of an elaborately furnished hospital.

The rationale of the anomalous method of treatment employed in this case can be stated in few words: —

By the presence of carbonic oxide in the blood the integrity of the red corpuscles was destroyed, and they could no longer absorb oxygen, consequently artificial respiration, and even the inhalation of pure oxygen, were of no benefit.

These facts well established, it seemed desirable to first reduce the amount of carbonic oxide in the blood, and, second, dilute the remaining portion and at the same time maintain a suitable degree of venous tension. The first object was obtained by bleeding, and the second by transfusion of a suitable liquid.

As there was no time to lose in drawing blood from a bystander, and going through the process of defibrinating it, and the instruments at hand were not suitable for vein to vein transfusion, the only choice was milk. And were I to perform the operation again, I should use milk in preference to other liquids, as it contains many elements of blood, is about the same density, and is always readily obtained.

TWO CASES OF BENIGN PAPILLOMATOUS BLADDER GROWTHS,

SUCCESSFULLY REMOVED BY THE PERINEAL ROUTE.[1]

BY FRANCIS S. WATSON, M.D.

Apart from the value that individual operations in this class of cases afford in the still comparatively early period of their surgical history, in contributing to the sum of our experience in the matter, these two cases present some points of clinical interest which have seemed to me noteworthy.

Case I. is that of a gentleman aged thirty-eight, who consulted me in April, 1888, for the symptom of hæmaturia, which he had had for three years previously. It was of the type usually associated with intra-vesical growths, and the diagnosis was at once made positive by the microscopic examination of the urine, which contained bits of a papillomatous tumor. April 23rd, 1888, I removed by the perineal route a large, thickly pedunculated, papillomatous growth by a pair of strong forceps, afterward scraping the site it had occupied with a curette. The patient went home on the sixteenth day, the wound healed and the urine free entirely from blood. In the following year he gained about thirty pounds in weight, and had no urinary symptoms whatever, until April 23rd, 1889, exactly one year from the date of the operation. He then had a profuse hæmorrhage from the bladder, and continued to bleed more or less until after the second operation, May 15th, 1889.

On that date the deep urethra was again opened as before. The outer sphincter of the bladder, formed by the compressor urethræ muscle, was apparently as intact as though it had never been subjected to the violence that was done on the first occasion. The site of the original growth, which was just above the right lobe of the prostate, was wholly free from any recurrence.

Just behind the symphysis pubis, on the anterior surface of the bladder, was a sessile papilloma, occupying an area about as large over as a silver quarter of a dollar. Above this, toward the fundus, were three small growths, with long pedicles. One of these and the sessile growth were removed by a curette. The other two pedunculated bodies were taken away with a wire snare, and their bases curetted.

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[1] Reported at the annual meeting of the Association of American Genito-urinary Surgeons, Newport, May 22, 1889.

Recovery from this second operation was also rapid. A large drainage-tube was retained in the bladder, through the perineal wound, for twenty-four hours, then removed. Hæmorrhage was free for the first day, then diminished, and ceased wholly on the third day. The perineal wound closed on the tenth day, and the patient was also up and about on the same day, and went home on the thirteenth day, the urine clear. There was scarcely any pain following the operation, and but very slight bladder irritability during the first few days of convalescence. The temperature rose to 100° F. on the evening of the day of the operation and was thereafter normal.

The points which interested me in the case are: 1. The thorough restoration of the urinary sphincters after the first perineal operation. 2. The absence of recurrence of the disease in its original site; and this especially in view of the fact that the destruction of its attachment to the bladder by the curette had not been extensive at the time of the first operation, which shows that the bladder bases of benign tumors do not require such radical destruction always, to prevent recurrence, as has been supposed by some surgeons. Lastly, this case gave an opportunity to estimate in a single instance the rate of growth that may take place in such papillomata, and how extensive it may be before hæmorrhage is noticed, for it is certain that at the completion of the original operation the bladder was free from any growth sufficiently developed to be felt by the finger.

Case 2. A young man of twenty-one years of age. Partial and persisting incontinence of urine from birth. Six years ago, at a single urination only, the urine contained a large quantity of blood. This was never noticed again until April of this year, when hæmaturia again occurred and continued in every urination until the day of operation, May 18th, in greater or less quantities. For two weeks the urine was examined daily: no characteristic bits of a new growth were discovered. The sediment, besides the blood, always contained numbers of polymorphous epithelial cells of great variety, having large nuclei, and bodies which resembled so closely hyaline casts of the renal tubules as to be very difficult to distinguish from them. The physical examination was wholly negative, and there was no other indication of renal disease.

On May 18th Nitze's cystoscope was introduced into the bladder, and through it I thought that three delicate villi of a bladder growth could be seen, but before obtaining a good view of them the electric lamp burned out. Digital exploration of the bladder through the perineum was then undertaken. The sphincter vesicæ was scarcely detectable, and the finger entered the bladder in consequence with unusual readiness. The bladder surface was unusually smooth, and its muscular tissue unusually thin. No growth was felt after careful search. A curette was then passed over the bladder surface, and encountered resistance on its posterior face. On removing the instrument a bit of a papillomatous growth was seen upon its edge; guided by this knowledge the finger then felt a soft, delicate sessile growth, covering an area about the size of a silver half-dollar between and above the ureteral orifices. This surface was freely curetted.

Bleeding was slight. A drainage-tube was retained in the bladder through the perineal wound for twenty-four hours, then removed. All bleeding ceased at the end of the second day following the operation; on the fourth day the patient had a chill and rise of temperature to 102° F., after which convalescence has progressed uninterruptedly thus far, though the urine contains a considerable quantity of pus still. The perineal wound closed on the fifteenth day.

In this second case I wish to call attention to — 1. The failure of development in the sphincter vesicæ muscle, and the dependence upon this condition of the patient's enuresis, and also the accompanying lack of muscular development in the bladder wall itself and the thin, smooth mucous membrane of the bladder associated with it. 2. The doubt as to diagnosis which arose from the failure to find characteristic bits of a bladder growth in the microscopic examinations of the urine, but especially from the presence of the hyaline bodies that so closely resembled casts of the renal tubules. To be sure I did not find a single example in which these bodies had two well-defined, rounded ends; but then, it sometimes happens that hyaline casts are broken in such a way as not to show perfect forms. Dr. W. W. Gannett, who reported growth to be a very delicate papilloma, thought it probable that the hyaline forms were portions of the blood-vessel stems of some of the finer papillæ forming the growth, which had undergone hyaline degeneration, and in the entire absence of all evidence of renal disease and the disappearance of these bodies from the urine after the operation, this seems the most natural explanation. I have dwelt somewhat at length upon this detail of the case for the sake of explaining a possible source of confusion in the diagnosis.

A very natural question may occur here. Why delay to make the diagnosis by the microscope when we have so rapid and satisfactory a means of diagnosis in the electric cystoscope of Nitze? In reply to which I would say that I always try to make the diagnosis of a bladder growth at first without the cystoscope, for the reason that, so far as I have observed, the introduction of this or any instrument into such bladders is peculiarly liable to excite cystitis, which is adverse to favorable result. (Therefore, also, I do not follow the advice sometimes given to wash out the bladder or to try to detach bits of the growth by instrumental manipulation for diagnostic purposes.) It seems better to reserve cystoscopic examination until just before operation, in order to demonstrate the presence or absence of a growth in a doubtful case, or to determine its site, size, etc., in one in which its existence has already been established, as a guide to the choice of operation, being always prepared to enter the bladder either from above or below according to circumstances. Used in this way, the cystoscope is, I believe, capable of giving valuable information. But it should also be borne in mind that it may mislead, as I have known it to do now in two examples and in the hands of surgeons thoroughly conversant with its use. In one instance a prostatic hypertrophy was taken for a villous tumor; in another a tumor was said to exist, but could not be discovered when sought by operation.

It is unusual, moreover, to have to wait long before finding in the urine of these cases unquestionable proofs of the tumor's existence if it be present.

Supplementary note, three weeks after operation.

Since writing the above report another interesting observation has been made in this case, namely, the discovery that the bladder contains *eight ounces* of residual urine, due to the congenitally defective muscular development of the organ, and present in spite of the patent condition of the vesical orifice that is caused by the lack of development of the sphincter vesicæ muscle. This failure of the bladder to empty itself becomes now an important factor in the case, from the fact of the large quantity of pus which the urine contains, and which the bladder cannot rid itself of by natural efforts; and more especially is this important because of a very great sensitiveness of the anterior urethra, which makes it almost impossible to wash out the bladder through instruments passed through the urethra after closure of the perineal wound.

FOUR CASES OF PHTHISIS TREATED BY INHALATIONS OF HOT AIR.

BY GEORGE G. SEARS, M.D.

Since Koch's discovery of the tubercle bacillus the history of what is new in the treatment of phthisis has been largely that of the rise and fall of various methods for the disinfection of the respiratory tract. Each new method proposed for accomplishing this end has promised brilliant results in the hands of its originators, unfortunately unconfirmed by a fuller experience. This constant succession of disappointments may have had much to do with the indifference at first shown by the profession toward the treatment by inhalations of hot air which has been recommended within the past year by Halter, Weigert, and Krull, though without doubt it has been further handicapped by the questionable proceeding of Weigert in patenting his apparatus and in publishing a popular treatise on "Consumption and its Cure," savoring somewhat of quackery. Recently, however, more attention has been turned to it, and it is with the endeavor to form a basis for the intelligent estimation of its value that the following cases are reported. The number was necessarily small, owing to the length of time required for carrying out its details. All the patients were inmates of the House of the Good Samaritan, in the services of Drs. F. C. Shattuck and C. M. Jones, to whom I am indebted for their kindness in placing them at my disposal and for many valuable suggestions. They had been kept under observation from two weeks to three months, that the general tendency of the disease might become known and the improvement which so frequently follows admission to a hospital from better diet and general hygienic conditions might not be falsely ascribed to the method of treatment.

At the time these observations were begun Weigert's apparatus was not yet on the market nor even patented, and the descriptions which had appeared in the medical journals seemed so complicated that the following simple apparatus, suggested by Mr. G. L. Kingsley, of the Harvard Medical School, was devised. It consisted of a cone-shaped spiral of copper tubing, the base being about six inches in diameter. The lower end extended outward far enough to obtain a supply of air uncontaminated by the gas stove which furnished the heat, while the upper end projected at right angles to the axis of the cone, and was fitted with a mouthpiece. A second piece of tubing was inserted into this to hold the thermometer, and the cone itself was covered with a sheet-iron shield. A somewhat rude but efficient mouth-piece was made from a piece of asbestos-board covered by rubber tubing. The temperature of the inspired air, at first 160° C., was soon raised to 200°, and even to 220°, while the length of the sittings was gradually increased from a half-hour morning and evening to one hour. Beyond this limit it was rarely possible to go, owing to the exhaustion of the patients, who were encouraged to take as long and deep breaths as possible. Except the salivation and soreness of the mouth noted in Case I. the only disagreeable effect complained of was double vision, which lasted but for a short time after each sitting, and was present only for the first few days. The routine hospital treatment was continued in each case, and consisted in the administration of tonics, creasote, and a full diet.

Case I. Woman, thirty-eight years old. Beginning phthisis, scanty expectoration containing a few bacilli. Jan. 17th, 1889. Treatment began, inhalations of a half-hour in duration being given twice daily with a temperature of 160° C. They excited an almost constant short, hacking cough and a profuse flow of saliva.

Jan. 22nd. Inhalations have been increased to forty-five minutes A.M., and forty minutes P.M., while the temperature has been raised to 210° C. Salivation is so profuse while she is at the apparatus as to seriously interfere with its use. She complains that her mouth is very sore.

Jan. 23rd. Mouth so sore that inhalations had to be omitted. During the week she has lost three pounds in weight, and the temperature, which had previously kept within normal limits, varied but little either morning or afternoon from 100° F. A day or two later it again dropped to normal.

Case II. Woman, æt. twenty-three, without hereditary taint. Advanced phthisis, with signs of a cavity in left apex, and slight crackle in the right above and below the clavicle and in the supraspinous fossa. Cough slight, most troublesome at night, with scanty expectoration containing a few bacilli. Has never been confined to bed and has never had hæmoptysis. Was placed under treatment Jan. 17.

Jan. 24th. She reported herself as feeling much encouraged; there had been no cough for several nights, her dyspnœa had decreased so that she could now go up stairs without special discomfort. Sleep and appetite were improved.

Mar. 1st. There is still less dyspnœa and her appetite remains fair, but the improvement in cough was but temporary.

Mar. 17th. Is in bed. Cough has increased and the expectoration contains considerable blood, from half an ounce to an ounce in the twenty-four hours. During the following week the hæmoptysis continued, the inhalations being omitted. On attempting to resume them the effort proved so exhausting that after a few days they were discontinued. The patient's general condition was then less satisfactory than before treatment was begun, and the physical signs showed an extension of the process on the right side, the respiration being bronchial as low as the third rib, while an explosion of fine râles occurred after cough over the upper half of the chest in front.

Case III. Woman, æt. twenty-two, with negative family history. Advanced phthisis involving nearly the whole of the left lung, with signs of an incipient process at the left apex. Cough not very troublesome, expectoration moderate in amount, containing numerous bacilli, slight sweating at night, considerable dyspnœa on exertion. No hæmoptysis.

Jan. 23rd. Inhalations begun. Mar. 9th. Steady improvement during the past six weeks. Dyspnœa is less, and cough and expectoration have decreased. She has gained four pounds in weight, and her strength and color have both improved. The pulmonary signs, however, have remained practically unchanged.

Mar. 29th. Has lost two pounds during the past two weeks and cough and expectoration have slightly increased, but she reports herself as feeling better and says she can now go up stairs without trouble. Inhalations omitted.

April 3rd. Death from hæmorrhage.

Case IV. Woman, æt. twenty-two, with tubercular family history. Well-marked signs of phthisical process in right lung, slight cough, with but little expectoration, containing a few bacilli. No hæmoptysis. Sits up all day.

Mar. 1st. Treatment begun. Mar. 26th. Considerable blood in expectoration during the past few days, during which the inhalations were omitted. April 15th. Has become so thoroughly alarmed by the death of the other patient, which she attributes to the hot air, that it was no longer possible to continue. During these six weeks her general condition has remained about the same. There was neither increase nor loss in weight, and beyond a slight gain in her ability to sleep there was no improvement to record, while the cough and expectoration had both increased.

To briefly summarize the results obtained: In one case the inhalations were omitted after a week, owing to salivation and soreness of the mouth, with a loss to the patient of three pounds in weight. This loss simply emphasized the general tenor of the case, as it was afterwards partly regained and was fairly attributable to mental disturbance, as she expressed great anxiety at the possible effects of such unusual therapeutics.

In one case (II.) temporary improvement was quite marked, but at the time the treatment was discontinued there had been a further advance of the disease, and for the first time in the history of her illness hæmoptysis occurred.

In one case (III.) there was fairly steady improvement in the general condition of the patient, but without a corresponding improvement in the physical signs. She had, however, already begun to improve during the two weeks she was under observation, before the inhalations were begun, and a part at least of the gain must be attributed to hospital care. Five days after they were omitted death resulted from hæmorrhage.

In one case (IV.) the condition of the patient remained unchanged, but during this period blood was present in the sputum for the first time.

Excepting Case I., where a rise in temperature level of a degree and a half occurred, no permanent change was noticed in its course. The other three cases had previously shown an afternoon rise to 100° or 101°, and this continued unabated. The immediate effect was an elevation of from 1° to 3° F., which always subsides in the course of an hour or two. No special alteration was noted in either pulse or respirations. The increase in expectoration which is said to occur during the first few days seemed in these cases to be due, in part at least, to the stimulation of the salivary glands. Considering the relative frequency of hæmoptysis in phthisis, it is an open question how far one is justified in attributing its regular occurrence in these cases to the form of treatment. It is impossible that air should reach the lungs with a temperature even approaching 200° C., as a part of the heat is lost by radiation between the thermometer and the lips, and much more in the mouth and upper air-passages from the absorption of moisture, still it must retain a considerable portion on reaching the pulmonary alveoli, as Weigert has found that the temperature of the expired air is 113° F., while according to Kohlschütter it may considerably exceed this (140° C.). In other words, a hot poultice has been applied to the lungs, an active hyperæmia induced, and with it increased danger of the giving way of the wall of some vessel weakened by ulceration or aneurismal dilatation. This danger would, moreover, be still further increased by the rarefaction of the air inspired, which, at 50° C., has been calculated by Halter to be of the same density as at a mountain elevation of 1530 metres, while the patient himself remains exposed to the ordinary atmospheric pressure. The sputum was examined on several occasions for bacilli by Dr. E. M. Greene, in the hope of detecting a constant diminution in their number, but the result in every instance was negative, with the possible exception of Case III.; but as they had never been numerous the slight diminution in this instance may have been simply accidental. It is hard to believe that bacilli situated in the lung substance, and protected by a layer of moist tissue, can be at all affected by air at any temperature which can be inhaled. Whatever germicidal action it possesses must be exerted after they have reached the surface, where it may be of value, partly in shutting up one avenue of further infection by making any secretions carried by the respiratory current into healthy portions of the lungs less noxious, but more perhaps in limiting the danger of contagion by rendering the bacilli inert before they are expectorated. It is comparable to the oiling of the body of a scarlatinal patient: it produces little effect upon him, but furnishes a certain amount of protection to others.

Conclusions drawn from so small a number of cases are apt to be untrustworthy, but in these instances the following summary seems justifiable:

1. Cases so treated differed but little in their course from those treated by the older methods. Whatever gain was noticed seemed more justly attributed to the expansion of the lungs from forced inspirations than to any effect of the hot air *per se.*
2. Little influence can be expected from it upon the development of the bacilli. Any germicidal action it may have is largely exerted in sterilizing the bronchial secretion, and is to be looked upon rather as a prophylactic measure against the spread of the disease than as curative in any particular case.
3. While it is not proven that the occurrence of hæmorrhage in these cases was not all dependent upon the form of treatment, theoretical considerations make it probable that it increases the tendency thereto and suggest caution in its use.

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REPORT ON PROGRESS IN ORTHOPEDIC SURGERY.[1]

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

INTERNAL DERANGEMENT OF THE KNEE.

John Croft[6] reports removal of a large portion of the semilunar cartilage of the knee for persistent internal derangement. It was attached by the anterior and posterior extremities, but displaced upward into the intercondyloid notch. About three-fifths was excised. The patient made a good recovery with a strong and useful joint.

He considers that the semilunar cartilages may be dislocated from their anterior or posterior attachments, or both; that rupture from the posterior attachment must be very rare, if it ever occurs; that when the circumferential relations are ruptured the cartilage tends to displace into the intercondyloid notch, and that when the anterior attachments are torn through the cartilage tends to displace inwards and backwards.

Annandale (page 164) gives the following conclusions from his five cases.

(1) That the internal semilunar cartilage is the one most frequently displaced. Of the five cases only one involved the external cartilage.

(2) That three different forms of displacement occur: —

(*a*) Separation of the anterior and posterior and lateral attachments, the cartilage being displaced backward and outward (three cases).

(*b*) Separation of anterior and lateral attachments, the cartilage being folded upon itself (one case).

(*c*) Separation of anterior and lateral attachments, the inner edge of the cártilage being turned over and lying in the intercondyloid notch (one case).

(3) The joint and limb should be kept perfectly at rest after the operation, for at least six weeks, and then, when the wound is soundly healed, careful movements of the joint and general massage of the limb should be employed.

(4) That the result in all my five cases has been excellent.

Allingham[7] also reports a case of removal of a portion of the semilunar cartilage. after which the patient made a complete recovery.

R. J. Goodin reports a case of dislocation of external fibro-cartilage, in which it was torn away and rested vertically in the intercondyloid fossa. This differs somewhat from the ordinary cases, in which the deformity is reported as on the inner side.

DOUBLE HIP-DISEASE.

Ridlon[8] gives the following from the analysis of his cases.

The disease seldom begins in both hip-joints at the same time, and the second joint may become diseased while the patient is resting in bed under treatment for the first joint.

The joint first affected is often the last to recover.

The duration of the disease in the hips is usually somewhat less than that of the average case of hip-disease, while the duration in the second is usually much less than that of the first.

The influence of derivative effect upon the first joint is not borne out by these (his cases), as the second has got well before the first. The beneficial effect is more to be attributed to the rest necessitated by the involvement of the second joint.

HYSTERICAL HIP.

Glorieux[9] reports a case of hysterical hip occurring in an otherwise healthy man, and is, according to the author, the second reported as observed in man, the other having been described by Charcot. On the maternal side there was an alcoholic history, and one sister was affected with some neurosis. The case presented the usual picture of ordinary hip-disease, but there was never any fever or disturbance of general nutrition, and contraction entirely disappeared under chloroform. There was general pain over the leg, and disturbance of sensation, which corresponded, not to the distribution of nerves, but to the zones of central innervation which are frequently seen in hysterical affections. In spite of long duration of the disease, there was no vaso-motor or trophic disturbance. The differentiation of this condition from one of monoplegia from central organic lesion is well considered in the article.

Bilhaut[10] describes a condition seen twice by him, and which he designates as "coxalgie simulée." The cause of the disturbance is a lack of symmetrical development of tho two legs, this difference being more than could be called physiological. The symptoms were slight, but those of early hip-disease, and were noticed as soon as the child began to walk. They consisted of a favoring of the leg, turning out of the toe, and complaint of fatigue after even slight exertion. In standing the weight was borne alternately on the two feet. Examination of the joint was negative; no hysteria. Nutrition of the two limbs equal, except that the affected leg seemed a little less firm. There was, however, a difference in length of 1½ cm. in favor of the unaffected side. By use of an additional sole the symptoms entirely disappeared. No cause for the asymmetry was found; but the importance of recognizing such a condition, associated with the symptoms of a serious affection, is evident.

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[1] Continued from page 13.

[6] Trans. Clin. Soc. Lond., 1888, xxi.

[7] Med. Press and Circ., Jan. 30, 1889, 113.

[8] Jour. Antis. and Surg., Oct., 1888, 193.

[9] Rev. Méd., Louvain, 1888, vii. 397.

[10] Jour. de Méd. de Par., 1889, xvi. 23.

THERAPEUTICS IN JOINT DISEASE.

Lovett[11] has used with marked success the salicylate of soda in chronic joint disease attended with acute symptoms, and has found it valuable in the following conditions: (1.) When night cries are present. (2.) When the diseased joint is very painful and sensitive to jar. (3.) When vomiting and general discomfort are associated with an increase in the local disease. It was used only "as an adjunct to proper mechanical treatment," and in doses up to the physiological effect or until the symptoms were relieved. In this way it has proved a valuable means for the quick relief of the acute symptoms.

SENILE COXITES.

H. L. Taylor[12] has tried effects of rest with extension. Traumatism seems to have exciting or aggravating effect on many of those cases.

After a month or six weeks of rest with traction, the muscles about the hip seem softer, and the position and mobility improved. The patients are then given a Dow's and allowed moderate exercise with the benefit of fresh air. Two cases reported in which benefit was derived.

A CASE OF RACHITIS ADOLESCENTIUM.

C. B. Keetley[13] reports a case of rachitic curve of upper part of femur, simulating a condition of dislocation. Duration about eight years (then fourteen years). Operated by wedge-shaped osteotomy, resulting in cure. In this case there was also a scoliosis.

LATERAL CURVATURE.

Mr. Bernard Roth[14] calls attention to the inaccurate and unsatisfactory ways of recording lateral curvature, and describes the method followed by him for some time. He considers the conflicting statements in regard to the cure of curves of various degrees of severity to be due to the lack of systematic classification, and suggests the following: (1.) Those without any osseous deformity, postural stage. (2.) Those with osseous deformity, osseous stage — which may be divided into (*a*) slight, (*b*) moderate, (*c*) severe or extreme. His method of recording, although it may not have received the attention of writers, is not new to many orthopedists and depends upon the rotation of the ribs. The patient is made to stand in front of the surgeon and bend forward, holding the knees stiff. A tracing is then taken with a pliable metal tape, transversely across the back, at a level with the lower angle of the scapulæ. This is then transferred to paper. A similar tracing may be taken over the erector spinæ.

In treatment[15] he advocates re-education of muscular sense and methodical exercises of the muscles to enable them to maintain this improved position without effort.

Fischer[16] recommends daily exercises for three quarters of an hour each day.

First. The patient lays both forearms on a cushion placed upon a stool so that the back is nearly horizontal, a band is placed around the trunk and a weight hung upon that. These weights are increased up to 80 kilogrammes and more; the weight must be continued as long as the patient can endure it. The first treatment for several minutes, afterwards for one-fourth of an hour.

Second. The patient stoops so that the back is at right angles with the legs and leans against a horizontal bar padded at both ends so as to press upon the shoulder and pelvis; a strap passed around the trunk passes over the bar and the weight hung upon this exerts a lateral pressure.

These weights can be adjusted according to the situation of the curve. No cases are reported used with this apparatus.

Schwartz[17] has devised a new method of suspension, which enables the correction of the scoliotic trunk. After the correction has taken place a plaster jacket is put on in a corrected position.

The arrangement is a complicated one, but it is said to accomplish the purpose intended. A full description of the appliance is hardly possible here, but the readers are referred to the article itself.

ISCHIAS SCOLIOTICA.

Schudel, in the *Archiv für klinische Chirurgie*, 38 Band, 8 Heft, 1888, describes what he calls ischias scoliotica, a curvature of the lower portion of the spine, which is accompanied with symptoms of sciatica. The deformity is due to the relative inability of the muscles for an active contraction on account of the disease of the sensitive nerve in the muscles. The lumbar nerves are the ones affected with neuralgia.

SHOULDER STRAPS, ETC.

Roth[18] urges strongly against their use at all. As said by John Shaw,— that the muscles whose place they take atrophy from disuse, while the opponents, being developed, increase the deformity as soon as the straps are removed, by faulty antagonism. As a result which often happens when straps are pulled too tightly, the shoulders are held far backward, thus producing marked lumbar lordosis.

THE FORCIBLE AND IMMEDIATE REDUCTION OF OLD SUBLUXATION OF THE TIBIA.

Bradford[19] describes a new instrument for the reduction of subluxation of the tibia. From experiments on cadavers it was found that the tibia could be pushed forward fully an inch. The first resistance encountered is the posterior crucial ligament, which becomes tense after the application of considerable force. The posterior ligament can be stretched, and affords but little resistance in a normal joint.

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[11] Boston Med Surg Jour., April 11, 1889.

[12] N. Y. Med. Jour., Dec. 15, 1888, 653.

[13] Illus. Med. News, 1888-9, i. 7.

[14] Brit. Med. Jour., Oct. 27, 1888, 927.

[15] Brit. M. J., Oct. 27, 1888, 928.

[16] Centralblatt, Orthopaedische Chirurgie, 6th year, Heft 3, page 73, March, 1889.

[17] Weiner Med. Presse, 1888, No. 40-43.

[18] N. Y. Med. J., Nov. 3, 1888, 488.

[19] Tr. Internat. Cong., 1887, ix. iii. 416.

In cases of severe tubercular osteitis, with recovery with fibrous ankylosis, and subluxation of the tibia, forcible straightening of the limb does not reduce the subluxation. The tibia does not slide forward, but is held back by either the hamstrings or contracted capsule.

The apparatus is shaped much like a tuning fork, with the ends of the two prongs so curved, that when the leg is placed between the forks the curve of each corresponds to the bend at the knee. A broad band passes behind the leg at the upper part of the tibia, provided with a screw by which this may be forced forward. Pads are placed over the patella by which counter pressure is obtained. By this means the tibia is first forced forward and the joint then straightened.

OSTEOTOMY.

Robson [20] reports a series of eighty-four osteotomies on fifty-four patients, sixty-eight for genu valgum, and in these Macewen's osteotome was used. In two cases of bow-legs the saw was used, but in the others a wedge-shaped piece was removed from the tibia. Recovery ensued in all cases, and only nine out of the eighty-four required a second dressing. Of the tibial cases, two suppurated, these two being those on which the saw was used. It was found that unless apparatus was worn there was a tendency for the deformity to return.

ANTERIOR TIBIAL CURVES.

Willard,[21] in a paper on surgical treatment of anterior tibial curves, gives the following conclusions: —

Anterior tibial curves, during the soft and springy stages, may be corrected by manual rectification and the use of apparatus.

Braces are useless after hardening has occurred.

Manual fracture is the best and safest remedial operation in young children.

Instrumental fracture or osteoclasis is not as safe or effective as osteotomy.

Aseptic simple osteotomy for all moderate degrees of curve, and cuneiform section for very severe grades, give almost uniformly good and speedy results without suppuration. Subcutaneous section by the saw is also a reliable operation.

Plaster of Paris is the simplest and most effective material for securing accurate position and maintaining absolute fixation.

(To be continued.)

Reports of Societies.

FORTIETH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION,

HELD AT NEWPORT, R. I., JUNE 25TH TO 29TH, 1889.[1]

SECTION FOR MEDICINE, MATERIA MEDICA, AND HYGIENE — CHAIRMAN, DR. F. C. SHATTUCK, BOSTON.

Second Day — June 26, 1889.

Dr. **Francis Delafield**, of New York, opened the meeting with a paper on

CHRONIC ENDOCARDITIS.

Of the ordinary diseases few were more common or presented a greater variety and severity of symptoms than chronic endocarditis. It seemed evident that nearly all of the most important symptoms of chronic endocarditis were due to the disturbances produced in the distribution of the blood throughout the body. Why was it that in some cases there were disturbances to the circulation and in others not? The disturbances to the circulation were due to a number of causes which acted singly or together, viz.: —

1, The endocarditis; 2, the dilatation and hypertrophy of the ventricles; 3, the inflammation or degeneration of the wall of the heart; 4, the inflammation of the coronary arteries; 5, the abnormal heart-action: 6, the associated pulmonary emphysema, chronic endarteritis, and chronic Bright's disease. The reader confined himself to the consideration of three which were perhaps the most important: —

(*a*) Endocarditis. Some of the persons with valvular lesions were suffering from chronic endocarditis and others only from the changes produced in the valves by an endocarditis which no longer existed; in the one case they were suffering from the chronic inflammation, in the other from the deformity. Chronic endocarditis might directly follow acute endocarditis, or it might from the first be a chronic lesion; when once commenced it seemed to have a tendency to persist and involve other portions of the endocardium. It was possible, apparently, for the endocarditis to stop at any time, in which case the valves would undergo no further changes. It was a productive inflammation without exudation. In its most active form there was a very considerable growth of cells, and also a death of cells, so that the inflamed endocardium was thickened in some places, ulcerated in others, and on the roughened surfaces thus made thrombi were formed. In its more chronic form the growth of cells was not as great, the cells did not die, the surface of the endocardium was somewhat roughened and small vegetations often formed, but no thrombi.

In other forms of inflammation there might be added degeneration or calcification to the inflamed endocardium and to the thrombi.

In the more active form of the disease many cases ran their course in six months, the symptoms being disturbed heart-action, delirium, convulsions, paraplegia, cough, hæmoptysis, dyspnœa, nausea and vomiting, dropsy, loss of flesh and strength, anæmia, rise of temperature. There might be intermissions and the inflammation might stop altogether. In the slow form the disease lasted many years; there were usually intermissions, and it might stop altogether at any time. Many of the patients had no symptoms, or one symptom might develop and others be added.

(*b*) The abnormal heart-action. The heart's action, as a rule, was disturbed. Such disturbance was produced (1), by the endocarditis existing as an inflammation of some activity and producing changes in the heart's action; (2) there was such a degree of stenosis or insufficiency of the valves as would mechanically interfere with the heart's action; (3) dilatation and hypertrophy of the ventricles were often present and had their effect in changing the character of the heart's action; (4) chronic myocarditis and disease of the coronary arteries produced the most extreme and intractable disturbance of the heart's action; (5) contraction of the smaller arteries throughout the body, with increase of arterial tension and venous congestion. Such a contraction might last for hours, days, or months. There might be but one such attack or many. With such contraction the heart's action becomes rapid, forcible, or feeble, or tumultuous. The degree of cardiac disturbance was, apparently, in proportion to the suddenness of the contraction of the arteries, not related to the severity or extent of the endocarditis; (6) there were unknown causes, which apparently acted through the nerves, which regulated the action of the heart. In some of these cases the abnormal heart-action was associated with advanced disease of the valves; the pulse was of low tension, feeble and rapid, the heart's action feeble or exaggerated, the condition of the patient often very bad. In still other cases the endocarditis was not advanced, the valves but slightly narrowed or insufficient, little or no change in the size of the heart. The heart's action, however, was rapid, either feeble or exaggerated, pulse soft and rapid. The patients often had pain or abnormal sensations referred to the heart: the general health might be very much impaired.

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[20] Brit. Med. Jour., Jan. 19, 1889, 124.
[21] Med. and Surg. Rep., 1889, Jan. 9, 65.
[1] Continued from page 21.

(*c*) The secondary and complicating changes in the kidneys. Of the persons who suffered from chronic endocarditis a large number never had any complicating disease of the kidneys at all. In the persons who died from endocarditis it was, on the other hand, rare to find normal kidneys. During life it was not sufficient to examine for albumen and casts, which were often absent, but the quantity of the urine, specific gravity, proportion of urea to the ounce of urine, must be determined. Advanced changes in the kidneys often existed in persons whose urine was said after a superficial examination to be normal. In persons who died from chronic endocarditis we might find either chronic congestion of the kidney, chronic degeneration, or chronic nephritis. Three forms of chronic nephritis were likely to be associated with chronic endocarditis: (1) chronic nephritis with a large and continued exudation of serum from the blood-vessels of the kidney into the tubes; (2) chronic nephritis with moderate and intermittent exudation from the blood-vessels: (3) chronic nephritis with little or no exudation from the blood-vessels and the nephritis advancing very slowly indeed.

DISCUSSION.

Dr. William Pepper, Philadelphia, said he was particularly glad to hear Dr. Delafield dwell so largely on the state of the arteries, emphasizing the fact that most of the clinical troubles in chronic endocarditis were troubles of the distribution of the blood, while recognizing that there were troubles from the progress of the central lesion. If we knew more of the state of the nervous ganglia about the heart we should add a point of great interest. One could not sum up, he thought, better than Dr. Delafield had done the difference between the classes of cases of chronic endocarditis — "some a deformity; some a chronic inflammation." When it was a progressive inflammation, rest in bed was essential. The causes of this inflammation, their relations to antecedent diseases, were very obscure. The cases where there was not the evidence of a progressive lesion constituted the bulk of the cases of chronic endocarditis and presented the widest differences. He was disposed to doubt whether a contraction of the arteries lasting for days and even for months could have its origin in a mere nervous cause. It seemed to him that in such cases there must exist some progressive organic change in the arterial walls, the relations of which with valvular disease of the heart and disease or changes in the walls of the heart were shown to be more and more close and important. Again, the relations of the valvular disease and the state of the heart to the amount of blood to be moved seemed to him to be a practical thought of the very greatest moment. Here was an organ where there was perhaps no active lesion progressing, yet it was a deformed organ, and it was called upon for mechanical labor above all things. The amount of work to be done was measured by the resistance to be overcome on the part of the arteries and by the mass of blood to be moved; and in dealing with these cases he thought the careful adjustment and regulation of the amount of blood to the needs of the system was a fundamental thought, and therein came the importance of our more accurate systems of diet, as weighing the patient, determining the excreta carefully, and, further, the importance of depleting treatment, whether by saline mineral waters or carefully repeated small venesections, from which we saw the most remarkable results. Again the mass of the body, the amount of tissue to be supplied with blood by the heart, seemed to him to be a fundamental thought in our dealing with endocarditis. The blood might be deficient, but the amount of adipose through which the blood was to be forced, which increased the work of the crippled heart, must exert an immense influence upon the capacity of the heart to do its work. Some of the cases were anæmic and needed to be fed up; many of them which seemed to be anæmic needed to be reduced in weight. Lastly the tone of the tissue appeared to him to be of enormous importance. We must recognize the difficulty the heart had in driving blood through flabby tissue; add to this the danger that the surface of the body was relaxed, the secretion checked, blood driven centrally, fresh congestion possibly of the endocardium excited, and we saw the reason why, despite all treatment, there would be repeated attacks and the development of more and more unfavorable symptoms. Attack the defective tone of the system by massage, by graduated exercises, associated with careful diet and careful regulation of the amount of blood — that seemed to him the most favorable method of treating and of giving the best results in these cases of chronic endocarditis where there was not actual progress of the inflammation existing.

Dr. William Osler, of Baltimore, said that chronic endocarditis in itself and by itself produced symptoms no more than any other sclerosis. There were, it was true, certain instances in which the degeneration in the atheromatous valves did produce symptoms, but in the majority of these cases no symptoms were produced directly by the endocarditis itself. Take the case of a chronic, gradually oncoming stenosis of the mitral valve: it was not the endocarditis which had deformed that valve which produced the symptoms, but the gradual failure in the compensation of the heart. Symptoms were produced, first, when compensation failed; it was a muscular change, and frequently noticed as a result of the degeneration in the coronary arteries; and, secondly, in the great majority of cases in connection with neurotic changes of which we as yet knew very little.

Dr. William Osler, of Johns Hopkins University, then reported a case of

SENSORY APHASIA,

and exhibited the brain.

Only about one dozen cases of word blindness are now on record, and this was a very typical case. Patient could not pronounce the words he saw, but could repeat them. His words were constantly misplaced. He finally died with paralysis.

Dr. Osler also exhibited some specimens of brains, prepared according to the Italian method, with zinc, zinc chloride, glycerine, etc.

The third paper was by **Dr. James Tyson**, of Philadelphia, on

THE INDUCTION OF PREMATURE LABOR IN BRIGHT'S DISEASE.

The occasions justifying the induction of premature labor are (in the judgment of the reader) two in number: —

1. In Bright's disease complicating pregnancy, where puerperal convulsions attended nephritis in a previous pregnancy.
2. In all primiparæ where Bright's disease had existed previous to pregnancy. Here premature labor should be induced as soon as the fœtus is viable.

There is a third class of cases which are not included in the above categories. There may be no urgent reason for interference. Many go to full term, many miscarry. The supervention of uræmic symptoms calls for immediate delivery. The robust and plethoric are in greater danger than the anæmic and feeble. Bright's disease in a first pregnancy is generally more serious than Bright's disease in subsequent pregnancies.

Dr. V. C. Vaughan, of Michigan, said that some women habitually have uræmic symptoms in pregnancy. By uræmia he means blood poisoned by urinary elements. Where such symptoms present themselves, labor should be induced early. Three patients under his care in three successive labors had puerperal convulsions. The symptoms came on suddenly; there were large quantities of albumen in the urine, and the secretion was scanty. He would never think of allowing such cases to go full term. In primiparæ we are not justified in being so hasty, or in formulating any law.

We can do much to lessen the liability to danger by dieting. The appearance of swelling of the extremities, puffiness under the eyes, albumen in the urine, would lead him to limit the amount of proteids in the food of his patient. He would allow meat only once a day, and would choose the white in preference to the dark meats; milk should be the principal element of diet in many cases. He would promote elimination by a dose of Carlsbad salts in the morning.

Dr. Atkinson, of Baltimore, thought that the contracted kidney was most prolific of puerperal convulsions and of danger in pregnancy. He always waits for the supervention of uræmic symptoms before interfering.

Dr. Scott, of Cleveland, treats the pregnant albuminuric by milk diet, scanty proteids, and tincture ferri chloridi. He had had in one patient seven miscarriages in eight years, and recovery. He believed that patients who had had scarlatinous nephritis in childhood were apt to have Bright's disease during pregnancy.

Dr. Stewart, of New York, said that one difficulty in the management of Bright's disease of pregnancy was to obtain the consent of the patient and family when the induction of premature labor seemed a necessity to the attending physician.

Dr. C. N. Chamberlain, of Lawrence, and **Dr. J. C. Wilson**, of Philadelphia, corroborated the views of the previous speakers.

Dr. Tyson, in closing, emphasized the proposition that in primiparæ the existence of Bright's disease prior to pregnancy makes the disease much more serious. In multiparæ we may have albumen in the urine over and over again without seriousness. But where there are bad uræmic symptoms with tube-casts, then it is time to interfere.

Dr. D. W. Prentiss, of Washington, D. C., read a paper on

THE PHARMACOPŒIA OF 1890.

It is important that the physicians of the United States should be represented in the revision of the Pharmacopœia, and the American Medical Association should appoint three delegates to be members of the Committee of Revision, in accordance with a provision of the statutes.

A resolution was carried that the chairman of the section should offer a motion to this effect at the general meeting.

ON REYNAUD'S DISEASE.

Dr. G. M. Garland read a paper with the above title.

Maurice Reynaud was the first (in 1862) to describe a peculiar affection to which he gave the name of "symmetrical gangrene of the extremities." He collected twenty-eight cases observed in the hospitals of Paris, and after analyzing the symptoms defined the disease as "a neurosis characterized by an exaggeration of the excito-motor power of the cord presiding over the vaso-motor nerves." He believed that there was no alteration of the heart or arteries in these cases, consequently denied that the gangrene was due to arterial occlusion, whether by hyperplastic endarteritis, by thrombosis, or by embolism. He called particular attention to the spasm of the vessels, and proposed the name "local asphyxia" to designate the peculiar condition of the parts affected.

A great many cases have since been reported, and the disease has been duly recognized as a definite nervous affection by leading authorities in all countries.

The reader described three stages: 1. The stage of local syncope; if in the fingers, these are cold, dead, anæsthetic, *digiti mortui*. The temperature is lowered, the parts seem frozen. The return to the normal state is accompanied by light prickling or burning sensations. The duration of this stage may vary from a few moments to several days. This stage may be succeeded by a second, of cyanosis. 2. Local asphyxia. This is a stage in which the exit of venous blood is impeded; the vascular spasm is intense; the capillaries are engorged, and the members have a bluish appearance, are cold and painful. The return to color and temperature may be very rapid, or very slow. 3. The stage of symmetrical gangrene generally develops out of the asphyxiated stage. The gangrene is generally of the dry mummified kind, although it may be moist. The member sometimes undergoes spontaneous amputation in ten days. The gangrene may affect other parts of the body than the toes and fingers; sometimes both ears, the lips, or symmetrical parts of the nose.

Theories — (*a*) angio-neurosis (Reynaud);
(*b*) tropho-neurosis;
(*c*) endarteritis obliterans;
(*d*) local neuritis.

Etiology — exposure to cold (frost-bite), scleroderma, syphilis, malaria, anæmia, abuse of morphine, Bright's disease, diabetes. (Etiology is obscure.)

The internal treatment has been unsatisfactory. Dr. Garland reported three cases occurring under his own observation.

The above paper was discussed by Dr. C. N. Chamberlain, of Massachusetts, Dr. Herrick, of Ohio, and Dr. Holden, of Vermont.

DR. HERRICK thinks that there may be many types of symmetrical gangrene, and that they are all phases of perverted nutrition — disturbance of the crasis of the blood, disturbance of the circulating vessels, disturbance of the nutrition of the cells of the part. In treatment we should take cognizance of the factors of causation.

DR. GARLAND, in closing, remarked that the disease often occurs in young people otherwise healthy, and that at the autopsy there have been no changes noted that throw light on the causation.

The next paper was by DR. J. V. SHOEMAKER, of Philadelphia, on

DIOSCOREA VILLOSA — WILD YAM.

This indigenous plant was believed by the reader to be of singular efficacy as a remedy in intestinal and hepatic colic. In the latter disease it will generally relieve without morphine; in fact hardly any other medicine is needed. The dose of the decoction is from one to four fluid ounces; of the tincture ten to sixty drops; of the fluid extract, five to thirty drops. Large doses are emetic. It is diaphoretic, antispasmodic, expectorant, and cholagogue.

SECTION FOR SURGERY AND ANATOMY — DR. N. P. DANDRIDGE, CINCINNATI, CHAIRMAN.

Second Day — Wednesday, June 26, 1889.

The first paper of the afternoon was by DR. C. B. PORTER, of Boston, on

EXTROVERSION OF THE BLADDER.

Dr. Porter said that this was a congenital deformity, in which the bladder, with mucus surface exposed, protruded hernia-like in the lower hypochondriac region. Its anterior wall and corresponding portion of the abdominal walls were wanting, with usually the symphysis pubis. The urine dribbled from the ureters or was ejaculated in squirts on coughing or sneezing. Its constant contact excoriated the skin of the genitals and thighs and made its possessor miserable, and the attending urinous odor an object of repugnance to those about. The other parts of the genito-urinary system were usually present in a more or less developed state.

Dr. Porter's cases presented one of each sex. Although this deformity was distressing, patients with it lived many years.

The reader then reviewed the different operations that had been done for the relief of this deformity.

With regard to the choice of operation it seemed to the writer that age and the extent of the cleft must determine. Up to the present time no operation had attained continence of urine. The results of diverting the urine into the intestine were not encouraging; diverting the urine to a central point in the abdominal wall did not commend itself. Trendelnberg's operation had thus far achieved no more than the method by flaps. This method was one adapted to both sexes and to all ages.

The surgeon, before operation, should inform himself as to the condition of the kidneys, and continually keep in mind the main result for which he was striving, namely, the free drainage of the urine, otherwise obstruction with its results — dilatation of the ureters and destruction of the kidneys — would ultimately follow. The development of the prepuce and scrotum in the male, the labia minora and majora in the female, furnished the operator abundant material for flaps. All the general rules of plastic surgery held in these operations. The flaps must be about a third larger than the gap to be filled. They must be arranged in such a manner as to furnish to their pedicles an abundant supply of blood. During any delays in the operation they should be covered in hot towels wet in an antiseptic solution. They must be handled as little as possible, and rarely with forceps. Any dragging on the pedicle endangered the vitality of the flap. All bleeding must be arrested before the flaps were adjusted in position. Light and gentle pressure prevented any oozing between them. The operation completed, they should be kept for many hours in moist, hot, antiseptic dressings. Perfect antisepsis should be maintained throughout. The reader reported two cases which were operated upon in accordance with these rules. In both the operation was successful. Case 2 was that of a girl of eight years of age. She was healthy and well formed, with the exception of the extroversion of the bladder, which was complete. The cleft extended from the mons veneris, symphysis pubis, and urethra into the vagina, which was split throughout, and formed a sort of trough down which the urine ran when she was in the upright position. The pubes were separated three inches. The mucous membrane of the bladder and vagina was exposed, bleeding on the slightest irritation. The ureters opened near the middle of this exposed surface an inch apart, and on coughing the urine was forced out in small jets. On straining, the exposed bladder bulged out, forming quite a hernia. Surrounding the bladder was a ring of cicatricial tissue one-half inch wide. By the most careful rectal examination under ether, no uterus or uterine appendages could be felt.

Operation January 11, 1889; ether. A pattern in cloth was cut of a size required to cover the exposed surface. A flap of skin one-third larger than the pattern, to allow for shrinkage, was raised from the middle of the abdomen, between the bladder and sternum. Its pedicle, which was broad, was attached just above the bladder. The flap was temporarily covered with towels wet in a hot solution of boric acid. Two side flaps, each one-half the size of the large flap, were then cut from the pubic and inguinal region, with pedicle at the side of the split mons veneris. These were folded in hot, wet towels. The skin around the bladder was then raised up about one-half inch, making a raw groove running around the margin of the vesical wall, where it blended with the integument, except a small area which corresponded to the split vagina. The large abdominal flap was then turned down, with the skin surface next the mucous membrane, and the edges stitched into the groove above mentioned with fine catgut, leaving only on the middle line a canal for the passage of urine formed by the vagina. The two side flaps were then swung around towards the middle line, and their raw surfaces opposed to the raw surface of the abdominal flap. They were stitched to each other on the middle line, and at their circumference to the same groove as the abdominal flap. In this manner a complete cover for the bladder was made. The abdominal wound, from which the broad flap was taken, was brought together by stitches in the middle line. The two internal wounds were left to close by granulation. The double rubber drainage-tube was placed in the bladder thus formed. The seat of operation was covered with towels wet in a hot 3% boracic solution, and they were changed frequently for a number of days. The girl made a rapid recovery, the wounds closing by first intention except those on the side purposely left open to avoid traction on the flaps, and in less than three months she was dressed and playing about the wards. A plaster cast was taken of the parts, and a hard rubber shield with urinal attached was fitted. This the patient still wore. The patient, now a fine, healthy girl, was presented to the association.

Dr. W. T. Briggs, Nashville, Tenn., read a paper on

THE CHOICE OF OPERATIONS FOR THE REMOVAL OF URINARY CALCULI.

It can hardly be said that there is any best operation; that is best which is best performed.

In determining the choice of operation, the various conditions of the patient and of the stone are to be considered. Lithotomy has been very successful in patients under twelve years. Gross reports one death in thirty-six. The reader had had seventy-one cases: all were successful. The operation is quick, easy, and safe. Litholapaxy in children is more difficult and dangerous.

After puberty the crushing operation is generally the best. In advanced age the increased size of the prostate, the lessened resistance to morbific causes, the proneness to suffer from inflammations of the urinary organs, etc., make every operation hazardous. Litholapaxy is the best operation. The reader stated that in his experience lithotomy has been attended with good results even in the aged. Old age alone does not constitute a barrier to either operation.

Where the stone is small, soft, and smooth it is easily crushed. Where it is hard, large, of urates or oxalates, it often resists the lithotrite. Where, then, the stone is large and indurated, encysted, and sacculated, where there are old, indurated, tortuous strictures, where the urethra is intolerant, where there are prostatic enlargements, overgrowths, and tumors with residual and putrid urine, where there is severe and chronic inflammation of the bladder, he would perform lithotomy.

Lithotrity is now superseded by Biglow's method; the operation is completed in one sitting; is more successful than the old method.

Methods of lithotomy: 1. Supra-pubic method. Mortality, 30%. This method is advisable (*a*) when the stone is of large size, and not easily removable by an incision in the urethra being from one and a half to two inches in diameter; (*b*) when the calculus is lodged high up behind the pubes, and is more accessible by a supra-pubic incision; (*c*) in deformity of the pelvis, with narrowing of the inferior strait; (*d*) where there is great prostatic enlargement and concentric hypertrophy of the neck and base of the bladder. A very large stone cannot well be brought through the urethra and perineum without lacerations.

2. The lateral method: This is the most frequent method; is the most dangerous as to hæmorrhage; is the most likely to wound the prostatic capsule.

3. The median operation: Is the best. There is less section of tissue than in the other methods. The raphe is the safest point for the extraction of stone. But a large calculus cannot well be removed by this incision. If to the median a moderate bilateral incision be added, made in the deeper seated structures, the dilatability of the prostate and perineum is almost incalculable. This operation he styles the *medio-bilateral*. It is the shortest and most direct road to the bladder, and divides parts of the least importance. There is no danger of wounding the seminal ducts. The operation is almost bloodless. The median operation gives plenty of room for a middle-sized stone, but if you add to this operation a nick on either side of the neck of the bladder, the deep-seated parts admit of extension to almost any degree. This lateral nick (made by a scissors invented for the purpose by the reader) need not be more than six lines in extent. If the stone be too large to be easily removed, it may be fragmented.

The median or medio-lateral method leaves the parts in the best condition for drainage. The wound often heals by first intention. Out of Dr. Briggs' 136 cases, there were but three deaths.

Dr. A. T. Cabot, of Boston, read a paper on

LITHOLAPAXY.

In Dr. Cabot's opinion litholapaxy was the operation of choice for the removal of most stones. In modern surgery the test of merit was determined by the results. The best operation was the one which saved the most patients, other things being equal. There were three methods of operation to choose from: (*a*) perineal lithotomy,—median and lateral; (*b*) supra-pubic lithotomy; (*c*) litholapaxy. Each had advantages, and each dangers and difficulties to be recognized and avoided. Each case must be studied for itself, and that operation chosen which would best meet the difficulties and avoid the dangers of that particular case.

We could not compare the results in patients at very different ages. The mortality of children after operation upon the bladder was distinctly less than in those of advanced ages.

Cases might be grouped under three categories: (1) children up to fourteen years; (2) adults from fourteen to fifty years; (3) old men from fifty years upwards. This, of course, was somewhat arbitrary.

Owing to recent improvements in technique and the influence of the adoption of general antiseptic methods the statistics of old times could not be accepted.

Table I. — Statistics of perineal lithotomy. Number of cases collected in children, 355: mortality 3.1%; in adults, 79 cases: mortality 7.6%; in old men, 19 cases: mortality 15.7%. Freyer collected 987 cases. In these the rate of mortality up to twenty years was 5.1%; from twenty to forty 10.7%; above forty 31.9%. Rosenthal in 400 cases gave the following: one to five years, mortality 3.5%; six to eleven, mortality 2.1%; twelve to sixteen, 8.4%; seventeen to twenty-nine, 15.7%; above thirty, 38.8%.

Table II. — Statistics of supra-pubic lithotomy. Number of cases collected in children, 265: mortality 10.9%. In these were included the phenomenal statistics of Assendelft, of Russia — 103 cases without a death. In old men the mortality was 42.1%.

Table III. — Statistics of litholapaxy. Number of cases collected in children, 115: mortality 3.5%; in adults, 149: mortality 5.3%; in old men 188: mortality 8%. Guyon had a mortality of 5.2% in 647 cases of all ages.

In children, therefore, judging from the mortality, there was little choice between lithotomy and litholapaxy. Supra-pubic lithotomy was a little more dangerous.

It was somewhat unusual to see serious interference with the functions of the parts. Supra-pubic incision sometimes caused fistulous opening. Perineal operations were much more likely to cause serious trouble. The lateral incision had the advantage of giving more room and of endangering only one duct. Incontinence occasionally resulted from perineal incision owing to interference with both sphincters of the bladder; and fistulæ, though rare, sometimes occurred, and might be persistent and troublesome.

In regard to completeness of cure, it was not uncommon to see a second or third attack of stone in the same patient, (1) on account of persistence or reappearance of the uric acid diathesis: the same might be true of the oxalate of limestone; (2) successive escape of several stones from the kidneys might give rise to successive stones in the bladder; (3) several phosphatic stones might be reproduced after removal if the chronic cystitis and alkaline urine which led to the original formation persisted: (4) if a fragment was left after the operation it might serve as a nucleus of another stone. A healthy bladder that completely expelled the urine usually freed itself of such fragments.

Selection of operation: With children it would seem wise to use litholapaxy for all small stones, — stones up to two centimetres in diameter. This operation did not involve danger to the seminal ducts and did not give rise to fistulæ and incontinence of urine. Litholapaxy was the operation of choice in adults. Stones weighing 2000 to 3000 grains had been crushed and removed. A large and very hard stone might resist every attempt at crushing, and the stone might have as a nucleus a foreign body too hard to crush. Stricture of the urethra might prohibit litholapaxy. False passages might exist which so interfered with the introduction of instruments that the dangers of the operation were enhanced. The stone might be so lodged in the entrance to the urethra that it could not be pushed back and seized with the lithotrite. Occasionally cases were met with in which the prostate was so large that the stone could not be reached. The supra-pubic operation would apply to most cases not to be dealt with by litholapaxy.

Dr. Dudley P. Allen, of Cleveland, read a paper on

LITHOLAPAXY IN CHILDREN.

The object of the paper was to point out the cases to which this operation was adapted. The reader alluded to Freyer's results with the lateral lithotomy, and expressed the opinion that with time and experience litholapaxy might yield similar results. In cases of large calculi the supra-pubic operation had its advantage on account of the difficulty, in case litholapaxy was done, of pumping out the fragments. Litholapaxy was not a cutting operation, and there was not likely to be so much delay before patients submitted to operation. In cutting operations union by first intention was rare in any save the supra-pubic method. Thus far no operation confined the patient to bed so short a time as litholapaxy, and it could in no way injure the reproductive apparatus. The advantage gained by seeing the interior of the bladder, as in the supra-pubic method, had been urged as a point in favor of that operation. In boys, however, encysted stones were uncommon and the bladder was usually in a healthy condition, so that the necessity of seeing its interior was small. One great difficulty in litholapaxy was the small size of the instruments that must be used. In some cases, even after incising the meatus, the urethra was so small that the instrument could not be introduced. Where an operator found a very large stone, it would be better to abandon litholapaxy and do lithotomy.

Beyond question, the operation of litholapaxy in children was one which must be recognized as particularly suited to medium and small sized stones, and though medium and lateral lithotomy were very successful in such cases, he believed litholapaxy would be equally successful in skilled hands. It had the advantage of absence of cutting, of slight suffering, and of short confinement. In case of return of stone, the second operation would be more easy than the first on account of the increase in the size of the urethra with the increase in age. Large and hard stones should be removed by the supra-pubic operation, especially if for any reason it was desirable to see the interior of the bladder. Median lithotomy was favorable in cases of small stone. In case of medium-sized stone, where the urethra was not large enough for the introduction of the instrument, lateral lithotomy was indicated.

Dr. J. W. S. Gouley, of New York, in opening the discussion, said the operation of lithotrity was indicated in cases where the stone was free, friable, and of small or medium size. In certain cases, plurality of stones was not a contraindication. The patient should be in otherwise good physical condition, urethra ample or susceptible of being rendered so. The existence of stricture was not a contraindication to cysto-lithotrity, provided the urethra could be freely dilated or enlarged by internal incision; but a narrow stricture in the perineal region contraindicated lithotrity by the perineal route and generally demanded cutting operation. In cases of thick bars at the neck of the bladder, and tumors of the prostate, lithotrity was not always practicable and cutting operation sometimes required. When the bladder contracted and its capacity was markedly diminished, or it was irritable, perineal cystotomy was indicated and lithotrity contraindicated. Advanced disease of the bladder, ureters, and kidneys contraindicated both lithotomy and lithotrity.

As a general rule, multiple short sittings (one to three minutes) were applicable to patients whose bladders were only moderately tolerant, three or four such sittings, with the introduction of the lithotrite, four or five days apart, usually being sufficient to cause the spontaneous expulsion of all detritus of friable stones one inch in diameter. One or two long sittings (ten to fifteen minutes), with five or six introductions of the lithotrite, sometimes sufficed to remove from tolerant bladders the major part of a friable stone one to one and one-fourth inches in diameter, the remainder of the detritus being spontaneously expelled. Cysto-lithotrity at one sitting, with aspiration of the detritus, was said to be contraindicated when the stone was large and there existed urethro-vesical obstruction, but it was often performed in violation of both these contraindications. The sittings of lithotrity averaged two minutes. Prudence demanded intervals of four days between sittings, twelve days in all being consumed in effecting a cure. His own cases were ambulant cases.

Against litholapaxy it might be said that the sittings lasted two hours; that the process of aspiration itself was so much more painful than the crushing that anæsthesia was rendered necessary, and this objection was well taken when we considered the ill effects on the kidneys from the inhalation of sulphuric ether in case anæsthesia was to be prolonged one or two hours. Litholapaxy was no longer a novel operation, having been performed many hundred times since 1878. The great expectations of its advocates were not realized, for the operation could not always be terminated at one sitting; it was not suitable in a number of cases of large stones; it was not applicable in many cases of stone complicated with prostatic obstruction. It had been too often misapplied by the over-zealous to medium-sized and small stones adapted to lithotrity at one or two short sittings. In many cases the injury inflicted upon the bladder had led to cystitis and the formation of phosphatic stones; and with the necessarily prolonged anæsthesia the operation was too dangerous to be generally employed. Litholapaxy applied to a very limited class of cases was a very good operation in the hands of skilled and experienced lithotritists, but too much of an undertaking for beginners or those not constantly occupied with surgery. That many bladders had been sacrificed in this way was no fault of the operation, but of the operator.

In cases of small friable stones weighing a few grains the operation of lithotrity was justifiable and safe in children under five years of age; lithotomy was safer in such children when the stone exceeded one-half inch in diameter.

The general conclusion of the reader was that the proper choice of treatment of urinary concretions could only be made after careful consideration of each method and each case, there being no generalizable method.

In reply to a question in regard to vesical irritation by fragments Dr. Gouley said he thought that was generally very greatly exaggerated. The sharp, angular fragments of the worst kinds of stones did less harm than we were asked to believe. The epithelium of the bladder had the property of throwing out on the slightest irritation a considerable amount of thick mucus so called, which adhered to the fragments, forming an envelope which was so protective that the fragments of such size as would pass spontaneously through the urethra slipped out without causing much irritation. Sixty per cent. of the stones of diathetic origin consisted of uric acid and the urates. These stones of uric acid and the urates were highly granulable and underwent disgregation, without disintegration of the particles, upon the ingestion for several weeks of the potash salts. Now the lithotrite effected the same result without any alkali. The great majority of stones could be crunched into a coarse powder or granular state; and these granules of uric acid caused little or no irritation and were passed out. He frequently crushed these stones in this way, in his office, without pain and without anæsthesia.

Dr. R. T. Morris read a paper on

WHAT DRESSING SHOULD LIE NEXT TO THE WOUND?

Dr. Morris alluded to the various methods of dressing wounds, and said that if we applied any textile fabric, as bichloride gauze, etc., the connective tissue cells would shoot into the fabric and delay healing, and if such dressings had to be removed we destroyed a large part of the tissue nature had put across the wound for purposes of repair. To obviate such a result he recommended the use of Lister's protective oiled silk, in that the connective tissue cells became organized with the greatest ease and without the irritation that followed the application of any of the textile fabrics. In the suppurating wound, to get clot replacement was almost impossible by any other means. In skin grafting, the little cells shooting out would penetrate any textile fabric and the graft might die. If, however, Lister's protective oiled silk, properly prepared, were placed next the graft the result would be striking; the thin blue film of epithelium remaining undisturbed was an evidence that we had covered our grafts with the best dressing. In wounds containing pus we must first use peroxide of hydrogen to make the granulating wound chemically clean, and over that Lister's oiled silk, and then no more pus would form.

Over the Lister oiled silk we could apply any absorbent dressing we wished — bichloride gauze, salicylated gauze or cotton, or any of the absorbent dressings, which dried it so that micro-organisms could not grow in it readily.

DISCUSSION.

Dr. H. O. Marcy, Boston, said he agreed in very large measure with Dr. Morris with reference to the wound he had under discussion. He had long treated them by Dr. Morris's method; and the use of Lister protective dressing in a wound that must necessarily be a granulating wound, and which had been rendered aseptic, gave better results in his hands than any other dressing. In an operative wound, however, he would differ from the reader. In such wounds the coaptation must be absolute and the wound aseptic. The edges of the skin being in close apposition needed no other protection than just drying them by blowing on iodoform. Then a few layers of cotton completed the dressing. This left nature entirely to herself, not a stitch to remove, the tendon suture having been used, nothing to drain, no effusion, agglutination and repair went on rapidly.

Dr. Pancoast, Philadelphia, called attention to iron-dyed black silk he had had made and was in the habit of using. White silk was dyed with lead and was not pure silk; when dyed with iron and washed with acetic acid it was pure silk. The fine black silk suture would remain for weeks in the tissues without suppuration or inflammation.

(To be continued.)

ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY,[1]

HELD IN MECHANICS' BUILDING, BOSTON, JUNE 11, 1889.

SECTION IN OBSTETRICS AND GYNECOLOGY.

Dr. J. B. Swift, of Boston, read a paper on

THE THIRD STAGE OF LABOR.

The third stage of labor was the period following the birth of the child until the placenta has been delivered and firm uterine contractions established.

Dr. Swift reviewed the theories of Baudelocque, Schultze, and others as to how the placenta became separated.

In all probability the normal separation of the placenta and membranes did not take place until after the birth of the child.

As to the management of the third stage of labor, there were still advocates of an entirely expectant treatment. It was claimed that by the expectant method there was a better separation of the decidua, and the membranes were not so apt to be retained; but, on the other hand, more blood was lost, and uterine relaxation took place, allowing clots to form in the uterus. There were still advocates of traction on the cord, but most of them advised that the traction should not be too strong, and should be combined with pressure on the uterus by the other hand.

His own method was to follow the uterus down with the left hand, which was kept on the uterus till the binder was applied, and sometimes later. The cord was tied and cut and the child put one side. Then the patient being turned upon the back he waited until the uterus was felt to contract, and if the sensation of something passing out of it was felt and it was growing smaller, with the hand spread out over the uterus he pressed gently downwards in the direction of the axis of the pelvic brim. The placenta, as it appeared at the vulva, was caught in the right hand and twisted around, while being drawn out, so as to roll up the membranes. The placenta being born, the uterus was still held by the left hand, a dose of ergot administered, the soiled clothes removed as far as possible from beneath the patient, a wad of antiseptic cotton placed over the vulva, and the physician sat by the bed with his hand holding the uterus while the nurse was washing and dressing the baby, which took about an hour. Then the patient's toilet was attended to and the binder applied.

If after twenty minutes by the watch contractions had not begun we might in most cases endeavor to excite them. It was the duty of the physician to hold the uterus himself.

Dr. C. M. Green, of Boston, said he agreed with the reader as to the duty of the physician during the third stage of labor. A great deal of post-partum hæmorrhage was due, he believed, to the fact that the uterus was left to take care of itself too soon after the child was born and the placenta delivered.

After the birth of the child he was in the habit of stimulating uterine contractions by cupping the fundus with the left hand and exercising a sort of circular friction movement over the fundus, but did not at that time use force upon the uterus. If one-half hour passed without successful contractions he would exercise the Credé method. While the nurse was bathing the patient and removing the soiled clothes he still kept his hand upon the fundus. When the woman was ready for the binder he padded the uterus and adjusted the binder himself.

Dr. Edward Reynolds, of Boston, thought that so long as the uterus was watched by the hand to a degree sufficient to prevent post-partum hæmorrhage, it made very little difference to the patient what method was used in the application of Credé's method. The uterus should not be left unguarded by the hand during the third stage. Constant pressure of the hand over the uterus and slight friction movements were sufficient in practically all cases to do away with all post-partum hæmorrhage. He thought he had seen metritis and perimetritis follow too forcible application of Credé's method. He preferred always to manage the third stage of labor with the patient on the back all the time, and preferred for her not to turn upon the side at all. Care should be taken not to express the placenta too suddenly and violently in case of an already slightly torn perineum. If the obstetrician's hand was strictly clean early removal of the placenta, though seldom necessary, was a very simple proceeding and one devoid of danger.

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[1] Continued from page 618.

Dr. J. P. Reynolds, of Boston, said he was very sure that a trained hand should be kept over the patient's uterus during the whole toilet. It was remarkable to notice how high the percentage of disease and death was from this simple matter of the expression of the placenta. Rough and careless handling of the uterus was to be strictly avoided. In case, however, the patient presented alarming symptoms, the very first thing was to empty the uterus without a moment's delay.

Dr. Sinclair, of Boston, said the too hurried withdrawal of the placenta or the too harsh manipulation of the uterus was to be deprecated, although every one knew that one could never be sure of exemption from hæmorrhage unless he had the uterus in the palm of the hand.

Dr. W. E. Boardman, of Boston, read a paper on

ASEPTIC OBSTETRICS.

Dr. Boardman's paper was intended to show that puerperal septic disease was scientifically demonstrated to have a bacterial origin, and it was immaterial for our present purpose whether we accepted the chemical or the vital theory of their action; that it was probable that most of the local affections incident to the puerperium belonged to the same septic class of diseases; that these occurred throughout the State, in both rural and urban districts, more commonly than physicians had been willing to admit, and, this being true, it might readily be understood that deaths from this cause, and the much more numerous cases which survived to become more or less chronic invalids, entailed a serious burden upon the welfare and prosperity of families and the State; finally, that the experience in hospitals exhibited the adequacy of due prophylaxis to prevent septic disease.

Dr. Boardman described the various methods which have been employed in the past for the prevention of puerperal septicæmia. The rules adopted, while correct in principle, were defective owing to lack of knowledge as to the precise details required to ward off the disease.

In conclusion, Dr. Boardman called attention to what might now be considered necessary in the way of prophylaxis.

1. Filth implied decomposition and invited the presence of septic germs; hence perfect cleanliness was demanded.

2. The proper contraction of the uterus should be promoted and its proper position secured, so that no obstruction to the exit of lochial discharges should exist.

3. The vulva should frequently be bathed in a disinfecting solution, and after a tedious or laborious labor, or when artificial or instrumental delivery had been necessary, it was important to give a vaginal douche of a hot disinfecting fluid, which should be extended within the uterus if its cavity had been entered by the hand or by instruments, and also if a putrid child had been born.

4. Perineal lacerations should be united, in order to avoid the exposure of extensive raw surfaces to the action of the germs.

5. At the completion of the labor a napkin or towel wet with the disinfecting fluid should be placed against the vulva.

6. Finally, the toilet of the patient was to be made complete, all soiled clothing removed, and the vulvar napkin applied. Both the physician and the nurse should be governed by rigid rules of absolute personal cleanliness. Their hands should be disinfected. Due attention to hygiene, etc.

These rules were especially required during the first week of the lying-in period.

Dr. Porter, of Auburndale, said that in the use of antiseptics in the hospitals and in private practice the mortality had been reduced as much as in small-pox by vaccination and isolation. He wished to draw two inferences: (1) that the discussion of antiseptics in obstetrics had increased the attention to cleanliness, if not the direct use of antiseptics in pregnancy; (2) that it was likely to become in the near future the exception for obstetric cases not to be treated antiseptically.

Dr. Crawford, of Roxbury, said she most heartily believed in antisepsis. We could not safely pin our faith to any one of the reputed germicides or trust to them except as accessories to the one certain safeguard — perfect cleanliness of everything about the person of our patient, particularly the instruments, the hands, and the clothing of those who use them. Dr. Crawford spoke of the merits and efficiency of boiling water, or its equivalent, steam, as a germicide. In the cleansing of hollow instruments care should be taken to have the instruments completely filled with the boiling water. Many of our most valuable antiseptic agents were often rendered useless or harmful in the hands of the ignorant or unskilled. There were so many details upon which immunity from danger depended that it might be doubted if the comparatively simple operation of washing out the uterus, for instance, could be left to any except highly skilled obstetricians.

Dr. E. M. Buckingham, of Boston, said he thought that carbolic acid in any strength possible to be injected into the vagina was not an antiseptic to be relied on. He believed the use of moderately carbolized injections of such water as we were likely to get in most places, that was not boiled, was far more dangerous than to let the patient absolutely alone. In making the treatment positively aseptic the toilet of the hands was perhaps the most important thing. He thought the antiseptic pads were unquestionably efficient. A simple and good substitute was the napkin dipped in corrosive sublimate and dried. In the use of the catheter it seemed to him wiser not to use the same catheter for two patients. In two instances he had seen a slight irritation in the urethra from the passage of a catheter which had been wet with corrosive sublimate.

Dr. O. H. Everett, of Worcester, said he had not adopted the antiseptic treatment to the extent of using corrosive sublimate and carbolic acid as freely as some who had spoken; but he believed in perfect cleanliness, which thus far had been satisfactory; still it had been his fortune to see cases of puerperal septicæmia, whether from neglect on his part he had not been able to determine.

Dr. C. W. Stevens, of Charlestown, said he had been able to carry out the strict antiseptic treatment in a somewhat modified form among the very poor classes, notwithstanding their ignorance, obduracy, filth, or anything else, because he did it himself. The expense was nothing to them and very slight to him.

Dr. Z. B. Adams, of Framingham, said he still believed that the use of the douche in normal midwifery was bacteriology run mad. In his opinion, the vaginal or intrauterine douche was indicated in case of foul lochia. There was danger in the use of too weak solutions of carbolic acid and of corrosive sublimate, as well as in the use of too strong solutions. He had seen cases of poisoning produced by mild solutions of bichloride, that would not have been produced by strong solutions: that, however, he would not state as a positive fact. He had nothing to say against the germ theory of disease or the necessity of keeping out the germs in puerperal fever.

Dr. Dunbar, of Boston, wished to put himself on record as an advocate of aseptic midwifery, whether antiseptic was another question. In normal cases he used no douches: but in complicated cases and in all instrumental cases he used injections of corrosive sublimate (1 to 2000) followed by injections of hydronaphthol to wash out any superfluous corrosive sublimate.

Dr. Marion, of Brighton, desired to place himself decidedly on the side of asepsis. It was his custom to give a bichloride douche before labor in all cases where there had been a leucorrhœa during the last month or two of gestation, and by so doing he thought there was less ophthalmia in the new-born.

Dr. Marion called attention to linear laceration of the vagina, which occurred sometimes without laceration of the perineum, which, if detected at the time of occurrence and repaired in accordance with the rules laid down by Dr. Emmet, would save a great deal of suffering to the patient in after life, and a very tedious operation later.

Dr. J. F. Couch, of Somerville, said he did not use douches before or after labor; did not douche the genital canal unless there was necessity for so doing. That necessity was evidenced by some peculiar rise in the temperature or some peculiar condition of the patient. He used bichloride on the hands and hydronaphthol on the instruments.

Dr. T. S. Greene, of Dorchester, said he had had less anxiety and less difficulty with his cases since adopting the aseptic method of treatment.

Dr. C. M. Green, of Boston, said that at the Lying-in Hospital the custom at present was to give a vaginal douche before labor, for the benefit of the child as well as that of the mother. The vaginal douche did not do harm to the mether and did diminish the risk of ophthalmia. In his own private practice he regarded it unnecessary in some cases to give the douche during the first stage. If there had been no leucorrhœa and the lady was of cleanly habits, he did not feel that it was absolutely necessary; nor did he invariably give a douche at the conclusion of labor. Provided the labor was normal, no instruments used, and the examinations few, he did not necessarily do it.

Aseptic midwifery could be carried out among the poor exactly as well as among the rich. In the clinic of the Harvard Medical School, in which the students in the year delivered about five hundred cases, we did not have septicæmia or women sick with septic fever. These women lived in unhygienic quarters, did not have clean sheets, pads — lucky if they had the ordinary towel — and they did not have septicæmia; and why? Because the students were taught to take care of their hands.

He had a supreme contempt for the purported asepsis of a great many. The mixing up of corrosive sublimate and dipping one's hands into it was far from asepsis. The hands should be first washed with soap and water and a good, stiff nail-brush used before they were dipped in corrosive sublimate. He questioned whether it was not our duty after using forceps to boil them. The simple immersion of the forceps in 1 to 20 carbolic would not, he believed, make them thoroughly aseptic. He thought we should not bring discredit upon the practice of aseptic midwifery when the failures were due to our own fault in not taking extreme precautions.

Dr. W. E. Boardman, of Boston, in closing the discussion, said there was a difference of opinion with regard to the strength of the solution to be used. As we were not all chemists or bacteriologists we had to rely upon practical experience. He knew of no better practical experience than the experience of the Boston Lying-in Hospital, which had been entirely freed from septicæmia by the means used; and it was fair to presume that the means used were the efficient means to kill bacteria.

Dr. C. P. Strong, of Boston, read a paper on

THE SURGICAL TREATMENT OF BACKWARD DISPLACEMENTS OF THE UTERUS.

Dr. Strong made two distinct divisions of backward displacements: —

1st. Backward displacements which were not adherent. 2nd. Backward displacements in which there existed union by slight or firm adhesions between the uterus and adjacent viscera or pelvic walls.

The treatment of the former class was limited to the best means to be adopted for retaining in its normal position the uterus which cannot be replaced manually; in the latter, the additional consideration of how first the uterus might be freed from its abnormal position and subsequently secured.

The simplest plan for the separation of the adhesions was rupture or tearing off the adhesions without any cutting operation. During the past three years he had done the Schultze operation, somewhat modified, in more than twenty cases. Only two required further surgical treatment for a recurrent displacement.

It was unwise to attempt a forcible reposition if there was present any acute inflammatory process; if the adhesions connected the fundus in broad bands with the investing membranes of the rectum; if the adhesions were found to be lateral, involving, as they probably do in that case, the tubes or ovaries, or both; if they had resulted from an attack of general peritonitis; if it was fairly probable that tubular disease is present.

In the treatment of the non-adherent backward displacement the problem to be solved was to perfectly secure the uterus as nearly as possible in its normal anterior position in the safest, surest manner. The recognized methods were: 1st, the operation known as shortening of the round ligaments at the inguinal ring, or the Alexander-Adams operation; 2nd, direct fixation of the uterus forward by stitching it to the anterior abdominal wall or to some anterior portion of the pelvic lining; 3d, shortening of the round ligaments within the abdominal cavity, without destruction of their continuity.

Summary.— From the results of his own operating, he had drawn for his guidance the following rules: —

Be sure the displacement is the cause of the symptoms.

Never resort to operative measures without first exhausting all forms of non-surgical treatment in so far as they may be applicable to the case under consideration.

An adherent backward displacement of the uterus demands for its cure, first, separation of its adhesions; second, anterior fixation.

A backward displacement which is free or has been freed from its adhesions may be secured forward —

First, by shortening of the round ligaments, either by the Alexander-Adams or Wylie method.

Second, by fixation of the uterus to the peritoneum of the anterior abdominal wall, or to that of the anterior pelvic floor (Schücking's method).

The Alexander-Adams method was the only one not involving interference with the peritoneum, and should, he believed, be selected. He made an exception that if, for any other reason, the abdomen had been opened, the Wylie operation might perhaps prove its equal.

DISCUSSION,

Dr. F. H. Davenport, of Boston, said that these cases of backward displacement, especially with adhesions, had been looked upon as the *bête noir* of gynæcology and hardly to be remedied at all. The question to-day was not, can this woman be cured? but, by what method shall we cure her? Sänger of Leipsig considered that 20% of the cases of backward displacement were to be operated upon, and were not curable by non-operative measures. He thought those who had practised the method of overcoming the adhesions and replacing the uterus by systematic packing and tamponning the vagina would hardly confess to failure in 20% of the cases.

He agreed with Dr. Strong as to the value of gradual separation of the adhesions in preference to laparotomy. One should not be hopeless too soon about cases in which there were apparently firm adhesions. He had seen such cases yield after months of treatment by tamponning.

Dr. E. W. Cushing, of Boston, said the question of interference in these cases must depend on the social condition of the patient and where she comes from. There seemed to him to be three indications to justify opening the abdomen: 1st, to get the woman out of bed, where she is practically bed-ridden; 2nd, to keep the woman practically out of the poor-house, when she is depending on her own exertions; 3rd, where the woman lives in a place where she can't get treatment.

Dr. Burt, of Boston, said that usually, unless there was something, as diseased tubes or ovaries, which needed abdominal incision, he should not feel justified in making an abdominal incision.

Dr. H. C. Baldwin's paper on

THE NON-RADICAL TREATMENT OF CANCER OF THE UTERUS AND VAGINA

was read by title.

(To be continued.)

Recent Literature.

The Principles and Practice of Dentistry. By Chapin A. Harris, M.D., D.D.S. Twelfth edition, revised and edited by Ferdinand J. S. Gorgas, M.D., D.D.S. Philadelphia: P. Blakiston, Son & Co. 1889.

If Chapin A. Harris were to come from his grave and see the child fathered upon him, he would not recognize his own offspring. A diligent search, however, would disclose the "strawberry mark."

This twelfth edition, even more so than its predecessors the tenth and eleventh, is almost a new book, much having been rewritten, much added, and a great deal dropped out as obsolete, superseded by new methods and new discoveries. The book still retains its distinctive form, and as a resumé of the whole science and art of dentistry is now, as it always has been, unlike and unsurpassed by any work of the same character covering similar ground. It is well edited. There is very little of that "padding" which detracts from the value of so many medical, and especially dental, books, the penny-a-line kind of writing, but all is terse and to the point. The volume is an encyclopædia of dentistry, invaluable to the dental student and to the practitioner who has not ceased to be a student.

The various branches of the art are taken up in turn, and quite fully treated, from the anatomy of the mouth and face to the construction of artificial palates. Nothing seems to have been neglected or overlooked. Dental prosthesis, vulgarly called mechanical dentistry, in its new and wonderful development, has received its due share of attention, though we miss the full descriptions of the manufacture of porcelain teeth found in the older editions, become almost obsolete in the dental laboratory, but now, thanks to the cleanly and efficient gas furnaces, being brought to the front again. The value of the book is proved by the numerous editions that have been called for, while the excellence of the editing and the general style of the printing leaves little to be desired.

— The Kansas City *Star* says that "Washburn college is to have a medical department, which will have a tendency to popularize cremation at Topeka."

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DR. BARRY'S REPORT TO THE LOCAL GOVERNMENT BOARD UPON AN EPIDEMIC OF SMALL-POX AT SHEFFIELD, ENGLAND, IN 1887-88.

THIS is one of the most thorough and exhaustive reports upon an epidemic of infectious disease which the Local Government Board of England has yet issued, and contains in its three hundred and four quarto pages a complete history of the scourge from which the city of Sheffield suffered in 1887-88. In the number of the population, the rate of mortality from small-pox, and in some other characteristics, this epidemic bore a marked resemblance to that with which Boston suffered in 1872-73.

The *Sanitary Record* comments on the misrepresentation of this epidemic by those who are wont to decry vaccination, attributing "an outbreak of small-pox in a community so well vaccinated as that of Sheffield as being an evidence of the futility of vaccination. The facts of this epidemic, as now known, constitute one of the most complete vindications of vaccination ever observed."

The report comprises the following topics: a general description of the district; the origin and progress of the epidemic; action of the local authorities; circumstances which influenced the spread of small-pox; and the direct pecuniary cost of the epidemic.

Sheffield is a manufacturing city, having an estimated population (in 1887) of 316,288. The number of reported cases of small-pox for the year ending March 31, 1888, was 6088; the number of deaths from small-pox was 590. The rate of those attacked was therefore 19.3 per 1000 of the population, and the mortality rate from the same cause 1.86. The experience of former epidemics in other localities appears to have been repeated in Sheffield in the fact that hospitals for small-pox in crowded localities play the part of "small-pox distributors."

The report dwells minutely upon the changed incidence of small-pox from childhood to the period beyond the age of ten, and justly attributes the change to vaccination, a "rite," as the opponents of vaccination termed it, which was much more commonly practised since 1872. By a thorough house-to-house visitation it was found that less than 1 per cent. of the school children of Sheffield were unvaccinated, and about 2 per cent. of the people of all ages were unvaccinated. So that, as Dr. Buchanan states in his introduction to Dr. Barry's report, "this 2 per cent. of the population claims to be regarded as so many seventeenth or eighteenth century people scattered about Sheffield for the very purpose of having themselves compared, under nineteenth century conditions of life, with the law-abiding people of the present day."

Comparing the immunity of the vaccinated as compared with the unvaccinated in this epidemic, the rates were as follows: for 100,000 vaccinated children the rate was 9 deaths, and for every 100,000 unvaccinated children the mortality rate was 4,400.

The attack-rate of the vaccinated was 5 per 1000, and of the unvaccinated it was 101.

The vaccinated children had therefore, as compared with the unvaccinated, a twenty-fold immunity from attack, and a four hundred and eighty-fold security against death by small-pox. If the vaccinated children of Sheffield had been attacked at the same rate as the unvaccinated there would have been nearly 7000 attacks among such children instead of the actual 353, and nearly 3000 deaths instead of the actual six. Of the children living in houses actually invaded the attack-rate was 78 per 1000 in the vaccinated, and 869 per 1000 in the unvaccinated, while the death-rate was only 1 per 1000 in the vaccinated, but 381 per 1000 among the unvaccinated. As regards persons over ten years of age, the attack-rate in persons twice vaccinated was 3 per 1000, in persons once vaccinated 19 per 1000, and in persons not vaccinated it was 94 per 1000, whilst the death-rate among those twice vaccinated was 0.08, among those once vaccinated it was 1, and among persons not vaccinated 51.

In the wards and offices of five hospitals there were one hundred and sixty-one persons in attendance on the sick. Of these eighteen had had small-pox before their engagement and none of them became sick; sixty-two persons (nurses) had been vaccinated in infancy only, and of these six were attacked and one died. The remaining eighty-one persons had been successfully revaccinated and none of them contracted small-pox.

There was also a similar immunity among the vaccinated troops, police force, and post-office officials.

Dr. Barry's report concludes with a statement of the direct cost of the epidemic, and shows that the authorities expended over £32,000 in combating the disease. He also adds: "This expenditure forms but a fraction of the total money loss to the city. Among the losses of which no exact estimate can be formed must be reckoned loss of wages, expense of doctors, maintenance of the sick, cost of funerals, etc. The loss to trade cannot be guessed at. Sheffield was avoided by all outsiders except those whose business was imperative, and even these did not sleep in the town if they could avoid it. The hotels were empty and the people were boycotted by the inhabitants of neighboring towns. In one month (February, 1888) the tramways alone carried 200,000 fewer people than usual."

The report is very abundantly illustrated with maps, tables, and diagrams. In the latter a commendable departure from the stereotyped methods is introduced, and diagrams are presented which appeal at once to the common sense of the intelligent inquirer.

Dr. Barry's report may be commended not only to boards of health as a model of sanitary investigation, but also to all who doubt the efficacy of the recognized measures for the prevention of small-pox.

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THE TESTICLE AS A REJUVENATOR.

Twenty years ago, at least, Dr. Brown-Séquard exhibited tendencies towards a belief that the testicle might be of value for other purposes than the impregnation of the ovum, provided it was taken when young, — that it was competent, when its vital principles were properly injected for the respective purposes, not only to call into existence the very young but to rejuvenate the aged.

It seems that this idea has continued to germinate in the brain of the learned, but eccentric, physiologist all these years. In 1875 he made experiments with grafts of testicular tissue upon dogs, and to his delight succeeded, as he thought, in renewing the youth of one wretched old cur. Since then he has continued these strange investigations at various times, and during the month of June this year made two separate communications to the Société de Biologie of Paris upon this subject, describing the methods used and the supposed results. He, apparently, thinks he has discovered a sort of *elixir vitæ*, or fountain of perpetual youth, of simpler composition than those elixirs so sedulously compounded by the mediæval philosophers, and easier of access than the elusive fountain which enticed poor Ponce de Leon to his fond and fatal journey.

According to the reports of Brown-Séquard's communications given by the French journals, he has been experimenting with a fluid obtained by crushing and washing the testicles of young animals, which was mixed with blood from the spermatic veins and water. This fluid he injected into his own subcutaneous cellular tissue almost every day for two weeks, with results so gratifying that he hastened to communicate them to his biological confrères. Notwithstanding his ripe age, between seventy and eighty years, he experienced a rejuvenescence of all his forces, physical and mental. The former healthy and vigorous contractility of the intestines and bladder had returned, as also had his general muscular strength. Intellectual labor had again become easy to him.

Dr. Brown-Séquard did not succeed apparently in inoculating his hearers with his own enthusiasm for his procedure. Scepticism and physiological objections found expression through MM. Dumont-Pallier and Féré. Nor did the society treat his results with sufficient seriousness to discuss the question as to the value of the ovary for similar purposes, or as to the possible results of injecting subcutaneously an ovarian aqueous extract into the male and a testicular extract into the female.

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MEDICAL NOTES.

— The city of Ann Arbor, Mich., has voted to issue bonds for $25,000 for the erection of a hospital, for which the legislature appropriated $50,000.

— The death is reported of Prof. Dr. Robert Ultzmann, of Vienna, at the early age of forty-seven years. His book on urinary analysis has been translated into English.

— Dr. Cornet has collected, under the auspices of the German Government, and has collated, statistics showing an alarming frequency of tuberculosis among nurses. His conclusions are published in the Philadelphia *Medical News*, and show that tuberculosis is nine times more frequent among them than among other classes. All infectious diseases also are more frequent among nurses until the fortieth year of life. The statistics therefore clearly demonstrate that the life chances of nurses do not compare favorably with those of other people. Death occurs among them at the average age of about thirty-six years — "an average shorter life than that of workmen exposed to the inhalation of injurious dust, by eight or ten years."

— At the annual meeting of the New Hampshire Medical Society, held at Concord, June 18, officers were elected as follows: President Dr. William Child, of New Hampton; vice-president, Dr. Lyman B. Howe, of Manchester; secretary, Dr. G. P. Conn, of Concord; treasurer, Dr. D. S. Adams, of Manchester; executive committee, Drs. C. R. Walker, of Concord; G. D. Towne, of Manchester, and J. K. Kimball, of Suncook.

— The South Bend, Ind., *Tribune* gravely states that "a child born recently near Clinton, Ind., and which lived but two hours, was granted before its death the gift of speech long enough to promulgate the following words, which were spoken as plainly and distinctly as a child 6 or 7 years old. It said: 'The present season's crops will be an entire failure, and the succeeding year the world will have reached that long-looked-for and predicted time — the end.' The truth of the above is vouched for by many of the citizens of that section of the country, and the more superstitious predict that it is the forerunner of some great calamity."

— The mental process whereby a medical expert, however honest he may be in original and even in final intention, becomes partisan in his testimony is well described as follows in a late address of Dr. Samuel B. Ward, of Albany, before the Medical Society of the State of New York: —

"The physician selected as an expert considers his case carefully; he reads up the various authorities, paying, of course, considerable attention to those whose views agree with his own, and mentally remarking what sensible men they were, while the impression formed of those who differ from him is not nearly so complimentary. He looks up the records of similar cases in medical journals, and finally goes on the stand well prepared to answer truthfully the questions previously arranged to be asked him on the direct examination. During this investigation of the case it is sometimes curious to observe how the expert's opinions will become strengthened in the direction of the side which he has espoused. Without any real additional arguments having been brought to light he will incline to give more and more weight to facts which seem to favor his view, and become more and more inclined to make light of, or even to ridicule, facts or opinions which militate against him. He often ends by being honestly persuaded that there ought to be no manner of doubt on points which are in reality very doubtful and which at the outset he willingly admitted so to be."

NEW YORK.

— A resolution has been adopted by the board of health directing Dr. Tracy, registrar of vital statistics, to make a daily report of all deaths which occur in tenement houses from pulmonary and intestinal tuberculosis and from tubercular meningitis, and to transmit the same to Dr. Cyrus Edson, chief of the Bureau of Contagious Diseases. Dr. Edson has also been directed to formulate a system of rules for the management of patients in tenement houses suffering from tuberculous diseases.

— Dentists looking out for a place in which to locate would do well to avoid, for the present at least, the 25th ward of Brooklyn. In this district of the city the increase in the population is said to have been quite remarkable during late years; but the number of dentists seems to have increased even more rapidly in proportion, so that competition is now very lively. Two years ago the regulation charge for extracting teeth was one dollar each. Competition compelled a reduction to fifty cents, and this rate was maintained until the 1889 spring graduations of the dental colleges took place, when the price was lowered to fifteen cents per tooth, or two for twenty-five cents.

Miscellany.

SLOW INCREASE OF POPULATION IN FRANCE.

At a recent session of *La Société d'Anthropologie de Paris* M. Chervin presented a communication upon the slow increase of population in France, considering in detail the various larger geographical regions, and endeavoring by comparison to determine the causes which thus hinder the French in the international world-progress. He gives an interesting mass of facts regarding climate and natality (*natalité*), yet, after all his comparison of data, concludes that the matter has to be undertaken anew, and carried to more particularized detail of study, having the examination of smaller geographical districts in view, before any reasonable origin can be assigned for this comparative decrease of inhabitants. Such an investigation he is disposed to undertake, the results of which he hopes to give to the society.

MAINE REGISTRATION BILL DECIDED NOT TO BE A LAW.

It will be remembered that on the 17th day of March, 1887, both branches of the Maine legislature passed to be enacted an Act entitled "An Act to Regulate the Practice of Medicine." This Act was signed by the President of the Senate and Speaker of the House on the forenoon of the same day. The Act was then presented to the governor for approval. Gov. Bodwell, soon after receiving the bill, signed it, and it was sent to the secretary of state and placed in the official custody of that officer as a bill which had become a law. The fact of the governor's approval was entered upon the books kept in the office of the secretary of state known as "Blotter" and "Register." In the afternoon of the same day (the 17th of March) the governor recalled the bill and drew his pen through his signature, and then caused the Act, with his line drawn through his signature, to be sent to the Senate, together with a paper stating his objections thereto. The Senate did not pass it over his objections.

In 1888, Stephen H. Weeks, as president of the Maine Medical Association, in the name of the attorney-general, and by his authority, petitioned the chief justice of the Supreme Court for a writ of mandamus against Oramandel Smith and Charles W. Tilden, the former secretary of state and the latter secretary of the Senate, commanding them to "restore said approved Act, entitled 'An Act to Regulate the Practice of Medicine,' to its place among the Acts of the State in the office of the secretary of state."

The contention of the petitioners was practically that the Act become a law when Gov. Bodwell signed it, and deposited it in the office of the secretary of state, and that his subsequent recall of it and erasure of his signature exceeded his power and did not invalidate the Act. The case was argued for the petitioners by the Hon. C. W. Goddard and Judge J. W. Symonds, and for the secretary of state and deputy secretary of the Senate by Attorney-General Orville D. Baker.

The decision of the court, which is very lengthy, has just been given. It denies the petition and declares that the Act is not a law.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 29, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption	Diarrhœal Diseases.	Whooping Cough.	Diph. and Croup.
New York	1,571,558	864	512	36.40	10.10	29.40	1.32	5.28
Philadelphia	1,040,245	493	257	22.40	11.60	16.80	.60	2.40
Chicago	830,000	224	117	25.20	12.10	10.80	.90	7.65
Brooklyn	814,505	514	362	38.76	7.22	31.16	1.91	3.04
Baltimore	500,343	221	134	40.95	6.30	40.00	.45	—
St. Louis	450,000	179	97	25.08	6.84	21.66	—	2.28
Boston	413,567	185	63	20.52	13.50	8.00	1.62	8.64
New Orleans	250,000	125	56	24.80	12.00	14.40	—	8.00
Cincinnati	225,000	136	—	27.38	6.66	7.35	—	6.66
Washington	225,000	136	76	28.86	5.92	22.94	.74	—
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	30	14	33.33	6.66	23.33	—	—
Charleston	60,145	—	—	—	—	—	—	—
Portland	40,000	8	1	—	25.00	—	—	—
Worcester	78,292	21	11	23.80	19.04	23.80	—	—
Lowell	71,518	44	30	53.68	12.20	51.24	—	2.44
Cambridge	65,552	20	9	45.00	20.00	30.00	—	15.00
Fall River	62,647	23	9	4.35	21.75	4.35	—	—
Lynn	53,334	20	—	—	15.00	—	—	—
Springfield	40,731	13	5	38.45	7.69	24.07	—	15.38
Lawrence	40,619	26	14	46.20	—	34.65	—	11.55
New Bedford	37,253	9	3	—	—	—	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	10	4	40.00	—	—	—	40.00
Brockton	28,813	10	1	10.00	40.00	—	—	10.00
Chelsea	28,167	9	—	33.33	11.11	—	11.11	22.22
Haverhill	26,058	13	6	29.76	—	29.76	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	7	—	—	42.84	—	—	—
Newton	21,553	5	—	20.00	20.00	—	—	—
Malden	19,774	10	2	20.00	10.00	10.00	—	10.00
Fitchburg	17,534	8	3	—	12.50	—	—	—
Waltham	17,332	8	2	12.50	12.50	—	—	—
Newburyport	13,875	4	1	25.00	25.00	—	—	25.00
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	6	5	33.33	—	—	—	16.66
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 3381; under five years of age 1794; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1055, consumption 331, acute lung diseases 203, diarrhœal diseases 766, diphtheria and croup 147, whooping-cough 32, measles 31, typhoid fever 23, scarlet fever 22, cerebro-spinal meningitis 16, malarial fever 14, erysipelas 3, small-pox (Chicago) one. From measles Cincinnati 13, New York 6, Philadelphia and Brooklyn 5 each, Chicago and Waltham 1 each. From typhoid fever, Philadelphia 5, Baltimore 4, Boston 3, New York, Chicago, Brooklyn and Washington 2 each, St. Louis, Cincinnati, and Newton 1 each. From scarlet fever, New York 7, Chicago and Baltimore 4 each, Philadelphia and Washington 2 each, Brooklyn St. Louis, and Nashville 1 each. From cerebro-spinal meningitis, Cincinnati 4, New York, Chicago, and Washington 3 each, Boston, Nashville, and Quincy 1 each. From malarial fever, Brooklyn 5, New Orleans 3, New York and Baltimore 2 each, Philadelphia and Nashville 1 each. From erysipelas, Chicago 2, Brooklyn 1.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending June 22nd, the death-rate was 16.7. Deaths reported 3055; infants under one year 757; acute diseases of the respiratory organs (London) 171, measles 115, diarrhœa 105, whooping-cough 76, scarlet fever 47, diphtheria 34, fever 22, small-pox (Manchester) 1.

The death-rates ranged from 9.9 in Brighton to 27.1 in Manchester; Birmingham 16.6; Blackburn 15.5; Hull 25.3; Leeds 21.9, Leicester 15.6; Liverpool 16.9; London 14.9; Nottingham 11.2: Portsmouth 11.0; Sheffield 17.7; Sunderland 18.3.

In Edinburgh 18.0; Glasgow 22.4; Dublin 18.6.

The meteorological record for the week ending June 29, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, June 29, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
June 23	30.16	65.0	76.0	56.0	74	67		70.0	W.	W.		18	8		C.	C.			.00
" 24	30.42	66.0	75.0	55.0	61	64		62.0	N. W.	S. E.		8	4		C.	H.			.00
" 25	30.43	64.0	76.0	57.0	69	63		66.0		S.			12		H.	O.			.00
" 26	30.26	68.0	81.0	60 0	77	91		84.0	S. E.	S.		5	12		O.	O.		0.10	T.
" 27	30.11	71.0	84.0	69 0	84	78		81.0	S.	S. W.		13	11		O.	O.		0.15	T.
" 28	30.16	74.0	80.0	67.0	84	84		81.0	W.	S.		6	6		F.	O.		0.20	T.
" 29	30.13	70.0	82.0	64.0	86	88		87.0							O.	C.		2.30	.11
Means for the Week																			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JUNE 29, 1889, TO JULY 5, 1889.

The leave of absence for one month granted Major J. K. Corson, Surgeon, by par. 2, S. O. 65, c. s. Department of the Columbia, is extended one month. Par. 1, S. O. 45, Headquarters Division of the Pacific, June 24, 1889.

Leave of absence for twenty-five days, to commence on or about July 2, 1889, is granted Captain A. R. Chapin, Assistant Surgeon, U. S. Army. Par. 6, S. O. 145, Division of the Atlantic, June 27, 1889.

Gibson, R. J., Captain and Assistant Surgeon, U. S. Army, reports arrival July 2, 1889, at Camp Lewis, Fisher's Island, N. Y., in compliance with par. 5, S. O. 133, Division of the Atlantic, which designated him as M. O. for the encampment (rifle practice) at Fisher's Island, N. Y.

By direction of the Secretary of War, leave of absence for two months is granted Captain George T. Beale, medical storekeeper. Par. 8, S. O. 148, A. G. O., June 27, 1889.

BOOKS AND PAMPHLETS RECEIVED.

The Physicians' Leisure Library. The Treatment of the Morphia Disease. By Erlenmeyer. Translated by E. P. Hurd, M.D. 1888.

Ueber Ichthyol-Behandlung des Erysipelas. Von Dr. Von Brunn (Lippspringe). Sonder-Abdruck. Berlin. Heft No. 5. Mai, 1889.

Beobachtungen über das Ichthyol nach dreijähriger Anwendung. Von Dr. von Hoffmann, Dirigent der Augenheilanstalt, und Dr. Lange, pract. Arzt in Baden-Baden. Sonder-Abdruck. Berlin. Heft No. 5. Mai, 1889.

Aus dem Russischen der Moskauer Medicinischen Rundschau. Von DDr. A. Biljeff, W. N. Sorokin, S. Preobrashensky, W. L. Shadkewitsch, J. Jelin. Separat-Abdruck. Berlin. 1889.

De la Lobeline dans la Therapeutique de L'Asthme. Memoire presenté au 1er Congrès Brésilien de Medecine et Chirurgie, et lu, devant le même Congrès, a la Seance du 15 Septembre, 1888. Par le Dr. Silva Nunes. Rio de Janeiro. 1889.

Papers read before the Medico-Legal Society of New York. From its organization. First series. Third illustrated edition. New York. New York Medico-Legal Association. 1889.

An Essay on Asphyxia (Apnœa). By George Johnson, M.D. F.R.C.P., etc. London: J. & A. Churchill. 1889.

Thirteenth Annual Report of the Sea-Shore Home for the Summer of 1888. Boston. 1889.

Medical and Surgical Reports of the City Hospital of the City of Boston. Fourth Series. Boston. 1889.

A Contribution to the study of Friedreich's Ataxia. With Exhibition of Cases. By J. P. Crosier Griffith, M.D., etc. Reprint.

The Old Hospital, and other Papers. By D. B. St. John Roosa, M.D., LL.D. Second revised and enlarged edition of "A Doctor's Suggestions." New York: William Wood & Co. 1889.

Morrow's Atlas of Venereal and Skin Diseases. William Wood & Co., New York. 1889. Nos. 14 and 15.

Transactions of the Medical Society of the State of New York for the year 1889. Published by the Society. 1889.

Transactions of the American Orthopædic Association. Vol. I. Published by the Association. 1889.

Darwinism: an Exposition of the Theory of Natural Selection, with some of its applications. By Alfred Russel Wallace, LL.D., F. L. S., etc. With map and illustrations. London: Macmillan & Co.; and New York. 1889.

Pathological Report, 1887–88, of the City of London Hospital for Diseases of the Chest, Victoria Park, E. By Sidney Martin, M.D. (Lond.), Assistant Physician to the Hospital, late Pathologist and Registrar. Printed for the Victoria Park Hospital. 1889.

A System of Obstetrics by American Authors. Edited by Barton Cooke Hirst, M.D., associate Professor of Obstetrics in the University of Pennsylvania, etc. Volume II. Illustrated with 221 engravings on wood. Philadelphia: Lea Brothers & Co. 1889.

Synopsis of Human Anatomy, being a complete compend for Anatomy, including the anatomy of the viscera, and numerous tables. By James K. Young, M.D., Instructor in Orthopedic Surgery, etc., in the University of Pennsylvania. Philadelphia. F. A. Davis Publisher. 1889.

Maladies de la Langue. Par le Dr. Henry T. Butlin, Chirurgien assistant et proffesseur de Chirurgie pratique et de Laryngologie à Saint-Barthalomew's Hospital. Traduit de l'Anglais par le Dr. Douglas Aigre, ancien interne des Hôpitaux de Paris. Paris: Aux Bureaux du Progrès Medical, 14 Rue des Carmes. 1889.

Manuel Pratique de la Garde-Malade et de L'Infirmière. Publié par le Dr. Bourneville, Medecin de Bicêtre, Directeur des Ecoles municipales d'Infirmières. Avec la collaboration de MM. Blondeau, de Boyer, Ed. Brissaud, Budin, P. Keraval, G. Manoury, Monod, Poirier, Ch. H. Petit Vendol, Pinon, P. Regnard, Sevestre, Sollier, et P. Yvon. La 4me edition revue et augmentée. Tome i.: Anatomie et Physiologie. Tome ii.: Administration et comptabilité hospitalière. Tome iii.: Pansements. Tome iv.: Femmes en couches; Soins à donner aux aliénés; Medicaments. Petit Dictionnaire. Tome v.: Hygiène. Paris: Aux Bureaux du Progrès Medical, 14 Rue des Carmes, Paris. 1889.

Original Articles.

CLINICAL OBSERVATIONS IN AURAL PRACTICE.[1]

BY J. ORNE GREEN, M.D.,
Clinical Professor of Otology in Harvard University.

MALIGNANT DISEASE OF THE EAR.

Case I. A woman, aged fifty-eight, was taken with pain in the left ear in the summer of 1887, which was soon followed by otorrhœa, and the whole history was at first the common one of purulent inflammation of the tympanum with perforation of the drum-membrane. No systematic treatment was followed, and the otorrhœa continued with occasional but slight pain. In the autumn the pain increased, the ear became sensitive on lying upon it, and in November slight œdema appeared, both in front, below, and behind the auricle, and paralysis of the facial nerve in all its branches occurred.

I saw her then for the first time, and found very marked œdema over the mastoid and a sensitive bone; slight œdema below and in front of the auricle, with slight redness of the skin. There was no fluctuation. The meatus was full of very thin muco-purulent matter, and, after cleansing, was found filled with exuberant granulations which concealed the deeper parts. The meatus was exquisitely sensitive, so that thorough exploration with the probe was impossible. The pain for a week or two had been very severe, and there was moderate fever, with a weak and slightly irregular pulse, by which the patient had been much reduced. The facial paralysis included all branches of the nerve and was almost complete. There was no family history to arouse suspicion. The deafness was total in that ear.

From the œdema and tenderness of the mastoid, the obstructions in the meatus, and the great pain, I advised an immediate opening of the mastoid and a thorough clearing out of the meatus to insure perfect cleansing and drainage. A few days after, the operation was done at the Massachusetts General Hospital. No pus was found beneath the periosteum, and after exposure of the bone the mastoid cells were opened in their extreme upper part with the gouge and hammer, the cortex of the bone being a little over one-eighth of an inch in thickness. The granulations in the meatus were removed by the snare, and the probe then detected a caries involving the whole tympanum and the deeper parts of the osseous meatus. With curved aural curettes in the meatus as much of this carious bone was removed as possible, and a free communication was established between the mastoid opening and the tympanum and meatus. A drainage-tube was inserted in the mastoid, the whole douched daily with carbolic solution, 1 : 60, and kept under an aseptic dressing. For three or four weeks the pain was greatly relieved and the fever disappeared entirely, but it was found that the caries was extending andseveral minute bits of necrosed cancellated structure were removed from the mastoid.

The subsequent history extends over a period of eight months: the pain gradually returned, of a dull grinding character, in the ear and over that side of the head; the discharge, never thoroughly purulent, became more sanious and offensive in spite of cleansing twice a day, and the bone very slowly disappeared in the discharge without any sequestra forming. At the end of four months the edges of the wound began to break down, and soon after exuberant granulations appeared on the anterior lip of the wound. These slowly increased till they reached a size of three inches in length, two in breadth, and two in thickness; at first smooth, they gradually became somewhat nodulated, and masses sloughed away frequently: in two or three spots they broke down, forming new openings into the mastoid cavity. Whenever examined with the probe the bone was felt to be very friable, the instrument being readily pushed directly into its structure. During the last two months the pain was frequently lancinating and referred chiefly to the region of the ear. Although complaint was made of the neck and left shoulder, no enlarged glands were ever discovered, or any cause for the pain in those regions.

About nine months after the operation, and fourteen months from the beginning of the aural disease, the patient died from exhaustion, which had steadily but almost imperceptibly been increasing for several months.

No microscopical examination was made at any time, for the extreme sensitiveness of the growth forbade any attempt to remove any portions of it.

Case II. A man, aged fifty-seven, of good family history, had suffered three years before from "nervous prostration," from which he had partially recovered. Early in the spring of 1888, from a cold, as he said, he had severe pain in the right ear, which lasted some days but passed away without otorrhœa. In April, a few weeks after this first attack, there was a recurrence of pain, with discharge, and in May a small growth was removed, as was said, from the floor of the meatus. The pain greatly increased after this, the discharge continued, and in July another growth, resembling a polypus, was removed from the meatus, although from what part could not be ascertained.

In August, when I first saw him, he was in an extremely nervous state, the pain was continuous and severe in the ear, and there was a temperature of 102° and a pulse of 120. Close to the auricle, both below and behind, there was great œdema of the skin but not marked tenderness of the mastoid bone. There was distinct fluctuation below the auricle, between the mastoid and lower jaw. The meatus was filled with fleshy masses which completely closed the passages and was exuding an abundant muco-sanious secretion. All of the inflamed parts were exquisitely sensitive to the touch. A minute drainage-tube was worked into the meatus, and immediately on reaching the deeper parts gave exit to a considerable amount of secretion, and pressure on the fluctuating swelling below brought out much more discharge, showing a free communication, and that this swelling was a gravitation abscess from the ear. A small rubber drainage-tube was kept in the meatus, through which the abscess was evacuated twice a day, and the whole ear cleansed by carbolic solution. After a few days of this treatment the febrile reaction entirely subsided and there was less pain; by inspection and by the probe, however, it was found that the whole osseous meatus and tympanum were denuded and carious. The external œdema diminished but did not disappear.

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[1] Read before the Boston Society for Medical Observation, March 4, 1889.

The patient was kept under observation for about two weeks and then returned home to have systematic cleansing and drainage carried out till either a sequestrum should form which could be removed, or further developments occur. One symptom strongly roused my suspicions during the period in which I had him under observation: this was a slow but constant melting away of the soft structures of the meatus, so that when he left the edges of the ulceration had extended from the osseous meatus nearly to the auricle.

The subsequent history is brief. In my absence Dr. George W. Leland was called to see him, and furnishes the remaining history. He found the meatus again filled with flesh-like growths and the gravitation abscess so filled that it was opened: the caries still existed. The removal of the growths and opening of the abscess gave much relief to the pain. Examination of the urine showed desquamative nephritis. Complete paralysis of the right facial existed at this time, and the tissues at the seat of incision showed a yellowish infiltration. Dr. W. W. Gannett reported as follows on the growth which was removed: "It showed a superficial layer of many-layered flat epithelium, in which, and extending below, were hairs in hair-follicles. The underlying tissue, composing all the rest of the part removed, was made up of small round cells embedded in a stroma of connective tissue. There was no uniformity in the stroma, the amount of fibrous tissue in parts being small, in other parts abundant and in bundles; the distribution of the fibres was irregular. In the tissue were several small arteries.

"We have to do here with a tissue belonging to the connective tissue series. So far as the microscopic examination goes it might be simply a chronic inflammatory connective tissue. Again, it may form part of a sarcoma. The distinction between the two can only be made by determining the size of the remaining portion. If considerable it is a sarcoma; if slight it is probably of inflammatory origin.

"So far as the evidence to be derived from the small bit is concerned, it is rather more in favor of an inflammatory product than a sarcoma."

Ten days after, Dr. Leland found that the cavity at the bottom of the canal was much enlarged, the walls having disintegrated. There was no return of pain or of new growths.

Some ten days later the cavity of the middle ear had become very much larger, but no sequestrum could be found. Weakness was increasing, and œdema and ascites showed themselves. Three weeks after this he died from exhaustion, without new symptoms, about seven months after the beginning of the ear-disease.

After death, the nurse reported that a mass of cotton as large as her fist was required to fill the meatus, showing that a very large cavity had been excavated by the disease.

Case III. A woman aged thirty-one passed into my hands upon going on duty at the Massachusetts Eye and Ear Infirmary on November 1. She was a stout, well-nourished woman, in whom an otorrhœa on the left side had existed from three years of age, undoubtedly a chronic, purulent inflammation of the tympanum. The summer before she had applied at the infirmary for acute mastoid inflammation, and a subperiosteal abscess was incised by Dr. Jack. The wound never healed, and in September, as it was found that there was a fistula through the bone and caries within the mastoid, a second operation was done by Dr. Jack and the carious bone curetted.

When I first saw her there were two small openings in the skin over the mastoid, and the meatus was closed by a general swelling, not œdematous, of all its walls. There was an abundant sanious discharge from the mastoid openings and from the meatus. The left cheek was much swollen and œdematous. A probe showed that nearly the whole of the petrous portion of the temporal bone had disappeared; the probe passed directly inwards from the mastoid opening for fully two inches, and forwards and inwards for fully three inches, without any bone being felt; backwards the edges of the carious bone could be felt. Deep pressure showed a circular depression over the malar bone three-fourths of an inch in diameter and at the same time forced secretion from the meatus, showing a communication with the ear.

There was scarcely any pain except after manipulations of the inflamed parts. Injections passed freely from the meatus out of the mastoid openings.

Some days after, slight chills, fever, pain in the ear, and complaint of weakness showed themselves, but passed away in a few days under careful evacuation and cleansing of the diseased cavity. A firm swelling then appeared close to the auricle below and behind, not painful and not sensitive. This increased in size, broke down in two spots behind the auricle, and the edges of the openings became rapidly irregular. In the course of two weeks this swelling extended from the lobule backwards for one inch, upwards for one inch, and forwards for another inch, and showed distinct nodules, four or five in number. No enlarged glands could be discovered. The deafness on that side was total. Despairing of relief the patient left for home. Two months after she was seen by one of the attendants of the infirmary, who reported that the tumor had more than doubled in size. She died February 28th.

The diagnosis of malignant disease in all of these cases was made from the clinical history. I regret extremely that in none of them was it possible to make any microscopic examinations, and especially that it was not possible to get a thorough examination of the petrous bones to decide on the pathological variety of the disease and its place of origin.

Notwithstanding, however, the lack of microscopical confirmation of the diagnosis, in Cases I. and III., the development of the external tumors late in the disease goes very far to confirm my opinion of its malignant nature, these growths presenting all of the macroscopical characters of malignancy in rapid growth, nodulation, and rapid breaking down. The second case, it is true, did not develop any growth externally; but the rapid ulceration of the soft structures of the meatus without any apparent cause, such as pressure or retention of pus, certainly suggests malignant disease. This patient. it will be noticed, died much earlier in the disease than the others, and never reached the extensive destruction of the bone which was found in both the other cases and which in both preceded the external growths.

All three cases were peculiar in their course, and were early recognized as different from the ordinary cases of caries. It is not easy to define all of these little peculiarities. The characteristic which particularly struck me was the rapid and extensive destruction of the bone by complete disintegration without the formation of any sequestra, and this in a bone containing a large amount of cancellated structure, which usually separates very readily when inflamed for any length of time.

Whether the original disease was malignant in Cases I. and II., or whether the malignancy was a subsequent development upon a simple purulent inflammation of the tympanum, must remain undecided. In Case III., however, there can be no doubt that the malignancy was of recent origin, as the otorrhœa had existed for twenty-four years.

In connection with these cases I show a drawing of a round-celled sarcoma of the ear, the case having been published in the *Archives of Otology* in 1884. In this case also the malignant disease developed upon a purulent inflammation of the tympanum of seventeen years' duration. The drawing was taken some two months before death; the growth afterwards increased enormously, and at death was nearly half as large as the patient's head.

All of the three cases reported offer demonstrations of the difficulty of diagnosticating malignant disease within the tympanum or bone in its earlier stages; and now, in putting together and reviewing them, I see nothing except the clinical history, as the case proceeds, which can give us a clue to the true malignant nature of the process. The character of the discharge, the exquisite sensitiveness in two of the three cases, the extensive and general infiltration of the tissues about the meatus and the mastoid, might all of them arouse suspicions, but none of them are conclusive evidence of malignancy. Finally, I do not myself believe that microscopical examination of the growths from the meatus would be at all satisfactory, for I have no doubt that many, if not all, of these are simple inflammatory granulation-tissue, and do not represent the disease, which I believe is seated in the bone itself.

PAROTID TUMORS DUE TO INFLAMMATION OF THE TYMPANUM.

Case I. A man aged forty-seven applied to me for deafness and an otorrhœa of two years' duration and facial paralysis of two months' duration. The facial paralysis was preceded by pain in the ear of three days' duration, and had gradually increased till it was almost complete. Just in front of the auricle was a firm, oval, freely movable tumor of the size of a filbert, which the patient said appeared quite suddenly soon after the pain in the ear and with the facial paralysis. It was painless and not sensitive on pressure. So fully was he impressed with the idea that the paralysis and the tumor were connected that I advised his seeing another surgeon, who pronounced the tumor a parotid tumor and independent both of the paralysis and the ear-disease.

Examination of the ear showed a purulent inflammation of the tympanum, with a loss of the lower half of the drum-membrane and very great swelling of the mucous membrane over the promontory. Two or three applications to the tympanic cavity by means of the tympanic syringe reduced the swelling, and it was then found that the edge of the promontory, over a surface somewhat larger than a pin's head, was carious. This was cleaned off by a minute curette and treated by iodoform. At the end of six weeks the tympanic inflammation had subsided, the bone had healed, and there was no discharge. The tumor, which had remained throughout the treatment just as when first seen, within five days after the cessation of the tympanic discharge disappeared and never returned, although one year afterwards, accompanying the development of a disease of the lungs, probably phthisical, there was a slight attack of inflammation of the same tympanum.

The facial paralysis gradually improved, and at the end of a year no deformity of the face was visible, although it was impossible for him to whistle and there was still a feeling of numbness.

This was the first case in which my attention was called to a possible connection between some of these tumors and the ear. I was able afterwards to recall two or three instances where patients had consulted me about similar tumors, when I saw them with reference to ear-disease, but I had always pronounced the tumors independent of the ear.

Case II. Some two years after the above observation, a man aged about twenty-five appeared at the City Hospital with a profuse, offensive, chronic suppuration of the tympanum of several years' duration. About a quarter of an inch in front of the tragus was a firm oval tumor, freely movable, about the size of an almond, which he said had existed for three months only. It was exactly similar in character to the first, above described, being smooth, painless, insensitive, without redness or fluctuation.

The ear was treated by antiseptic cleansing and by applications to the tympanum. and within two weeks, as the offensive odor and the amount of discharge diminished, the tumor entirely disappeared. Unfortunately the patient ceased attendance as soon as somewhat relieved, and I know nothing further of the case.

Case III. A man aged fifty-seven applied to me on account of deafness and a parotid tumor which he associated together. This was some months after the last case.

The history was one of pain in the left ear about a year before, followed by discharge which continued for some weeks, since which time there had been some deafness and subjective noises. During the discharge from the ear the parotid tumor had developed, and had since remained without change and without symptoms.

Examination of the ear showed a drum-membrane thickened, retracted, and with a healed perforation in its posterior segment, the appearances undoubtedly due to a purulent inflammation of the tympanum at the time of his pain and otorrhœa. In the same spot as in the preceding cases was a tumor the size of a hazel-nut, presenting the same characteristics already described in the other cases.

As the ear in its present condition offered no signs of irritation, and as no change in the tumor had followed the healing of the ear months before, I could only advise the removal of the growth. His intelligent and positive account of the development of the growth at the time of the ear-disease, with my experience in the other two cases, led me to think that in this case we had to deal with a permanent hyperplasia which could only be gotten rid of by removal.

My presumption is that in all of these cases I had to deal with an enlarged lymph-gland in direct connection with the tympanum, although, as far as I know, anatomy has not, as yet, demonstrated this connection. The relief of the tympanic inflammation apparently removed the source of the glandular irritation and allowed the swollen gland to resume its normal condition. The cases are too few to prove this conclusively; but I have thought it worth while to direct attention to them in the hope that further observations may be directed to the possible connection between some, at least, of these small parotid tumors and tympanic suppurations.

Occasionally, during the last few years, I have found, with suppurations of the tympanum, a decidedly tender spot in the exact situation in which these tumors lie, but without any swelling being appreciable. This, I think, is probably due to a slight irritation of the same gland, not enough, however, to produce a perceptible enlargement. The glands which are usually enlarged with tympanic suppuration are those below the auricle, along the anterior edge of the sterno-cleido-mastoid muscle.

A CASE OF TUBERCULOSIS OF THE PERICARDIUM AND BRONCHIAL LYMPH GLANDS.

BY CHARLES C. TOWER, M.D., SOUTH WEYMOUTH

MR. C. S. F. was a native of Canada, and for forty-eight years a resident of Weymouth, Mass. He was sixty-seven years of age, married, of Anglo-Saxon race, light complexion, florid countenance, and nervous temperament. He was six feet in stature, erect in figure, and his average weight was one hundred and eighty-five pounds. He followed the occupation of bootmaker up to fourteen years ago, when, his health being poor, he left the shop and the boot business, and became a man of all work, chiefly farmer.

On his mother's side his family history was consumptive, his mother and four maternal aunts having died of phthisis. Two sisters also died of this disease. All of these relatives died in the twenties or thirties. Of two brothers whose death preceded his, neither died of consumption, the age of one being forty, and that of the other unknown. One brother and one sister still survive him, the former in his seventy-third year, and the latter in her sixtieth, and both in good health. On the father's side there is no consumption.

Mr. F.'s general state of health was considered to be fairly good. He usually ate and slept well, and he was strong and free from indications of constitutional disease, except that when a young man of twenty he had, on his own statement, a bad cough attended with loss of appetite and strength, and was regarded by his friends to be in consumption. During my acquaintance with him, extending over a period of twenty-nine years, I recall attendance upon him for several ailments, which go to show that his health was not what may be termed vigorous. Some eighteen years ago he complained of a feeling of weakness and discomfort in the left hypochondrium, which lasted for a period of two or three years, and which on examination of the case appeared to be a muscular strain, the result of heavy lifting. He was also subject to gastric disorders, and suffered considerably from palpitation. The heart was repeatedly examined, but no organic disease detected, although there was observed an occasional intermittency of the pulse, which manifested itself throughout the remainder of his life. He was also troubled for a considerable period with fissure of the rectum, which finally healed of itself.

In 1876 he was confined to bed a couple of weeks with an attack of epididymitis following the mumps. Atrophy of the testicle supervened. At a later period he had rheumatic inflammation of the shoulder-joint, which lasted over a year. Early in November, 1887, after sitting during religious services in a warm church and then going into a cool vestry, he was seized with a fainting fit, and was not restored to consciousness for nearly an hour.

The last illness was developed after special exposure on Christmas night, a year ago. The attack commenced with hoarseness, succeeded later by cough, and the symptoms of acute bronchitis, for which in the latter part of January I was called in. Nothing peculiar in the nature of the cough impressed itself on my memory. The patient, at this my first visit, was about house, and even attending to his out-of-doors duties. I saw him a week later, when he was obliged to take to bed on account of an attack of acute rheumatism, which lasted throughout the month of February, and continued somewhat into March. This attack was manifested by the usual symptoms of the disease, viz., fever, swelling and pain of joints, copious perspiration, and the uric acid diathesis, and it was treated in the usual manner. The cough, however, showed no abatement but still continued, and demanded treatment for the comfort of the patient.

In April the condition was one of marked debility. Night sweats at this period were quite pronounced. The cough was harassing, disturbing the sleep by night and exhausting his strength by day. The pulse was weak and considerably accelerated, and the temperature elevated two to three degrees, especially towards evening. The action of the heart was at this time very feeble, and there seemed to be more prostration of the system than could be accounted for by his sickness, although the alkaline treatment employed to eliminate the uric acid from his system had undoubtedly in a measure impoverished the blood, as shown by the marked pallor of the surface of the body, and by the clammy state of the skin. But the most discouraging feature of the case was the persistency of the cough, which was dry and paroxysmal, and the cause of which I had failed to demonstrate to my entire satisfaction, although it appeared to be due to reflex irritation. The seat of this irritation was referred by the patient to the larynx, and he began at this time to complain of a feeling of distress, referred to the sternal and cardiac region. Repeated careful stethoscopic examinations of the thorax failed to reveal serious disease of lungs or heart. There was good resonance on percussion over both lungs, and the respiratory murmur was clear and full, except as modified by a few muco-crepitant râles, which were most noticeable towards the base of right lung. The cardiac dulness was normal, and the heart-sounds not unusual in character, except feeble and distant, with possibly an occasional souffle, which condition was attributed to the rheumatic attack. The pharynx at this stage of the disease presented nothing remarkable, possibly slight congestion.

There being no improvement in the character of the symptoms during the next three weeks, the desire was expressed by the patient to enter the Massachusetts General Hospital for examination and treatment.

Arrangements having been made for the occupancy of a private room, he entered the hospital May 17. A statement of his condition, as copied in the case-book from a letter written by myself, was that it was one of debility, as indicated by failure in appetite, night sweats, loss in weight, and slight elevation in temperature. The most troublesome symptom was cough, which was described as spasmodic, and attended with very little expectoration. The record further says, "The patient complains of a tickling sensation in throat, which is excited by a deep inspiration or by speaking loud. Cannot lie on right side because of pain in front of right chest when in that position. Has dull, heavy pain in sternal region. Says when he swallows "the food causes pain all the way down to the stomach." Has to pass urine frequently. Appetite poor. Bowels regular. Examination: — Large man, somewhat emaciated. Tongue moist, clean. Examination of throat and nares by Dr. Langmaid shows nothing abnormal whatever. Good resonance over both lungs. Respiration everywhere vesicular. Over lower right back and axillary region a very few medium and fine moist râles. Heart apex in normal position. Sounds clear, but rather feeble. Abdomen normal. Pulse weak and soft.

May 18. Urine normal, acid; specific gravity, 1018. No albumen. Sediment contains considerable urates.

May 19. Patient is quite comfortable when up about the wards, but on lying down cough is troublesome. Complains of soreness in epigastrium and sternal region.

May 21. Has very little trouble from cough, but was nauseated for a time.

May 22. Appetite poor. Complains of pain and soreness across upper part of abdomen and in sternal region.

May 23. Patient discharged at his own request.

From this date the case went on with very little change in respect of the cough and the præcordial distress, except that as the weeks went by and the warm weather came on he took more exercise in the open air and his general condition somewhat improved. The night sweats entirely disappeared in the month of July, and his appetite and strength in a measure returned. The cough, however, did not improve, but on the other hand was more and more aggravated by the dorsal position, compelling him to lie with the shoulders considerably elevated. At this time he rode out daily and took short walks in the open air, so that his countenance became more natural in color. It was, however, always clear and fresh looking, and did not present a cachectic look.

In August the case was allowed to take its course to a large extent independent of drug treatment, until in the latter part of the month it came under the management of Dr. F. F. Forsaith, of Weymouth. He first saw and examined the patient at his office after he had taken a morning ride of three miles from his home. "He gave signs at that time," according to Dr. F.'s statement, "of great weakness, and was hardly able to support himself. He was very much emaciated, and presented the appearance of having within a recent period grown prematurely old. His appetite was reported as poor, and his digestion not good. He was a little constipated. There was present an incessant, harrowing cough.

Examination: — The area of dulness over hepatic region considerably enlarged, indicating an engorgement or hypertrophy of liver. The tongue was somewhat coated, especially at the base. There was no jaundice observed. The lungs on percussion were pretty clear. There was an area some two by three inches in extent, situated just to the right of the sternum and opposite the cartilages of second and third ribs, which was unusually resonant. There was no fullness in that location at that time, but at a later period the right anterior and middle portion of chest became unusually prominent. The lungs were pretty free from râles. They were more noticeable over region of right lung than left, and increased from apex towards base. While there was no sign of valvular disease of heart, its action was feeble and unsatisfactory. There was no increased area of cardiac dulness, and no displacement of that organ.

After a few weeks dulness was apparent at lower part of thorax on both sides, and the stethoscope showed a deficiency of the respiratory murmur, giving the idea of an accumulation of fluid. Early in September a soft swelling began to show itself over upper part of sternum, extending across that bone to the front of right chest in the location previously observed to be hyper-resonant. This tumor gradually increased in size, was painless, and to the touch appeared to contain fluid. Dr. F. is not aware that there was at any time any unusual cardiac dulness, neither was there any evidence of disease of the lung tissue. The temperature ranged from 101° to 103° and did not indicate inflammatory action. There was no evidence of the existence of rheumatism while under his observation, but some little trouble in urination was noted. The patient when first seen by him could lie down flat, but the cough was increased by so doing. As the case progressed he was obliged to have his shoulders more and more elevated in bed. Œdema of the feet and legs was noticed early in October, and continued till the close of life.

The case came into my hands a second time in the latter part of October, when Dr. Forsaith met me in consultation. The œdema had considerably increased, and marked dulness existed over base of thorax behind. The pulse was very small and weak, and from 90 to 100 in frequency. The respiration was also considerably accelerated. The position taken while in bed was bolt upright, and towards the last a support was placed in front for him to lean forward and rest his head upon. Any attempt at this time to lie on his back produced increased distress and aggravated the cough. The tumor already described as occupying the upper part of sternum and right front of thorax continued in much the same condition. There was good resonance over it, and the respiratory sounds were distinctly heard through it. Consequently there was no indication of the existence of aneurism.

About the 1st of November the patient was seen by Dr. W. C. B. Fifield, who aspirated the tumor with a small trocar. The fluid withdrawn was of the nature of bloody serum, and under the microscope showed no cancer cells. The case was, however, regarded as one of malignant disease, and no further treatment was advised.

Death occurred November 22, 1888. the mind remaining clear almost to the last.

At the autopsy, performed on November 23, the external tumor was found to contain about two fluid ounces of thick pus, which lay between the integument and the periosteum of the manubrium, burrowing between the cartilages of the first and second ribs of right thorax, and extending on under side of sternum about half-way across, but nowhere laying bare the bone. The abscess wall was adherent to the apex of right lung, but did not penetrate its substance. The upper lobe of left lung was friable and easily torn in separating the pleuritic adhesions to wall of thorax. The interior mediastinum, the pericardium, heart, pleuræ, and all the tissues underlying the sternum were involved in one mass of disease, and were sent to Prof. Fitz for examination.

Dr. R. H. Fitz reported, in regard to autopsy, that the pericardial cavity was obliterated by firm adhesions. Numerous cheesy plates and nodules, the largest perhaps three-fourths of an inch in the largest diameter and one-fifth of an inch in thickness, were found intimately connected with the parietal and visceral layers. Those of the substernal layer were continuous with similar nodules in the anterior mediastinum, the tissues of which were generally thickened. Small gray and opaque granules were also found in the pericardium.

The lymph-glands at the tracheal bifurcation formed a solid mass nearly as large as the fist. On section these glands were enlarged and cheesy, often softened into curd-like material.

The appearances were characteristic of a chronic tuberculosis of the pericardium and bronchial lymphatic glands. The former was probably the result of the latter, and had apparently extended to the tissues of the anterior mediastinum.

— The Amoskeag corporation of Manchester, N. H., has lately authorized the vaccination of its 8000 operatives at its own expense.

REPORT ON PROGRESS IN ORTHOPEDIC SURGERY.[1]

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

PARALYTIC DEFORMITY OF THE FOOT.

Fisher[22] has given a very full and able description of the paralytic deformities of the foot, and has classified them with reference to the degree of distortion in such a way as to emphasize the mode of occurrence.

Talipes arcuatus.—The description of this very closely applies to Schaffer's non-deforming club-foot, the abnormal condition consisting in an increase in the height of the arch. This he considers results during the period of slight paralysis, as after scarlet fever, from the slight contraction of the plantar fascia; that later, as growth proceeds, there is a want of proper accommodation of the contracted parts, and an arching is thus brought about.

An aggravated condition of arcuatus constitutes a *talipes plantaris*, and this forms a link to equinus. The etiological conditions are the same as in arcuatus, but more severe, the extensors of the toes and tibialis anticus being particularly affected. In addition to the arching, the anterior part of the foot is depressed below its normal level, and bands of contracted tissue are found to draw this portion downward and backward.

Of *talipes equinus* three forms are described. The first results from a muscular condition similar to that in *plantaris*, and consists of a bending of the part of the foot anterior to the os calcis at a sharp angle. The distortion is maintained by the shortened condition of the ligaments of the sole and the short flexor muscles. Owing to the downward and backward dislocation of the cuboid and scaphoid bones, the head of the astragalus projects on the dorsum. Another, but less common form, more nearly resembles the spastic equinus, and consists of a flexion of the whole foot at the ankle-joint. Besides these two, a combination is sometimes met with and consists of a flexion of the foot with also a depression of the anterior portion, due to the imperfect action of muscles of this part. In some cases this condition becomes extreme. In the treatment of this combined form the shape of the foot should first be restored, and, later, tenotomy of the tendo Achillis.

The *varus* varieties he describes as the result of a paralysis affecting the extensors of the toes, but in which the tibialis anticus retains its integrity in whole or in part. The first degree of this deformity closely resembles a slight equinus, but in this the depression of the fore-foot is accompanied by slight inversion. With still greater deformity there is more marked contraction of the sole, and the front of the foot is rotated as well as inverted; only the outer metatarsals touch the ground, and the inner border of the foot is so raised that the great and second toes touch only on their tips. The heel is somewhat raised, and this deformity, in this respect as well as in the contraction of the sole, resembles some forms of equinus.

The next stage of this paralytic deformity resembles the usual form of equinus varus. There is rotation at the ankle and transverse tarsal joints, and also a considerable amount of inversion. The bearing surface is on the outer border of the foot only, and there is a sulcus running antero-posteriorly along the front part of the sole, showing that the metatarsal bones are abnormally close. The heel is raised, and the toes are drawn upward and are claw-shaped. The deformity shows that a distortion resulting from an infantile paralysis may have the characteristics of the congenital form. Later in life aggravated conditions of the above are met with. For treatment he states: "The reduction of deformity in a case of advanced paralytic varus must be proceeded with in three stages: First, the inversion of the foot upon the leg must be removed; next, the distortion of the foot itself must be proceeded with; finally, having brought the case to one of simple equinus, with elevation of the heel, the usual course of treatment for such a condition is followed."

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[1] Concluded from page 37.

[22] Lancet, 1889, i. 112, 165, and 214.

Another form of the paralytic varus is due to "right-angled contraction of the tendo Achillis." When raised from the ground there is merely a "state of flaccid extension, with slight contraction of the sole." When, however, the weight is borne on the foot, the heel is elevated; the foot is inverted and rotated so that the anterior part of the outer border is alone in contact with the ground." In these cases there is always marked paresis of the extensors of the toes and the peronei. In the act of walking the lateral displacement compensates for the want of flexion, and the use of the limb with the foot in this position tends to increase the deformity.

Of the *valgus* three varieties are described: One is due to a "right-angled contraction of the tendo Achillis," as in varus. The distortion is produced by standing on the foot, the loss of flexion being compensated by the rotation and eversion, which is brought about by the stronger action of the everting muscles.

A second variety results from a slight shortening of the tendo Achillis, and closely resembles "splay foot." There has been slight impairment of the anterior muscles, and the extensors have remained permanently shortened. The limited flexion at the ankle-joint is attended by an abnormal amount of motion at the medio-tarsal joint, which becomes weakened by the constant strain.

The third variety consists of a simple eversion of the foot on the leg, resulting from paralysis of the tibialis anticus and posticus. A light degree of this deformity, due to weakness of the inverting muscles, is frequently seen in children, but severe grades seldom occur before twelve or fourteen years.

The *calcaneus* is very seldom seen, and produces the least disability. "The muscular disturbance which precedes the development of this distortion consists in great loss of contractile power of the posterior muscles of the leg, with only slight weakening of the flexors (extensors ?) of the foot. The power of extending the foot is extremely feeble or is altogether wanting, so that the heel becomes considerably depressed; the anterior muscles by their over-action increase the depression of the heel, and also distort the foot itself by drawing up that portion of it in front of the transverse tarsal joint." The plantar fascia becomes contracted and adds to the deformity. The treatment is not very satisfactory, the two methods which have given the best results being excision of a portion of the tendo Achillis, and the division of the plantar fascia; of the latter he speaks more favorably.

TORTICOLLIS.

Auvard[23] reports a case of congenital torticollis, which, considering the lack of accurate knowledge of the pathological conditions at the time of birth in this class of cases, is a valuable contribution to the knowledge of this disease. This case is of more value as the child was still-born, and therefore the condition must have existed *in utero*, and also as a careful autopsy was made. The infant was the seventh, and there was no history of any value. The delivery was physiological, although the presentation was unusual. The head was drawn toward the left shoulder, and the face raised and turned to the right. The attempt to correct this deformity was arrested by a tense subcutaneous band. In other respects the child was well formed. The autopsy disclosed the following: About the posterior fontanelle there was overlapping of the cranial bones, the left parietal over the right, and the left parietal over, and the right under, the occipital. These were not reducible. After section of the insertion of the sterno-mastoid and trapezius, the deformity could be partly overcome. In cutting this a considerable resistance was encountered, as in fibrous tissue. Complete rectification did not take place until division of the interspinous and supraspinous ligaments. No abnormal condition of the vertebræ was found, and there was no compression of the cord. The brain was normal. As to the etiology, whether a result of a nervous influence or a primary muscular lesion, Auvard makes no attempt to prove. He has found no reported analogous case.

HARE-LIP AND CLEFT PALATE.

Clement Lucas[24] calls attention to a point which he thinks has never been described, viz., that a congenital absence of an upper lateral incisor may foretell the probability of cleft palate and hare-lip in a succeeding generation. Three illustrations are cited,— two in which the absence of the tooth repeated itself in the children, and one in which the absence of the upper incisor in the mother was associated with hare-lip and cleft palate in the infant. He considers the conditions analogous, showing a tendency to an arrest of development in the same direction, and concludes the following deduction to be irrefragable: "that the absence of a lateral upper incisor tooth resulting from an arrest of development is to be regarded as a malformation closely related to hare-lip and cleft palate, and capable of transmitting each or both of these deformities to a succeeding generation."

TREATMENT OF SPINAL CARIES.

Charles F. Stillman[25] describes a point in the construction of spinal support which he says is original with him and new in orthopædic surgery.

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[23] Archiv de Tocologie, Aug., 1888, 494.
[24] Trans. Clin. Soc. Lond., 1888, xxi. 64.
[25] N. Y. Med. J., Oct. 27, 1888, 473.

It consists in making continual elastic pressure over the site of disease and deformity. In this are two strips of metal, thin enough to exert a spring action, surmounted by elliptical padded plates which are opposed to the site of disease; these uprights are secured to the pelvic bend, and their angle of adjustment so regulated by a ratchet that when the uprights of the brace are in place a varying amount of pressure may be exerted. The brace is held in position by the ordinary method of anterior support from the chest and abdomen.

When the disease is low in the dorsal or in the lumbar region, the uprights would be too short. They may be attached to the upper instead of the lower portions. In applying the apparatus the child is laid upon a table with the head and shoulders over the edge, and as they descend a partial extension of the spine occurs, and a tendency to obliterate the knuckle.

The tendency of the disease is to curve the body forward, and the force of this treatment is to counteract this tendency.

CHRONIC JOINT DISEASE AND CONSTITUTIONAL TREATMENT.

Gibney,[26] in view of the well-recognized opinion of the tubercular nature of the usual forms of spine, hip, and knee disease, considers the constitutional treatment one of importance, as in tubercular processes elsewhere, as in the lungs, although not to exclusion of local treatment. The constitutional treatment he has had opportunity to see well tried, and its value is not possible to estimate.

CONGENITAL DEFORMITY.

Raven[27] reports a rare case of congenital deformity of giant growth of the thumb and index finger of right hand. The increase in size involved both bone and soft parts. There was also a distortion to the ulnar side of the distal end of the index finger. The muscles of the ball of the thumb are large but soft, but the strength of the two members is diminished, and they are liable to be numb. The muscular development of the right arm is greater than left; otherwise there is no abnormality. No heredity. The patient, a young woman.

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EXTERNAL URETHROTOMY FOR TRAUMATIC STRICTURE COMPLICATED WITH EXTENSIVE FALSE PASSAGE.

BY G. W. PERKINS, M.D.,

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A. B. C., American, twenty-four years old, single, and a freight brakeman, was caught, January 5, 1889, between a box-car and an engine, and severely squeezed antero-posteriorly across upper part of left thigh and left lower lumbar region. He was picked up suffering much from pain and shock, and soon had hæmorrhage from the meatus. Some hours afterward was catheterized with rigid metal instrument, which caused him great pain and brought only a little "pure blood." The doctor told him his "bladder had burst."

After this, till January 8th, a soft-rubber catheter was used two or three times in twenty-four hours, withdrawing from a half-pint to one pint of bloody urine each time. January 8th passed, himself, about a pint of nearly normal urine. Had moderate abdominal distention and much pain for first few days, but only slight rise of temperature and pulse.

Symptoms pointed to fracture of pelvis, but at first no positive evidence in the way of crepitus or increased mobility could be detected, either externally or through the rectum. After a few days an induration appeared in perineum, on left side, which remained for several weeks, but finally resolved without opening externally. Two or three weeks after injury, rectal examination showed thickening of left pubic ramus due to callus.

Patient improved slowly but constantly, and was walking about in six or eight weeks.

Symptoms of stricture developed very rapidly, and examination of the urethra about April 1st showed tight stricture six inches from meatus, through which I could get nothing larger than a No. 1 English gum-elastic catheter (about No. 6 French), and this evidently by accident or good luck only, as I could never afterward pass any instrument at all through into the bladder, though I tried certainly a dozen times, over a period of three weeks, with bougies of every kind. Patient passed a stream about size of No. 6 French, which was constantly getting smaller.

I advised a perineal operation, and patient consented. April 24th, etherized with Drs. Carnohan and Armstrong assisting, and put in lithotomy position; large sound passed down to the obstruction and held accurately in median plane of body and the canal opened near its tip by the usual median incision. A loop of silk was passed through each edge of the divided passage, and the anterior angle of the wound held open. Many small openings appeared on sides and at the end, and careful attempts were made, by probing, to pass soft and rigid fine instruments through these into the bladder, and by pressure on the bladder to force out urine to indicate the true opening; could neither get through, nor force out a drop of urine. The patient's bladder could hold but a few ounces, and he had not been able to retain any urine for some hours before operation, as ordered.

After nearly two hours spent in trying to find the passage, decided to postpone attempt to another day, when the parts were free from blood, rather than do a Cock's operation, which would have been very uncertain with bladder nearly empty, and moreover was not imperative to relieve retention from obstruction with extravasation. Drainage-tube, carbolic irrigation, and antiseptic dressing. Rallied well and very little discomfort; at 12 P.M. passed about a half-pint of clear urine, *exactly same as before operation, through meatus,* apparently not a drop through perineum. During 25th passed about a half-pint two or three times, wholly through meatus.

It was evident that, 1, the opening through which the urine came was *anterior* to the incision; 2, that the incision had either been made into a false passage which occupied the normal position of the urethra, or the urine was coming through a false passage which opened into the urethra anterior to the obstruction. Acting on this hint I, with the help of my colleagues, etherized the patient again April 26th, previously putting a ligature on the penis to retain the urine, introduced sound as before, bringing it out through perineal wound, holding its edges open with loops of silk, then cut with scissors, one-fourth inch at a time, along the sound as a guide, through all the tissues from the floor of the passage through the skin, and in direction from behind forwards. Not till I had gone distance of fully an inch and a half anterior to the cul-de-sac did an opening appear on the roof of the passage, into which I managed with great difficulty to pass, apparently through a sinuous track, a No. 5 French, conical, soft, black bougie. This was hugged so tightly that there was no room to pass along it a metallic guide, and I pushed a scalpel along its side, through a dense gristly substance, for one inch before urine flowed, dividing freely enough to pass a finger into the bladder. This passage was not in the middle plane of the body, but distinctly toward the left. It was evidently the true urethra displaced, either through inclusion in the callus of the fracture, which remains as a prominent knob on the pubic ramus, or from cicatricial contraction of extra-urethral tissues. A No. 12 English gum-elastic catheter was tied in through the meatus and kept in first two days; through this all the urine came; when removed, it all came through the perineum for twelve days, but was under perfect control; then gradually more and more came through meatus, and none came through perineum after the thirtieth day. For the first week bladder was irrigated every second day, through catheter, with saturated solution boracic acid, made to return through perineum. From the sixth day a large steel sound (26 to 30 French) was passed every second day. The patient made a perfect recovery, without chill or bad symptom of any kind; he now makes a stream as large as ever; passes, himself, a 26 French sound, and is as well as any one.

The chief interest of the case lies in the additional difficulty of an operation, — sufficiently difficult when uncomplicated — due to the presence of a large, long, false passage occupying the position of the normal urethra, while the true urethra was hardly more than a pin-hole on the wall of a canal large enough to admit 30 French instrument and one and a half inches anterior to the cul-de-sac.

Reports of Societies.

FORTIETH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION,

HELD AT NEWPORT, R. I., JUNE 25TH TO 29TH, 1889.[1]

SECTION IN MEDICINE, MATERIA MEDICA, AND HYGIENE — F. C. SHATTUCK, M.D., CHAIRMAN.

Third Day — Thursday, June 27, 1889.

The first paper of the afternoon was by Dr. V. C. Vaughan, Ann Arbor, Mich., on

THE ETIOLOGY OF TYPHOID FEVER.

In 1880 Prof. C. J. Eberth, of Zurich, in eighteen out of forty-eight cases of typhoid fever, found in sections of the spleen and mesenteric glands a bacillus which was distinguished from the ordinary putrefactive bacilli by the difficulty with which it took up the aniline stains. At the same time Eberth reported that in twenty-four similar examinations of those dead from other diseases he was unable to detect this bacillus, and from these facts thought himself entitled to claim that he had discovered the true germ of typhoid fever. Since that time various experiments had been made by many different observers. The attempts which had been made to induce the disease in the lower animals by inoculation with this germ were numerous and interesting. To sum up the evidence which we had upon this point we might say: (1) the Eberth germ was found invariably in the bodies of those dead from typhoid fever; (2) it had been isolated and grown in pure cultures; (3) all attempts to induce typhoid fever in the lower animals by inoculation with this germ had thus far been without success; (4) experiments showed not only that the germ failed to multiply in the lower animals, but that when introduced by inoculation it soon died.

Dr. Vaughan thought it was now time to add this rule to the four rules of Koch: before any micro-organism could be considered the true and sufficient cause of a given disease it must be shown that the chemical products of that germ were capable of producing the characteristic symptoms and lesions of that disease in an acute form. Did this germ produce any chemical substance which would markedly elevate the temperature, such as mydaleine, or any which induced local inflammatory and necrotic changes in the tissues, such as cadaverine or putrescine? We could not say that the Eberth germ had been demonstrated to be the true and sufficient cause of typhoid fever, judging from the failure of the attempts of Brieger in investigating the nature of typhoid poison. To sum up the results of experiments on this point: (1) the result obtained upon injections of the Eberth germ was found to be in direct proportion to the amount introduced; (2) that the Eberth germ did not multiply in the blood; (3)the same symptoms and lesions were obtained by the introduction of non-pathogenic organisms. To this the bacteriologist might reply that the lower animals did not have typhoid fever. If we could experiment with man the result would be different.

Dr. Vaughan then described his own experiments in attempting to discover a chemical poison excreted by the Eberth germ. He took the fæces of typhoid patients, from which he obtained these germs. The germs were cultivated. His next step was to obtain a chemical poison which he succeeded in isolating. Crystals of this ptomaine were injected over the abdomen of an animal with resulting fever, severe purging, etc. This ptomaine was found to be most abundant when the culture was kept at about 104° F. Dr. Vaughan had not completed his series of experiments, and therefore had no definite statements to make respecting this alkaloid, to which he had not as yet given a name.

DISCUSSION.

Dr. W. H. Welch, Baltimore, agreed with the conclusions the reader had drawn from the experiments which investigators had made as to the pathogenic qualities of this typhoid bacillus in animals, but he protested against the setting up of a condition as essential for demonstrating the dependence of an infectious disease upon a micro-organism. He thought we were justified in considering that a germ was the cause of a disease when we found that germ invariably present in the disease in situations which would explain the symptoms of the disease, and when we failed to find that germ in any other circumstances than in that disease. If Dr. Vaughan's condition was to be accepted he did not know that there was a single disease which had been proven to be dependent upon a micro-organism. It was uncertain whether all micro-organisms which were pathogenic produced their effects by means of chemical substances which they formed. Doubtless that was true of some, but we were not justified in assuming that it was the sole method. He believed the evidence was conclusive that the typhoid bacillus was the cause of typhoid fever. It was a peculiar organism, which was found invariably, if we examined at the proper stage of the disease, in persons sick or dead from typhoid fever. It was found in the situations where we would expect the organism to be found, and had never been found in other situations, except in infected localities, as in drinking waters, etc. The isolation of the ptomaine in a crystalline form from the stools of typhoid fever patients was a very interesting addition to our knowledge, but it would be necessary to make investigations with other stools not infected with typhoid fever before concluding that the ptomaine had anything to do with the symptoms of typhoid fever.

Dr. James Tyson, of Philadelphia, said with regard to the fact that a chemical product must be discovered in the blood or tissues of the animal he would say nothing, but it seemed to him perfectly reasonable to expect that the same organism which had been found in the animal originally affected should also be found in the blood or tissues of the one in which the disease had been reproduced. That was the accepted original idea. It seemed to him that it would be very much more conclusive proof if we found the organism in the individual secondarily affected, that it was the cause of the disease, rather than if we simply found it in the individual primarily affected.

Dr. V. C. Vaughan, in closing the discussion, said that Dr. Koch, in a conversation with him recently, had expressed the opinion that the Eberth germ had not been demonstrated to be the cause of typhoid fever. Koch had laid down four rules: before we could say that any germ was the cause of a given disease we must (*a*) find it in every case of that disease; (*b*) isolate it from all other material; (*c*) healthy animals of the same species inoculated with that germ must have that disease; (*d*) in the animals inoculated with this disease the germ must grow and reproduce itself. Where these rules had been complied with there could be no possibility of doubt about the germ being the cause of the disease. Dr. Welch asked us to give up every one of these rules save the first, and that we must say that a germ was the cause of a disease when we found it in every case of that disease. Germs depended on the conditions surrounding them. As long as the bacillus of tuberculosis was found in every case of consumption and in no other disease, and no consumption had been produced in healthy animals by it, he claimed he would have had just as much right to say that it was the result of the consumption as they would have to say it was the cause. The proof was not and could not be complete until that germ was isolated from all other material and healthy animals inoculated with it had consumption. Simply because the Eberth germ was found in every case of typhoid fever could not be a proof that it was the cause of typhoid fever. He did not mean to say that every germ produced its deleterious effects by means of its ptomaine, but did mean to say that this had been demonstrated for a number of diseases — for anthrax, tetanus, etc.

Dr. James C. Wilson, of Philadelphia, read a paper on

THE PROPHYLAXIS OF TUBERCULOSIS.

The tuberculous diseases, including pulmonary phthisis, we recognized to be specific infectious diseases produced by a tubercle. He wished to consider three questions: 1, was pulmonary consumption hereditary? 2, was it contagious? 3, was it preventable? The solution of these questions was a matter of the gravest consequence to mankind.

1 Was pulmonary consumption hereditary? We knew that bodily conformation, facial peculiarities, etc., were transmitted. The same was true of nervous organization. Diseases of the mind and diathetic diseases were transmitted. A syphilitic mother might bear in succession several children manifesting the effects of syphilis in varying intensity. Tuberculosis, in the large majority of cases, was a local process throughout its whole course, while syphilis and certain other infectious diseases had the element of infection in the blood. The tendency to localization of the process was shown in the lungs, where caseated patches were found post-mortem in patients dead from other diseases than tuberculosis.

The tuberculous diseases did not correspond in their pathology to the acute infectious diseases which were hereditary. That tuberculosis might be produced by infection of the semen or ova there was no evidence; that it might be caused by infection of the placental blood there was little evidence. We no longer spoke of the "tuberculous diathesis," because it did not exist any more than a typhoid diathesis existed. The puny offspring of weak and diseased parents showed diminished resistance to disease and were especially prone to tuberculosis. That such children contracted infectious diseases did not incline us to call these diseases hereditary. The congenital predisposition to tuberculosis was much less general than to some of the eruptive diseases of childhood.

2. Was pulmonary consumption contagious? Tuberculosis was inoculable by all of the three recognized methods: (*a*) through foods and drink; (*b*) through the air; (*c*) by direct contact. There was no question at present that tuberculosis might be acquired by infected food, as the milk of tuberculous cows. Tuberculous sputum, alone or mixed with food, would give rise to tuberculosis in animals who ate this or to whom it had been administered. Inhalation of particles of dried sputum from tuberculous patients disseminated through the atmosphere might produce the disease. Experiments had shown that tubercle bacilli were present in the dust of rooms occupied by consumptives and absent in the dust of rooms occupied by people not suffering from this disease. The preponderance of pulmonary consumption over other forms of tuberculosis was to be explained by the greater exposure of the air passages to the bacilli. Another proof of the contagious nature of pulmonary consumption was its spread in the form of circumscribed epidemics, which were unnoticed because of the long duration of the disease. The development of the disease in married couples and in those nursing relatives suffering from it, also its great prevalence in cloisters, were in conformity to the view of contagion. The enormous spread of the disease among monkeys confined in zoological gardens and not in the wild state was also in conformity to this view. The tuberculous diseases, therefore, responded in every important particular to the tests by which we determined the contagiousness of other infectious diseases — it was transmitted by inoculation; by direct contact; by means of food and drink ingested, and, finally, by means of the inspired air.

3. Was pulmonary consumption preventable? If pulmonary consumption were hereditary in the ordinary sense any hope of prevention would be chimerical. What measures of prophylaxis could be exerted against the heredity and spread of a disease capable of showing itself at any time of life, or against a disease not only capable of transmission to the third and fourth generation but through a generation or two entirely free from it.

As the importance of heredity as an element in the production of pulmonary consumption diminished, that of contagion asserted itself more strongly. In contagion alone could we find a consistent theory of the spread of the disease and an intelligible explanation of the very facts to account for which the theory of heredity had been strained beyond reason.

The chief avenues of contagion were the digestive and respiratory tracts; and while in theory the spread of tuberculosis was preventable it remained to be seen how far it was in practice. The systematic care of milk, until consumed, to prevent the access of dust which might be infected, would be an important factor. The sputum of consumptives, which, when dried, became a fruitful source of the disease, should be collected in suitable vessels and kept in a moist condition until it was destroyed by fire or disposed of in such manner as not to become a source of danger. Consumptives should be cautioned not to spit upon floors or into handkerchiefs, for an individual who was well on the road to recovery might by self-inoculation, if he did not with the greatest care destroy his sputum, diminish greatly his own chances of recovery. It was important to communicate to the patient at an early date the true nature of his disease in order to secure his co-operation in the prevention of self-inoculation and in the prevention of the spread of the disease.

DISCUSSION.

Dr. C. G. Stockton, Buffalo, N. Y., believed in a tubercular diathesis to a certain extent. Some individuals exhibited a lack of resistance to the disease, and whether a person were resistant or non-resistant would determine whether he would have the disease. There was, in his opinion, something besides the mere contagiousness in this disease that determined its occurrence. There must be, first, contagion, and, second, soil.

Dr. S. E. Solly, Colorado Springs, found tuberculosis of the lungs in all sorts of people in Colorado. He thought there was overwhelming evidence of its contagious character. Those of the lymphatic type, perhaps, were more prone to take the disease.

Dr. H. J. Herrick, Cleveland, doubted the bacterial origin of tuberculosis, and thought it was not proved to be contagious.

Dr. S. S. Cohen, Philadelphia, thought it was still a question which was first in chronology, the organism or the disease. He believed there was a consumptive heredity, not a tuberculous heredity.

Dr. J. C. Wilson, Philadelphia, in closing the discussion, said the fact that there were certain problems in the question as yet not solved did not in his mind stand in the way of acceptance of the general doctrine. Pathologists were nearly unanimous in regard to the etiology of tuberculosis, and we must not be discouraged by clinicians who were unwilling to accept the doctrine. Those who opposed this theory did not offer anything in its place which was as reasonable and coherent as this theory.

Dr. M. R. Crain, Rutland, Vt., read a paper on

TOXIC AGENTS IN THE BLOOD AS A CAUSE OF DISEASES OF THE NERVOUS SYSTEM.

Dr. Crain called attention to multiple neuritis and the various toxic agents in the blood which might cause it, as arsenic, lead, alcohol, etc. Other blood-states productive of multiple neuritis were gout, rheumatism, septicæmia, and leprosy. Certain diseases of the nervous system, as locomotor ataxia, were cited in which we found lesions in various parts of the body, but these lesions were preceded, many of them, by toxic agents in the blood. Neurasthenia might be caused by overeating in case the person did but little and ate a great deal. Imperfectly digested food was introduced into the system, and hence the cause was a toxic agent in the blood. Many headaches were toxic. In every case of nervous disease it was necessary not only to locate the disease, and to say whether it was organic, but to examine and see whether any toxic agent in the blood was producing the trouble.

DR. W. L. SCHENCK, Kansas, presented

SOME THOUGHTS ON THE ETIOLOGY, PATHOLOGY, AND THERAPEUTICS OF PHTHISIS PULMONALIS.

Dr. Schenck considered at length the disease from the standpoints of etiology and pathology, and in conclusion announced it as a fundamental principle that without lowered vitality, general or local, there was no tuberculosis; hence the treatment of phthisis must be directed to the restoration and building up of degraded cells and tissues. The absence of fat tended to tuberculosis; its presence tended to prevent or cure tuberculosis. Alcohol had been recommended as *the* hydrocarbon in the treatment of phthisis, but the heat-producing power of alcohol compared with cod liver oil was as three to four in favor of the latter. In our treatment we must strive to improve digestion and assimilation, and we could not improve digestion without removing that which was useless. Alcohol "pickled" the tissues and tended to the retention of that which was useless.

DR. SOLOMON SOLIS-COHEN, Philadelphia, read a paper on

FOOD IN THE TREATMENT OF PULMONARY CONSUMPTION.

Though the paper is therapeutic, yet as therapeusis must be founded on sound pathology, it is necessary to state that the morbid physiology of the disease, and not its bacteriology, is considered the fundamental indication. In deference to prevailing views tuberculosis may for the present be granted to be the history of the growth, life, and activity of a bacillus. But for rational treatment we must revert to the views of Niemeyer, who said that the danger of phthisis is tuberculosis; or to those of Rush, who declared that tubercle and other anatomical lesions were "the effect not the cause of pulmonary consumption;" and recognize the disease we have to combat, not in epiphenomena of possible microbic origin, but in the consumption, the aberration of nutrition, which precedes the entrance of the microbe. Consumption is a disease of nutrition, whose exact mechanism is as yet unknown, though the results of prolonged observation justify us in considering heredity, unhygienic surroundings, and, in general, those influences called "depressing," as among its remote or proximate causes; the pulmonary form being further dependent upon errors in respiration, whether of the substances respired or of the performance of the act.

Thus we dismiss, as futile, microbicidal treatment; and recognize ptomaines of bacillary origin only as giving rise to intercurrent symptoms which may call for antidotal or symptomatic treatment. Fixing attention upon the malnutrition, which is not a mere "predisposition" to succumb to a bacillus, but the essence of the whole morbid process, we combat it by direct measures, hygienic and medicinal; the latter secondary, the former all-important. Chief among hygienic measures is food. Food consists not alone of meat and drink, but also of air. Full respiratory diet is necessary to the utilization of alimentary diet. As in diabetes, so in phthisis, there is imperfect metabolism of carbohydrates. Experience shows a nitrogenous dietary to be best. Debove has shown that consumptives can assimilate a quantity of food far in excess of the needs of the healthy organism. This excessive quantity should be supplied; though resort to the stomach-tube, as in Debove's experiments, can be reserved for special cases.

Meat, principally beef, with milk, fish, eggs, leguminous vegetables, and greens should form the bulk of the dietary, with the addition of fat in large quantities, in the form of cream, butter, oil dressing for salads, or, if necessary, cod liver oil or oleaginous inunctions. Alcohol is a food in consumption. It should be combined with malt, milk, glycerine, or cod liver oil. Not more than three, at most four, hours, except during sleep, should be allowed to elapse without taking food. Milk punch on going to bed, and a glass of wine or spirits with liquid peptonoids in case of waking during the night, are strongly urged. Hot water before meals, lavage if necessary, to prepare the alimentary tract for the digestion and absorption of increased food, and the free drinking of water to wash out waste products, are essential to success. Predigested foods may be employed with great benefit, especially peptonized milk and beef peptonoids. In case gavage is resorted to, they should be used almost exclusively. Gavage is best preceded by lavage with an alkaline solution and chloroform water. Proper alimentary diet being secured through over feeding, and the digestive tract and its adnexa being kept in good condition, proper respiratory diet must be supplied. Open-air life, exercise on horseback, or bicycle, voluntary respiratory gymnastics, may suffice when the patient is still strong enough. In the majority of cases there must be some artificial aid. The inhalation of compressed air, with or without expiration into rarefied air, is the best means. Apparatus should be simple and cheap, so that the patient can use it at home. The principles laid down by Waldenburg are the correct ones. Cohen's apparatus consists of a bellows and a small gasometer modelled upon Waldenburg's. Its advantages are cheapness, simplicity, and small size, fitting it for home use. After patients are sufficiently advanced towards recovery, the pneumatic resistance valves of the author, a still more convenient and very cheap pocket-apparatus (costing about $5) may be used. It may be used in the first instance with strong patients. It is also useful as a prophylactic measure with ill-developed children. It gives the effects of breathing against pressure, *i.e.*, into compressed air, or out of rarefied air.

The effects of pneumatic measures are to increase the volume of respired air, open up unused air-cells, facilitate expulsion of pathological products, increase gaseous exchange, facilitate absorption of oxygen by the hæmoglobin, while at the same time the volume of blood and the activity of circulation in the lungs is increased, bringing more corpuscles into contact with the increased volume of oxygen. Penetration of blood into the tissues, tissue respiration, and production of lymph are also increased. Thus local and general nutrition are powerfully stimulated, and an improved respiratory habit and increased respiratory and circulatory power are gained. The products of digestion are properly oxidized and utilized, immature tissue is destroyed and expelled. The promotion of sleep is one of the most marked effects.

The physician, by altering his patients' environment in the manner described, puts them into a condition where natural powers complete the cure, and bacilli need not be feared. Illustrative cases were cited, and the conclusion reached that the proper treatment of consumption is not microbicide, but nutrition.

Dr. J. A. Cutter, New York, read a paper on

TROPHOPATHY IN FATTY AND FIBROID DEGENERATIONS, WITH PRESENTATION OF CASES OF CURE.

SECTION OF OBSTETRICS AND GYNECOLOGY — W. H. WATHEN, M.D., CHAIRMAN.

Second Day — June 26.

Dr. Joseph Taber Johnson, of Washington, D. C., read a paper on

TETANUS FOLLOWING OVARIOTOMY.

So rare a complication of ovariotomy and the recent interest in the transmissibility of tetanus were his reasons for bringing this case before the section. The history of the case was, in brief, as follows: A solid growth, sarcoma of the ovary, the size of a child's head, was removed. The patient, who was aged sixty-one, recovered rapidly and without complication. On the morning of the thirteenth day she developed tetanus and died on the third day of the disease and fifteenth day after the operation. She exhibited numerous muscular spasms; mind clear, jaws locked. The convulsions were especially active in the neck and back, and during their presence the pulse was notably weaker. The patient died of what appeared to be heart-failure. No other patient in his hospital was affected with this disease, and it was the only case which had occurred in it during the eighteen months it has been in operation. It seemed to him that there was probably no outside influences. His horses were healthy and he does not drive them himself, so thought there could be no opportunity in this way. In all cases of inoculation the disease is contracted and the patient dies in a very few days, generally not more than three. His patient got along well till the thirteenth day. The author's case, the case of Homans, of Boston, and that of Richelot, of Paris, are the only cases of this complication he could find. The room in which the author had operated was thoroughly disinfected. The equine origin of this disease has been thoroughly discussed by Verneuil, of Paris, and much interest brought out by his investigations. Tait thinks tetanus will continue to be a complication of ovariotomy, and one which we can hardly explain or eliminate. The practical point of the paper was to draw attention to the infectious nature of this disease. He advised that care be taken as to infection, especially with horses.

Dr. A. Reeves Jackson, of Chicago, gave details of sixty-seven cases, more or less complete, in his paper on

INJURIES TO THE BLADDER DURING LAPAROTOMY.

Dr. A. Van Der Veer, of Albany, New York, read a paper on

CONCEALED PREGNANCY, ITS RELATION TO ABDOMINAL SURGERY.

Dr. Theophilus Parvin, of Philadelphia, read a paper on

CASUISTRY IN OBSTETRICS.

Zoroaster, long before Cicero, gave us the maxim which contained the teachings of Cicero, "In doubt as to whether an action is right or wrong, abstain." The order of Jesuits has given especial attention to this subject. Zoroaster's rule is excellent, but will not always do in obstetrics, because we cannot in all cases abstain; we must do something. Casuistry sometimes perverts, as in the case of the wife who excused her adultery by saying that she gave her body to her lover, but not her lips with which she had made her vows of fidelity. The treatment of ectopic pregnancy in its earlier stages is one of the pressing questions of the hour. The progress of science brings up new questions in casuistry in obstetrics. The ophthalmologist finds albuminuric retinitis in the pregnant woman, and tells her physician that the continuation of her pregnancy is at the peril of her vision, and possibly of her life. The speaker thought that woman, when pregnant, should be treated as well as other animals in a similar condition, and continence for months or years is possible and not injurious. Notwithstanding the many influences brought to bear on the physician to prevent conception he takes great responsibility who attempts to thwart nature's law — *lex, lex dura, sed lex.* The instances for imparting this information are exceedingly rare, and the nicest casuistry is necessary. This information, if given, will pass to those who have no cause for the prevention of conception, and it will become general, and a strong defence to female virtue is taken away. Craniotomy he considered one of the most painful, serious, and difficult questions in casuistry in obstetrics. He reported several cases where the operation had been performed and the child had to be killed after delivery, or partial delivery. Those who advise craniotomy on the living fœtus cannot decide on the measurements of the conjugate which demand it. The field of craniotomy is being steadily restricted, but that it will entirely disappear except for hydrocephalus, and according to Tait in two years, few are sanguine enough to believe. Amputation of the pregnant uterus is destined to occupy a more prominent position than it has yet done. It is yet to be decided whether hysterectomy or hysterotomy will save the larger number of patients.

Dr. Wm. H. Parrish, of Philadelphia, read a paper on

PELVIC ABSCESS IN THE FEMALE.

He divided this into three subdivisions, areolar, intra-tubal, and ovarian. Chronic pelvic cellulitis occurs only as a sequel to pelvic abscess. We usually have the history of gonorrhœa in the husband, dyspaneuria in the woman. He had never met with an areolar abscess dependent upon extension of gonorrhœal inflammation from the vagina or uterus directly through the walls of these organs into the pelvic areolar tissue. Chronic cellulitis, unless becoming such by complications, is a gynæcological myth, and has an existence only as an *ignis fatuus* in the brains of former members of the profession. Abdominal surgery has demonstrated in numerous instances that chronic cellulitis has no independent existence. That intra-tubal abscess occurs with very much greater frequency than areolar abscess must appear to every one familiar with abdominal surgery. The successful treatment of pelvic abscess often demands an exercise of the most deliberate judgment and the highest operative skill. The doctor urged the necessity of operating early in every variety of curable pelvic abscess. The besetting sin of the family practitioner and the timid and doubting operator is to wait. In this delay the dangers become cumulative and the surgeon is asked to operate when the case has become hopeless. If the patient dies the practitioner is discouraged, and in his next case he waits longer still in the hope that pus may not form or that it may escape spontaneously. He thinks that in some of his cases suppuration has taken place, resolution followed, and so justifies his delay. Early surgical interference with the knife should be the rule in all varieties of pelvic cellulitis.

(To be continued.)

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Sixth Annual Meeting, Boston.

Second Day — Tuesday, June 25, 1889.[1]

Dr. Vincent Y. Bowditch, President, in the chair.

Dr. John C. Munroe, of Boston, read a

REPORT OF TWENTY-FOUR CASES OF ACUTE MILIARY TUBERCULOSIS.

The following analysis of twenty-four cases of acute miliary tuberculosis of the lungs has been made in order to furnish if possible some clues towards the detection of the disease that not infrequently bewilders the most careful practitioner. The cases have been taken from the records of the Boston City Hospital, and it is to the courtesy of the members of the staff of that institution that I owe the pleasure of presenting this brief consideration. For the use of some valuable private notes made on a number of the patients by Dr. Samuel Delano I feel greatly indebted also. All the cases were fatal, occurring within the last five years, and only those in which a post-mortem examination was made have been chosen. The number is too small to attempt to draw percentage conclusions, and some factors generally considered of importance have been passed over because of insufficient data. Fourteen patients were male, with an average age of thirty-eight years, that of the females, not including one child two and one-half years old, being only thirty-two years. The oldest, a man, was sixty-five years of age. Eight were between the ages of forty and sixty years. Over a half were born on or near our eastern shore; two were negroes. The majority were ill in February, March, and April. Their occupations were of various kinds, and apparently had no causative influence. Only three gave a phthisical family history. In twelve it was not phthisical, while in nine no history could be obtained. Three-fourths of all the patients had always been well up to the time of the present illness, and, although in thirteen cases the autopsy revealed a chronic tuberculosis in addition to the acute miliary process, yet of this group only a single patient had given a history of having suffered from phthisis. In fact, the remainder had always been looked upon as healthy. Even though there was a history of a cough for one or more months, in two-thirds of the cases it was noted as being slight with muco-purulent expectoration, and had excited no alarm except in one instance when several attacks of profuse hæmoptysis had occurred. A severe cough was recorded in two cases, but in each it had begun less than a month before admission to the hospital. Among the exciting causes might be mentioned the following: overwork and exposure in a damp cellar, several weeks of hard drinking with but little food, partial asphyxiation, measles, scarlatina, whooping cough with measles and vaccination, each in one case. About one-third of the cases gave a clear history of a marked chill ushering in the disease. A few more complained of feverishness and malaise, while headache was pronounced in a few others. Loss of flesh, strength, and appetite, wherever noted, came on rapidly and were very marked. Likewise night-sweats were always profuse.

The post-mortem examination in every case showed an acute miliary tuberculosis of the lungs, and so far as could be judged it was the important, or one of the important, pathological conditions. Thirteen showed in addition some degree of chronic tuberculous process going on, often with cavity formation.

In thirteen cases, divided almost equally between the acute and the acute chronic, there was a tuberculosis of the meninges, causing so marked symptoms during life that the diagnosis was strongly influenced.

DISCUSSION.

Dr. A. L. Loomis: This is a subject which has interested me for a very long time. It has interested me mainly in diagnosis. I have in mind the case of a young man, twenty-six years of age, who came to New York from Chicago, from Dr. Jewett. I made the diagnosis of pericarditis. The signs were very distinct, without fever. There was in that case a temperature at no time over 100°. There was rapid emaciation. He died about two or three weeks after he came to New York, probably about two months after the first symptom. At the autopsy we found tuberculosis. There were miliary tubercles in the lungs. There were miliary tubercles found in every organ that was examined. There is one point in the diagnosis which seems to me to be a very important one, and that is the rapid emaciation which takes place in all of these cases that I have seen. It is not necessary for me to say here to you gentlemen who are so familiar with this class of cases, that the diagnosis in miliary tuberculosis is very often not made until the post-mortem. Not infrequently persons go through Bellevue Hospital, and are treated as cases of fever, when at the post-mortem are found traces of miliary tuberculosis.

Dr. J. B. Walker: In the report of a case of a mother nursing her first infant she developed a miliary tuberculosis which ran its course very irregularly. There was a rapid development of pulmonary symptoms during the early portion of the attack. During the cardiac development the pulmonary activities lessened. With the cessation of the cardiac symptoms there was marked infiltration. The curious point in the history was the development of the pericardial symptoms and their disappearance entirely after the gradual development of the disease towards death. At the time the cardiac symptoms disappeared her temperature returned to normal. It had been gradually going down, and towards the close it was the ordinary temperature of miliary tuberculosis.

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[1] Continued from vol. cxx, p. 615.

Dr. Frederick I. Knight, of Boston, read a paper on

THE CLIMATIC TREATMENT OF BRONCHIAL ASTHMA.

If one seeks information on the selection of a suitable climate for an asthmatic patient he will soon realize that no successful attempt has been made to establish indications for preference of one climate over another for any given case of asthma, that changes of climate have been made usually in an experimental way, and have been often attended with aggravation of the symptoms.

The chief cause of this has been the mistake which has been made in trying to reduce all cases of asthma to one class, assuming that the ultimate cause and mode of development of this symptom was the same in all cases. This has led to the origin and promulgation of different theories which have been in turn advocated and abandoned.

The ease of error of the medical man is greater than that of the blind man in Tolstoï's fable, because, while he may soon learn to interrogate all parts of the animal tendered to him for examination, he will also soon be made aware that there is a great variety of animals. The specialist is familiar with the kind of asthma occurring in his own field of practice. It will appear that in climatic as in medical treatment we must make an examination to ascertain the condition of the patient as far as it is possible to diagnosticate this, and not treat the name of the disease. Dr. Knight stated that in an attack of asthma there were three factors, a predisposing, a determining, and an exciting cause, and the removal or modification of any one factor might prevent the paroxysm. The first and last factors were pretty generally admitted, the second some authors put in the nose, some in the lung, &c., but it had better be stated as a morbid condition *somewhere* in the respiratory tract, initiation of which caused reflex phenomena in the bronchial tubes. There is no climate which is good for all cases of asthma, and we must carefully consider, when the patient presents himself for treatment, the nature of the factors in his case, which of them we intend to modify, and how far change of climate may be able to aid us in this.

Dr. G. M. Garland, of Boston, read a paper on

THE PATHOLOGY OF HÆMOPTYSIS FROM CHRONIC PULMONARY DISEASE.

For the convenience of our discussion to-day we will assume that we are considering only cases of true pulmonary hæmorrhage, wherein all extraneous sources of blood-supply, such as aortic aneurism, cardiac rupture, etc., have been ruled out by the symptoms of the case. We can then roughly divide pulmonary hæmorrhages into two groups: (*a*) cases which present physical signs of pulmonary disease; (*b*) cases in which no physical signs of changes of lung structure can be found.

Our knowledge of the pathological causes of hæmorrhage in the first group has been thoroughly digested by Virchow, Thompson, and others. We know that hæmorrhages proper in this group come from deficiencies in the pulmonary system of vessels, while bronchial hæmorrhage, or leakage from the arterial supply of the bronchial tubes, is slight in quantity and simply streaks the accompanying secretions of these tubes. No inference can be drawn from the color of the blood as to its source, because the oxygenation of the pulmonary blood is so rapid that it is expectorated red. Traumatic injuries of the vessels, and aneurism and diapedesis are familiar causes of hæmorrhage in tuberculosis. According to Virchow, however, the greater number of hæmorrhages in phthisis comes from ulceration of the vessels. In the second group we find no clinical evidence of changes in the pulmonary parenchyma. We may indeed locate the presence of blood in the bronchial tubes, but this does not necessarily determine the seat of the leakage, because the blood is rapidly drawn off into byways and side issues quite remote from its point of escape. The presence of hæmophilia, scurvy, and habits of excessive drinking would lead one to consider alterations in the composition of the blood itself as a possible cause of hæmorrhage. Some evident point of departure for an embolus, the possibility of thrombosis, etc., are matters for consideration in diagnosis.

Pulmonary congestion is not of itself alone a prolific cause of hæmorrhage. In whooping cough and congestive bronchitis the amount of blood is rarely copious and is the result of violent coughing. One writer has observed that hæmorrhages are rare in acute maladies of the respiratory apparatus, and in pulmonary congestion which is not symptomatic of a cardiac affection are rarely accompanied by an expectoration of blood.

This brings us to the consideration of the heart as a factor of pulmonary hæmorrhage. Fernet says: "After tuberculosis, heart disease exerts the greatest influence in producing hæmoptysis, and mitral troubles stand pre-eminent in the causative list." Here also the element of exertion comes in, upon which Thompson lays so great stress. He says: "The influence of exertion in the etiology of blood-spitting has not received so much attention as it deserves from the amounts and frequency of the event, for cases occur in which hæmoptysis has followed some unusual exertion, in which no causative proof of pulmonary disease can be shown to exist." Prolonged exertion in walking and running leads to excessive hyperæmia of the lungs consequent upon the rapid emptying of the veins into the right side of the heart, and either the lungs give way under a condition of general congestion with extravasation of blood, or local troubles of a similar kind occur; or, on the other hand, the heart may become overstrained and give way in a condition of general dilatation.

Brown-Séquard has produced hæmorrhage in the lungs by lesion of the pons. Strauss speaks of the ecchymoses tabetiques upon the extremities, following severe pain. Faisans and Kellar describe subcutaneous hæmorrhages resulting from great moral commotions in neuropathic persons; vicarious menstrual hæmorrhages are a common experience, and it is interesting in this connection to note that out of two hundred cases collected by Puech, hæmoptysis figures twenty-four times, *i.e.*, in 12½%. Great weight is laid by Virchow upon a certain condition of the arteries themselves, which he called *wallung* [orgasm]. And he evidently believed this wallung to be under the direct control of the nerves. Illustrations of this condition are observed in the pulsatio epigastrica of hypochondriacs; in the heat-flashes of women during the climacteric; in the pulsations of the head in cephalalgia; in the throbbing of the temporal artery with the toothache. Moreover, this sensation of wallung is also felt in the chest and sometimes followed by a hæmorrhage which removes the disagreeable sensation, according to the evidence of patients.

In conclusion, therefore, I would say that I believe that a more careful discrimination of our cases of pulmonary hæmorrhage would reveal some of neurotic origin.

(To be concluded.)

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

Regular meeting, Monday, March 4th, at the Medical Library, 19 Boylston place. Dr. H. W. Williams in the chair.

Dr. F. W. Page read a paper on

A BUSSEY BRIDGE ACCIDENT CASE: A REVIEW AND A CRITICISM.[1]

Dr. Nichols said the society was under obligation to Dr. Page for the very careful manner with which the paper was drawn up. It is often very difficult for the expert who may be summoned for a corporation or for the defence to know exactly what course to pursue. If he states at the outset that he believes the plaintiff to be a malingerer he is apt to prejudice the rest of the testimony which he may have to present; the physician too often shows a lack of moral courage in not stating to the jury exactly what he believes. A different course is pursued in Germany: there, if the expert believes the plaintiff to be an impostor, he says so in so many words; here, the expert is much more cautious, and says, "the plaintiff in all probability is not so badly injured as he believes himself to be." If a different course was pursued here, Dr. Nichols believed that many of the excessive verdicts would be avoided. With regard to the symptom of local anæsthesia, he thought too much stress was apt to be placed on the effect of sticking a pin into the flesh, as many persons can stand the thrust of a pin without showing any signs of being hurt; he is accustomed to use a needle, as in electrolysis, adding a few cells at a time till pain is felt.

Dr. Prince said that the paper of Dr. Page was a model of what such papers should be; many similar papers are so lacking in detail and in the methods employed in making the examinations that the report is of little value except to record the opinions of the writer.

Anæsthesia is a very easy thing to simulate and a very difficult thing to detect; the method recommended by Dr. Nichols in the use of electrolysis to detect anæsthesia, he should think would be of great value, and he should use it hereafter; if a sufficient number of cells were used it would be impossible to simulate anæsthesia.

Dr. J. Orne Green read a paper on

CLINICAL OBSERVATIONS IN AURAL PRACTICE.[2]

Recent Literature.

The Bacteria in Asiatic Cholera. By E. Klein, M.D., F.R.S., Lecturer on General Anatomy and Physiology in the Medical School of St. Bartholomew's Hospital, Professor of Bacteriology at the College of State Medicine, London. London: Macmillan & Co. 1889.

This volume of one hundred and eighty pages is reprinted from the pages of the *Practitioner*, where the articles originally appeared between October, 1886, and May, 1887. The more recent contributions of Koch to the knowledge of the comma bacilli have been added to the text. The author holds to the opinion, in which he coincides with Pettenkofer, the English cholera commissioner, and others, that this comma bacillus is not the proved cause of cholera: though he agrees with Koch that the bacilli are constantly present in the cholera intestine and discharges during the early stages of the disease. The book is well illustrated.

Transactions of the Gynæcological Society of Boston. New Series, Vol. I. Cupples & Hurd. 1889.

The present volume of Transactions is the first permanent record of the work of the Gynæcological Society of Boston since 1872. That the society has not been idle in the meantime these admirable papers clearly show, and the recent date of many of them is an indication of renewed activity.

The twenty-eight communications which compose this volume naturally vary in interest and value. Of especial merit are The Ethics of Abortion, by J. E. Kelly; The Dress of Women, by Helen L. Betts; The Obstetric Forceps, by S. N. Nelson; The Perineum: its Anatomy, Physiology, and Methods of Restoration after Injury, by H. O. Marcy; and The Diagnosis and Treatment of Cancer of the Breast, by J. Collins Warren. Many of the others are eminently practical and suggestive, and taken as a whole they form a valuable collection for study and reference. They have been issued in an exceedingly neat and attractive form by the publishers.

Handbook of Physiology. By W. Morrant Baker, F.R.C.S., and V. D. Harris, M.D. Lond. Twelfth edition, rearranged, revised, and rewritten, and with five hundred illustrations. New York: William Wood & Co. 1889. pp. xi, 784.

This new edition of Kirke's familiar handbook will probably and properly find favor with those students who seek a book of moderate size and adapted to a similar capacity of the reader. The book has been improved by a considerable rearrangement of the material and by the addition of several useful plates, diagrams, and tables. The revision is in some particulars (*e.g.*, glycogen, urea production, peptones) not quite on a level with the best and more recent investigations.

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[1] Publication deferred.

[2] See page 51 of this Journal.

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TWENTY-FIFTH ANNUAL REPORT OF THE BOSTON CITY HOSPITAL.

This report presents the usual statistics setting forth the work done for the "sick poor" of the city of Boston during the year 1888. From these we learn that 6227 patients were treated in the hospital during the year, of whom 772 died, giving a mortality rate of 12.3 per cent.; but 314 died within 48 hours after admission, and if these are deducted the mortality rate would be 7.3 per cent. There were also 176 deaths from diphtheria, and as these were almost hopeless cases they ought also to be deducted in estimating the rate of mortality. The mortality at an institution where no one is too sick or too wretched for admission, and to which many cases are sent which have proved too serious for other hospitals and for outside medical relief, is necessarily high, and last year at this hospital, owing to an unusual prevalence of diphtheria and other causes, has been higher than before.

Of those admitted 3253 were medical, 2543 surgical, and 79 ophthalmic patients; 3665 were males, and 2210 females; 1721 were of Irish nativity, 1354 were born in Boston, 640 in the British Provinces, 362 in Massachusetts towns, 297 in England, 264 in Maine, 146 in Germany, and the rest in varying numbers in other parts of the United States, and in all parts of the world. Italy furnished 96, Scotland 90, Sweden 82, Russia 64, etc., etc. The largest number at any time in the hospital was 441, the smallest 320: the daily average number of patients was 378. The average time of remaining in the hospital was 22.21 days. The average net cost per patient per week for the year 1888 was $7.91 against $7.41 for the year 1887, $7.52 for the year 1886, and $8.39 for the year 1885.

The total expenditure during the year was $203,206, of which $17.045 was for additions, alterations, and renovations. The income from paying patients was $27.946.

Of diphtheria, 382 cases were treated during the year, with a mortality of 48 per cent. A large number of these were very young children suffering with septic symptoms or in the last stages of diphtheritic laryngitis, of Italian, Portuguese, or other foreign parentage, and were hopeless from the time of admission: there were 61 tracheotomies, of which 54 ended fatally, 107 intubations, with 78 deaths, and 17 cases in which intubation and tracheotomy were both performed, all of whom died.

In the out-patient department 13,383 patients were treated during the year, of which 5910 were surgical, 2991 medical, 1600 ophthalmic patients, and the rest came to the various special clinics for the skin, the ear, the throat, the nervous system, and for diseases of women.

The report justly condemns, as unquestionably bad, the policy under which contagious diseases, such as scarlet fever, measles, diphtheria, and typhus fever, are received in buildings in somewhat close relations with other wards of a general hospital. A special hospital for such cases, under charge of the Board of Health, with requisite authority for control, would relieve the General Hospital of a class of cases it ought not to receive. Such a hospital will involve increased expenditure, and will have to await a more enlightened public conscience and a less depleted city treasury.

An electric light plant is suggested as an improvement "not only demanded by the times, but especially needed in wards occupied by large numbers of sick people. The superintendent states that: "As an ordinary gas-burner consumes as much oxygen as five adults, so in some of the wards the oxygen consumed by the gas-lights is equivalent to twice the amount used by the patients. This means that three times as much oxygen is consumed when the wards are lighted as during the day when no gas is burning. Recent analyses of the air in the wards prove that the amount of carbonic acid gas in the wards during the day-time is constantly low (3.6 per cent.), and with little variation. This percentage rises rapidly after dark, and has been found as high as 11.4 per cent., which is near the danger-line, and practically means crowd-poisoning."

The training school for nurses in its eleventh year graduated twenty-one pupils; as proof of graduation a badge has been established which graduates may be required to exhibit.

This hospital is undoubtedly among the very best municipal hospitals in the world, but the demands upon its resources are constantly growing and its work is often much hampered by insufficient appropriations; this being the case, it seems idle to hope for the establishment of a special hospital or hospitals for contagious diseases, at least in the immediate future.

TREATMENT OF NEPHRITIC COLIC AND GOUT BY THE GARDEN BEAN (*Vicia faba*).

A writer in the *Bulletin Général de Thérapeutique* (March 15th, 1889) extols the usage in nephritic colic, renal lithiasis, and gout of an infusion of the flowers of the garden bean. He speaks of this having been a standard remedy from time immemorial on the coasts of Calabria and in the south of Sicily, where the waters are hard, and where renal lithiasis is very common; the natives are in the habit of resorting to bean-flower tea when afflicted with calculous affections. The writer in the therapeutic journal alludes to his own experience in the use of this remedy. For more than thirty years he had been subject to attacks of renal colic; a strong decoction of bean flowers (which he took pains always to gather in their season) always rendered him signal service. He also bears testimony to the benefits which persons afflicted with gout have derived from this infusion of bean flowers. An infusion is made by steeping a drachm and a half of the flowers in a teacupful of water. This entire quantity is drank during the day, and it is recommended to continue this treatment for several months. A vicar of the suburbs of Dijon, an Italian count, is quoted as having said: "If this remedy does not cure gout, it certainly enables one to live with the gout without suffering." A common way of using this remedy in Calabria is to steep three drachms of the flowers of the bean in a quart of water and reduce this quantity one-half by boiling. To be freely drank by the patient.

The above indicates a use of the garden bean which will certainly be new to most persons in this country.

MEDICAL NOTES.

—The recent legislature of Texas voted $50,000 for the establishment at Galveston of a medical branch of the State university.

—Dr. Kiernan says he will not resign his position of superintendent of the Insane Asylum, as requested by the Cook County Commissioners, and that if the board wishes to get rid of him it will have to pass a resolution discharging him.

—The trustees of Roper Hospital, Charleston, S. C., have decided to repair the old building on Queen street, which was so badly damaged by the earthquake of 1886. The contract has been awarded, but none of the papers have as yet been signed. Just what use the building will be devoted to has not yet been determined.

—Dr. Henry M. Hurd, now superintendent of the State Hospital for the Insane at Pontiac, Mich., in the neighborhood of Detroit, has accepted the office of superintendent of the new Johns Hopkins Hospital in Baltimore. He is a man of about forty-five years of age, whose life has been devoted to hospital service, and he has acquired distinction as an administrator and also as a writer. He graduated in arts and in medicine at the University of Michigan, and has twice been called by his alma mater to a professorship of medicine.

—The addition which is being made to the Maine General Hospital will make the building about double its present size. The present structure consists of large square building with a long wing. The new building will consist, first, of a building 40x40, and of the same height as the present one. These will be connected by a corridor 16 feet wide. Added to this will be a building 38 feet long and 33 feet wide, which will be used for the wards. Across the end of this, at right angles, will be the third part, which will contain the apartments of the house doctors, and will be 60x25. The total length of the new structure will be 140 feet, with a width of 33 feet.

—The Kentucky Court of Appeals has made an interesting contribution to the literature of excise law.

A local option statute of Kentucky prohibits the sale of liquor as a beverage, but allows druggists to sell it for medicinal purposes on a prescription written and signed by a "regularly practising physician." The Act then provides that—

"No physician shall make or sign any such prescription except the person for whom it is prescribed is actually sick and such liquor is absolutely required as a medicine."

The Kentucky Court of Appeals has rendered a decision holding that if this provision is to be construed literally to mean that the physician is liable to punishment if the liquor was not "absolutely required" by the patient, then the statute is unconstitutional. "To make him a warrantor," the opinion says, "that the particular drug he prescribes is absolutely necessary for the disease, and for a breach, the result of an honest mistake, to mulct him in a fine, would drive him from the field."

But it is not necessary, the court goes on to say, to give the Act so rigid a construction. All it means is that if the person is actually sick, and the physician, after making a reasonably full and fair investigation of the disease, believes in good faith that his patient needs the whiskey as a medicinal remedy, and prescribes it, he is not guilty of violating said section.

— Judge Prendergast, of Illinois, has rendered a full and very damaging decision as to the condition of the Cook County Insane Asylum. The case came up on the petition of Dora Willard, through her sister, for release from the asylum, which is granted on the ground that the asylum is not a fit place for her detention. After enumerating the abuses found to exist the judge says: —

"The foregoing is but an incomplete reference to the facts adduced in this investigation. To a great extent workmen and attendants have been appointed on political grounds, and the constant care of these persons is to retain their places and cultivate the friendship of the powers that be instead of studying to increase their efficiency and skill as attendants upon the insane.

"Carried on under the guise of benevolence, this institution is in fact a monument of inhuman neglect. The county board claims to be utterly unable, under existing legislation and in view of the financial condition of the county, to do anything substantial toward remedying this condition of things. The fact is that there is no insane hospital or asylum in Cook County. There is a place of imprisonment that we call an asylum, and to this place we have committed about one thousand unfortunate insane, as to a tomb for the living, little less dreadful than a tomb for the dead in its worst state."

— From an entertaining book called "The Story of Patsy," by Kate Douglass Wiggin, which illustrates the attempt to apply modern educational methods to the very poor children of our large cities, we copy the following letter from "a mental heeler" in excuse for the repeated tardiness of her son. It is too life-like to have been invented: —

Miss Kate: Dear Madam: You complain of Lafayette's never getting to school till 11 o'clock. It is not my affare, as Hildegarde has *full charge* of him and I *never* interfear, but I would sujjest that if you *beleeve* in him he will do better. Your unbeleef sapps his *will powers.* You have only reprooved him for being late. Why not incurrage him say by *paying* him 5 cents a morning for a wile to get among his little maits on the stroak of nine? "Declare for good and good will work for you," is one of our sayings. I have not time to treet Lafayette myself, my business being so engrossing, but if you would take a few minutes each night and *deny Fear along the 5 avanues* you could heel him. Say *there is no Time in the infinit* over and over before you go to sleep. This will lift fear off of Lafayette, fear of being late and he will get there in time. Yours, for good,

Mrs. Powers, Mental Heeler.

Miscellany.

ENDEMIC CANCER.

The Paris correspondent of the *Therapeutic Gazette* gives some interesting facts collected by Dr Arnaudet, of Cormeilles, in Normandy, bearing upon the question of the contagiousness of cancer, which tend to prove that the disease may, under some circumstances, be communicated from one patient to another. In the little village of Cormeilles, with a population of four hundred in 1881, no less than eleven deaths from cancer, out of a total of seventy-four, occurred during the eight years elapsing from 1880 to 1887. So large a proportion for a comparatively infrequent affection is almost equivalent to an epidemic, and was all the more remarkable that the cancers were located in the stomach, neck, or mesentery, and carried off ten male patients against one female. As compared with Paris, the whole mortality from this cause was not only considerably larger, but the proportion of sexes entirely different, the usual rate in Paris being fifteen female to nine male cancer patients. The mortality at Cormeilles may be set down at ten times that in the capital, which is considered to present a fair average. The unusual proportion of male deaths in the village is, according to Dr. Arnaudet, owing to the fact that while in the city the uterus is often the seat of the disease, at Cormeilles the cancer almost invariably located in the stomach, and never once in the womb. Other Norman towns, as inquiry from brother physicians proved, showed a similar state of affairs. On grouping together the cases, and comparing the circumstances, too long to be here related, Dr. Arnaudet has come to the conclusion that there is no doubt of the transmission of cancer from one patient to another, and thinks the contagion has, in the present instance, had for a vehicle the water from village ponds used for making cider, the popular drink in Normandy. Cider-drinkers have been shown by medical statistics to be remarkably free from stone and urinary calculi. The immunity would be dearly purchased if cancer in the stomach is to be the price, were it not that Norman peasants can easily escape the dilemma by mixing their cider with none but pure water.

Correspondence.

PARIS LETTER.

FROM OUR SPECIAL CORRESPONDENT.

MICROBIOLOGY IN THE PROPHYLAXIS OF INFECTIOUS MALADIES; SUPPURATIVE COXALGIA; ACTION OF COCA ON THE VOCAL CORDS.

Paris, 21st June, 1889.

In a work on microbiology in the prophylaxy of infectious maladies, Dr. Fernand Roux makes some critical remarks which may be considered worth noticing here. Microbiology, he says, is a new science which has revolutionized medicine and has proclaimed the pretension of establishing the prophylaxy of infectious maladies on a scientific and precise basis. This pretension has found few contradictors, and it has been admitted without restriction by certain confrères who preside over the destinies of official hygiene. It has often been asked what great progress microbiology has made since its introduction into medicine as regards the prophylaxy of contagious maladies. Cholera, which threatens us continually and which has been the subject of extreme interest, has been selected for investigation. It will be remembered the sensation that was caused in Europe by the discovery of the comma microbe which Koch affirmed to be the pathogenic agent of cholera. Admitting, for a moment, the correctness of this opinion, which is known to be contradicted by the majority of English physicians, the author asks what prophylactic results the discovery of Koch has produced? He cites the researches of MM. Gamaleïa and Yvert, which he says are not at all conclusive. For instance, pigeons that had been experimented on, and which died without presenting any symptoms of cholera after having been inoculated with a culture of the comma microbe, are registered as having been affected with cholera. M. Gamaleïa pretends that a person may be given a certain immunity against cholera by previously inoculating him with the attenuated disease. Such a theory may hold good with certain infectious maladies which, like the yellow fever, generally affect the same person but once, but this is not the case with cholera. A first attack of this affection does not afford the least immunity against a second attack. It may be predicted that the attempts that may be made in the direction followed by M. Gamaleïa shall be condemned to non-success. As regards M. Yvert, the prophylaxis which he says that he has discovered is extremely simple. The bichloride of mercury kills the microbe of Koch. Therefore, by administering it to patients affected with cholera they are cured, and by giving it to persons exposed to cholerigenic miasmata they would be protected against the disease. This theory would seem rational enough, but it is not confirmed by practice. M. Yvert says that he had obtained very good results with the bichloride during his practice at Tonquin. This method had been tried for a long time in India by the English physicians, and it did not prove more efficacious than the other remedies. As to the prophylactic value of the bichloride, if it be correct, observes Dr. Roux, the syphilitic patients submitted to the classical treatment should be protected against cholera. It has, however, been proved that the mercurial treatment is not only not prophylactic, but, as it troubles the digestive functions, it would constitute more a favorable cause to the development of the malady. In comparing, on the contrary, the results obtained by hygiene in the prophylaxy of cholera, we find that they are absolutely marvellous, and they have been obtained by the English physicians in India by observation alone and the study of epidemics, without a single theory being advanced. From 1826 to 1841 there died, on an average, annually from cholera 35 per 1000 inhabitants. At the present time the mortality has fallen to 2 per 1000. This almost incredible result has been obtained by simply substituting filtered water for that which was employed without taking into consideration from whence it came. Everywhere where this substitution was effected the cholera has diminished in such proportions that it may be admitted that the Europeans in India are protected against the disease if they do not commit any imprudence. At Calcutta, before 1870, the average mortality from cholera was 10.1 per 1000. Since this period, from which dates the establishment of pipes of filtered water, the mortality is 3 per 1000, having diminished by more than two-thirds. This result can only be attributed to the distribution of filtered water to the inhabitants. That which absolutely proves this fact is that in December, 1877, one of the principal reservoirs was seriously damaged, in consequence of which the distribution of filtered water was suspended for some time. The cholera, which before the accident was at its normal rate, assumed an ascending progression, and diminished as soon as filtered water was redistributed for consumption. It is true that enthusiastic microbiologists may say that precisely it is the microbe discovered by Koch, and which exists in the water, which propagates the cholera, and that consequently the prophylaxy of the malady proceeds from this fact. It may, however, be observed that a great number of English physicians, and those not among the least eminent, refuse to accept the ideas of Koch. The filtered water distributed at Calcutta does not pass on filters capable of retaining a microbe as small as the comma bacillus. Even should the theory of Koch be correct, it is not the less certain that the English physicians, ten years at least before the works of the German professor, had discovered the veritable prophylaxy of cholera, without having recourse to any theory whatever, and only by patient and repeated observations of choleraic epidemics. It may therefore be said that the prophylaxy of cholera was known, and put in practice, for some time in all parts of India by the English. After other critical remarks as to the futility of microbiology so far as regards the prophylaxy of cholera, the author declares that he has no intention of depreciating microbiology, which has rendered, in surgery, such considerable service that it has transformed this science. But when microbiology is introduced into medicine, and particularly into hygiene, it cannot have the same pretensions.

For some years past there have been many microbian theories developed, but all impartial medical men will acknowledge that as regards the prophylaxy of infectious maladies nothing new has been done. At least that which is given as such had been known and put into practice for a long time past. "It is certainly difficult to study and to follow step by step the progress of epidemics, to collect with care all the circumstances which favored them, or diminished their intensity. It is a fastidious work and gives but little credit to those who devote their time to it. It is otherwise convenient to find a microbe which gives glory and often profit to its discoverer. But, as regards serious results, the first method is the only one which, for the greater part of the maladies, and particularly for cholera, has useful effects. It is this which the English physicians have followed with success in India. We have only to read their works, and shall not find in them a single word of theory, but the most interesting practical results. Should anybody have any doubt about the matter, he has only to recall to mind the considerable diminution of the mortality from cholera in India." The above remarks by Dr. Roux are worthy of consideration, as he had practised for several years in the French possessions in India.

Prof. Ollier, of Lyons, recently read a note at the Academy of Medicine on the distant results of the resection of the hip-joint in cases of suppurated coxalgia, regarded particularly in view of its definitive results. Since 1860 M. Ollier had practised this operation about fifty times, but he gives an account of the most ancient ones, which amount to fourteen, as it is only after a very long time that one can appreciate the results. These results show, without any doubt, that after the resection of the hip-joint, when it concerns a suppurated coxalgia, anchylosis is the termination which gives to the limb the *summum* of function for an active life. This anchylosis was generally obtained each time that the resection was properly performed under the periosteum, and that all the fibrous tissues of the old articulation had been carefully preserved. When the femur is anchylosed in a favorable position, with a slight flexion, the operated subjects may give themselves up to the hardest work and become indefatigable walkers. Once the anchylosis is established, there is nothing to be feared, in the way of secondary displacements, or of tuberculous or inflammatory foci. To sum up, one must, in the great majority of cases of suppurated coxalgia, seek to obtain anchylosis. However, one might preserve articular mobility when an early resection is practised, that is to say, as soon as an abscess around the articulation is suspected or established, because then the extent of the lesions of the soft parts being reduced to a minimum, one can hope for a very complete reparation of the articulation. Nevertheless M. Ollier does not recommend this procedure in all cases, as in many instances of suppurated coxalgias of childhood one can obtain cures by operations more simple than resection, such as the antiseptic opening of foci, injections of iodoform, drainage, etc.

A very interesting communication was recently made to the Société de Médecine Pratique by Dr. Sandras, who showed the falsity of the opinion that coca wine is the tightener *par excellence* of the vocal cords. The contrary was demonstrated by Dr. Sandras at the meeting of the society. After having sipped a tablespoonful of coca wine his voice became profoundly altered in intensity and tone. He therefore concludes that the coca wine paralyzes the vocal cords instead of strengthening them.

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OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JULY 6, 1889, TO JULY 12, 1889.

By direction of the Acting Secretary of War, the retirement from active service this date, by operation of law, of Colonel Thomas A. McParlin, Surgeon, under the provisions of the Act of Congress approved June 30, 1882, is announced. Colonel McParlin will repair to his home. Par. 2, S. O. 157, A. G. O., July 10, 1889.

Smith, Andrew K., Colonel, Surgeon U. S. Army, promoted Surgeon with rank of Colonel, to rank from July 10, 1889, vice McParlin, retired.

Town, Francis L., Lieutenant-Colonel, Surgeon U. S. Army, promoted Surgeon, with rank of Lieutenant Colonel, to rank from July 10, 1889, vice A. K. Smith, promoted.

By par. 1, S. O. 154, Hdqrs. Divn. of the Atlantic, July 9, 1889, Capt. H. O. Perley, Assistant Surgeon U. S. Army, is ordered to accompany troops from Fort Wayne, Mich., to Gognac Lake, Mich., to encamp there with the Michigan State troops from August 8th to 13th, 1889.

By par. 2, S. O. 151, Hdqrs. Divn. of the Atlantic, July 9, 1889, Capt. H. O. Perley, Assistant Surgeon U. S. Army, is granted fourteen days leave of absence, to commence about July 14, 1889.

Leave of absence for one month is granted Capt. W. C. Gorgas, Assistant Surgeon, to take effect on the arrival of a medical officer to relieve him. Par. 2, S. O. 84, Hdqrs. Dept of the Missouri, July 3 1889.

By the direction of the Secretary of War, Captain Andrew V. Cherbonnier, Medical Storekeeper, will in addition to his present duties take charge of the office and perform the duties of Acting Assistant Medical Purveyor in St. Louis, Missouri, during the absence of Capt. George T. Beall, Medical Storekeeper. Par. 2, S. O. 151, A. G. O., July 2, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 13, 1889.

White, S. Stuart, Assistant Surgeon, ordered to the Naval Hospital, Brooklyn, N. Y.

White, C. H., Medical Inspector, detached from the "Trenton" and wait orders.

Norfleet, Ernest, Passed Assistant Surgeon, detached from the "Trenton" and to the "Monocacy."

Ames, H. E., Passed Assistant Surgeon, detached from the "Monocacy ;" proceed home and wait orders.

Harrison, G. E. H., Surgeon, detached from the "Constellation" and to the Naval Academy.

Lowndes, C. H. T., Assistant Surgeon, detached from the "Constellation" and to the Naval Academy.

Harvey, H. P., Surgeon, detached from the "Vandalia," July 7 ; proceed home and wait orders.

White, S. Stuart, Assistant Surgeon, detached from the "Trenton," July 7, 1889.

SOCIETY NOTICE.

New York State Medical Association, Fifth District Branch. — The seventh special meeting of the Fifth District Branch of the New York State Medical Association will be held in Port Jervis, Orange Co., N. Y., on Tuesday, August 27, 1889. For those who are willing to spare the time after the meeting, a beautiful and interesting carriage drive of seven miles along the Delaware River to Milford, Penn., is promised. All are urged to make an effort to attend this meeting, as the committee of arrangements is making every preparation to insure an interesting meeting — both scientifically and socially

W. T. Lusk, M.D., President.
E. H Squibb, M.D., Secretary,
P. O. Box 94, Brooklyn.

THE CARTWRIGHT PRIZE.

The Committee of the College of Physicians and Surgeons of New York to award the Cartwright Prize send the following announcement: —

At the recent commencement of the College of Physicians and Surgeons of New York it was announced that the Cartwright Prize had been awarded to an essay written conjointly by Dr. Hobart A. Hare and Dr. Edward Martin, of Philadelphia. But the successful competitors voluntarily surrendered the prize because their essay had just been awarded a prize elsewhere. It appears that the essay had been put into competition for both prizes, with the expectation that the decision of one prize would be made early enough to permit them to withdraw from the second competition in case they were successful in the first. But owing to delay in the decision of the prize which should have been announced first, and to the absence of the authors from home when the announcement was finally made, there was no opportunity for the intended withdrawal before the award of the Cartwright prize was published.

The award of the Cartwright prize has consequently been reconsidered, and the prize has been granted to Dr. Ira Van Gieson, Assistant Instructor in Normal Histology in the College of Physicians and Surgeons of New York, for his essay entitled "Studies in Neural Pathology, embracing (1) A Report of a Case of Syringo-Myelia ; and (2) A Contribution to the Pathology of the Laryngeal and other Crises in Tabes Dorsalis."

DEATH.

Died in Northampton, July 11, 1889, Austin White Thompson, M.D., M.M.S.S., aged fifty-four years.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 6, 1889.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,571,558	956	566	39.52	7.28	33.80	.52	2.49
Philadelphia	1,040,245	422	224	24.72	9.36	21.12	.96	1.44
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	280	166	41.04	4.68	38.52	1.08	—
St. Louis	450,000	165	85	23.79	6.06	22.57	.61	—
Boston	413,567	189	76	30.74	11.66	21.73	1.06	6.36
New Orleans	250,000	108	37	26.68	13.80	14.72	1.84	1.84
Cincinnati	225,000	151	—	27.06	11.88	17.82	.66	—
Washington	225,000	120	51	30.71	11.52	24.07	3.72	.83
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	21	8	38.08	9.52	28.56	—	—
Charleston	60,145	37	20	24.30	8.10	18.90	2.70	—
Portland	40,000	12	4	8.33	8.33	8.33	—	—
Worcester	78,292	37	21	40.50	13.50	29.70	—	8.10
Lowell	71,518	45	28	37.74	15.54	35.52	—	2.22
Cambridge	65,552	34	21	38.22	11.76	29.41	2.94	5.88
Fall River	62,647	32	16	37.56	9.39	37.56	—	—
Lynn	53,334	16	—	12.50	25.00	—	12.50	—
Springfield	40,731	23	14	43.47	13.05	26.10	—	17.40
Lawrence	40,619	25	14	24.00	—	16.00	4.00	4.00
New Bedford	37,253	12	7	—	33.33	—	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	16	—	25.00	12.50	6.25	—	18.75
Brockton	28,813	8	4	—	—	—	—	—
Chelsea	28,167	16	—	31.25	12.50	25.00	—	6.25
Haverhill	26,058	11	10	81.81	9.09	81.81	—	—
Taunton	25,170	7	3	28.56	14.28	28.56	—	—
Gloucester	24,263	2	—	—	50.00	—	—	—
Newton	21,553	8	2	—	—	—	—	—
Malden	19,774	6	2	—	—	—	—	—
Fitchburg	17,534	8	2	12.50	—	12.50	—	—
Waltham	17,332	3	1	—	—	—	—	—
Newburyport	13,875	1	1	—	—	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	4	2	—	—	—	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 2755; under five years of age 1384; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1916, consumption 244, acute lung diseases 140, diarrhœal diseases 759, diphtheria and croup 60, typhoid fever 28, whooping-cough 18, measles 16, malarial fever 15, scarlet fever 13, cerebro-spinal meningitis 4, puerperal fever 2 erysipelas 1. From whooping-cough, New York 11, Philadelphia 3, Boston 2, Washington and Worcester 1 each. From measles, Cincinnati 9, New York and New Orleans 3 each, Nashville 1. From malarial fever, New York and New Orleans 6 each, Philadelphia Nashville, and Charleston 1 each. From scarlet fever New York 7, Baltimore 4, St Louis and Cincinnati 1 each. From cerebro-spinal meningitis, Cincinnati 3, Boston 1. From puerperal. fever, Washington 3. From erysipelas, Philadelphia 1.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending June 29th, the death-rate was 17.3. Deaths reported 3170; infants under one year 843; acute diseases of the respiratory organs (London) 169, diarrhœa 185, measles 99, whooping-cough 83, scarlet fever 41, fever 35, diphtheria 24.

The death-rates ranged from 13.0 in Bristol to 25.9 in Manchester; Birmingham 15.5; Bradford 16.4; Hull 22.1; Leeds 22.6, Leicester 20.1; Liverpool 20.5; London 15 2; Nottingham 14 9; Sheffield 169 Sunderland 21.9.

In Edinburgh 14.3; Glasgow 21.6; Dublin 21.2

The meteorological record for the week ending July 6, in Boston, was as follows, according to observations furnished by sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, July 6, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean	8 A. M.	8 P. M.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	Duration Hours & Min.	Amount in inches.
June 30	30.16	71.0	83.0	68.0	74	84	79.0	S. W.	S. E.	10	3	C.	C.		.00
July 1	30.29	71.0	77.0	66.0	77	86	82.0	S. W.		5		G.	C.	0.10	T.
" 2	30.28	67.0	72.0	64.0	90	93	92.0	S.	S. E.	3	6	O.	O.	0.48	.05
" 3	30.09	71.0	77.0	69.0	95	95	95.0	S.	S. W.	11	13	R.	R.	10.30	.48
" 4	29.87	70.0	78.0	61.0	88	92	85.0	S. W.	W.	14	9	O.	O.	8.46	.10
" 5	30.02	70.0	76.0	61.0	83	79	84.0	N. W.	S. E.	12	2	F.	C.		.00
" 6	30.18	70.0	80.0	61.0	81	72	76.0	N.	S. W.	10	9	C.	C.		.00
Means for the Week															

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow

Original Articles.

A CONSIDERATION OF THE USE OF GASES IN PENETRATING WOUNDS OF THE ABDOMEN.

BY HERBERT L. BURRELL, M.D.

Before the American Medical Association, at its meeting in May, 1888, Dr. Senn demonstrated what he termed an infallible test in the diagnosis of visceral injury of the gastro-intestinal canal in penetrating wounds of the abdomen by the rectal insufflation of hydrogen gas.

The importance of being able to detect an injury to the gastro-intestinal canal without performing a laparotomy was evident to the minds of most practitioners, and the thought which Dr. Senn had carried into effect of detecting a perforation in the gastro-intestinal canal by hydrogen gas at once placed it among the brilliant innovations. His method, in short, was as follows: —

Hydrogen gas, being insufflated into the rectum, would pass up the intestinal canal, through the perforation in the intestine, into the peritoneal cavity, and out through the wound in the abdominal parietes.

When it appeared at the abdominal wound it was there lit, a slight explosion occurred, and a bluish flame resulted.

After careful experimentation on a large number of dogs, Dr. Senn had concluded: [2] —

"That the entire alimentary canal was permeable to rectal inflation of air or gas under a pressure of from one-fourth of a pound to two pounds. That inflation of the entire alimentary canal from above downwards, through a stomach-tube, seldom succeeds, and should therefore only be resorted to in demonstrating the presence of a wound in the stomach or its immediate vicinity. That the safest and most effective rectal insufflator is a rubber balloon large enough to hold 16 litres of air or gas.

The resisting power of the intestinal wall is nearly the same throughout the entire length of the canal, and in a normal condition yields to disstaltic force of from eight to twelve pounds of pressure.

When rupture takes place it either occurs as a longitudinal laceration of the peritoneum on the convex surface of the bowel or as multiple ruptures from within outward at the mesenteric attachment.

The former result follows rapid and the latter slow inflation.

Hydrogen gas should be preferred to atmospheric air or other gases for purposes of inflation in all cases where this procedure is indicated. Hydrogen gas is devoid of all toxic properties, non-irritating when brought in contact with living tissues, and is rapidly absorbed from the connective tissue spaces and from all the large serous cavities. The escape of air or gas through the ileo-cæcal valve from below upwards is always attended by a blowing or gurgling sound heard most distinctly over the ileo-cæcal region. In gun-shot wounds of the gastro-intestinal canal, insufflation of hydrogen gas enables the surgeon to demonstrate positively the existence of the visceral injury, without incurring the risks and medico-legal responsibility incident to an exploratory laparotomy.

These were the propositions presented by Dr. Senn, and the profession at once assumed a questioning attitude.

The following objections were made to the method: —

First: That it made but little difference whether the wound existed in the intestinal tract or not. That an exploratory laparotomy was indicated in every penetrating wound of the abdomen.

Second: That the test was not infallible, from mechanical obstruction of the intestine or intestinal flexures.

Third: That the contents of the intestine would be blown out into the peritoneal cavity.

Fourth: That a mixture of hydrogen gas and air would result in an explosive compound which might do injury, not alone to the patient, but to the surgeon and assistants.

Fifth: That arseniuretted hydrogen from impure zinc might be generated, and that here lurked a danger, in that poisoning might occur.

Any one who has carefully studied the experimentation that Dr. Senn carried out preliminary to presenting his conclusions, cannot help being impressed by its thoroughness and thoughtfulness.

The problem was presented to me in August, 1888, of whether there was a perforation of the intestinal canal in a stab wound of the abdomen.

The following is a history of the case: —

W. F. D., male, æt. 45. August 25, 1888. At about four o'clock this morning, patient was coming out of his house, when he was stabbed in the right side by an unknown man, who immediately turned and ran away. Patient is a large, well-developed man, with fat, flabby, abdominal walls.

Extending from a point one and one-half inches in front of right anterior superior spine of ilium downwards and inwards is an incised wound about one inch in length, with clean-cut edges; probe enters easily three quarters of an inch; small shreds of clothing in wound; slight hæmorrhage; general condition of patient good; no shock; very little pain. Six hours after accident patient etherized, and hydrogen gas was insufflated into the rectum under gentle pressure; abdomen much distended; lighted match over wound fails to cause any ignition of the gas; a slight cracking was felt over the wound, and a small knuckle of intestine was found caught in the wound. Wound enlarged upwards and downwards to about three and one-half inches; knuckle of intestine drawn out and found to have been slightly wounded at its mesenteric attachment; small ecchymosis about point of injury; a few small blood-clots removed; intestine and wound irrigated with 1 : 10.000 of corrosive sublimate, and returned to abdominal cavity. Wound closed with four deep silk sutures through abdominal wall and peritoneum, and superficial silk sutures.

Dressed with sterilized gauze and sheet-wadding; broad cotton-flannel swathe.

Patient's recovery was uneventful; the distention from the gas passed away within an hour, and his temperature never rose above 99°.

So far as known to the writer there have been seven applications of the hydrogen gas test made to detect wounds of the intestinal canal: —

One case, pistol-shot wound (.38 calibre) of abdomen. Mackie.[3] Two wounds of the stomach, two of the small intestine, and several wounds of the mesentery; all of the wounds detected. Death from septic peritonitis.

Two cases[4] where Fenger applied the test to pistol-shot wounds of the abdomen. The first case is important, for the information obtained by the insufflation of hydrogen negatived a laparotomy, yet six days later Fenger did a laparotomy on this patient and found an abdominal abscess in the coils of the intestine. The patient died eight hours later, and at the autopsy, on separating the adhesions, three more pus cavities were found and general peritonitis. No perforations of the intestines were found, and the inference is that septic peritonitis occurred from failure to properly cleanse the primary bullet wound. Fenger's second case demonstrated satisfactorily the hydrogen test, but ended fatally. Fourteen perforations were found, besides two severe contusions.

One case, pistol-shot wound of the stomach.[5] Patient died on the table from shock and the severity of the injury. Hydrogen test satisfactory.

One case, gun-shot wound (.44 calibre.)[6] Nine perforations of the intestinal canal. Death from shock. All the intestinal wounds found closed at the autopsy.

Two cases by Senn.[7] First case is really remarkable (rifle-shot wound .22 calibre). Twelve perforations were found in the intestines; the last was situated in the deepest portion of the pelvis, and would have doubtless been overlooked had not hydrogen been used. A most desperate case, and yet recovery ensued. Second case, rifle-shot wound (.22 calibre). All the perforations detected and closed. Death from septic peritonitis, which existed at the time of the operation.

Before the use of hydrogen was suggested by Senn we determined the presence of an injury of the intestinal canal by inference, from the symptoms presented by the patient, or by looking at the whole intestinal tract after an exploratory laparotomy. The first method, by inference, was too uncertain to be of any value; while the second, by laparotomy, was attended by considerable risk, not alone from the shock of a prolonged operative procedure, but from the danger of overlooking some of the intestinal wounds.

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[1] Read at the meeting of the Surgical Section of the Suffolk District Medical Society, April 3rd, 1889.

[2] Journal Am. Medical Association, June 23-30, pages 767 and 807.

[3] 1 Med. News, June 9th, 1888.

[4] J. Am. Med. Assoc., J. L. Hillmantel, July 21, 1888, p. 83.

[5] Senn. Med. News, Aug. 25, 1888, p. 202.

[6] Schenck, W. L. Jour. Am. Med. Assoc., Oct. 13, 1888, p. 521.

[7] Med. News, Nov. 10, 1888, p. 528.

Concerning the value and importance of Senn's method there can be but little question. It, however, seemed to the writer that the hydrogen gas test would fail to be generally adopted by the profession, owing to the difficulties attending the securing the gas and the sensational and apparently dangerous way of testing for it, that of lighting the hydrogen, and that consequently Senn's brilliant effort would fall short of its true worth, resulting in a serious loss to surgery.

This led me to see if Senn's method could not be modified so as to combine safety and simplicity in its application and accuracy in its determination.

Senn's reasons for selecting hydrogen gas were apparently: that it is the lightest gas known; that it is innocuous and non-irritating; that its ignition at the seat of the abdominal wound demonstrates its presence, and its burning will asepticize the wound.

We have in the intestines Co_2H, N, CH_4, and SH_2, in varying quantities, according to the diet of the patient;[8] reasoning by analogy, if hydrogen could be used to inflate the intestines, any of the above non-poisonous gases, including air, might be used as well as hydrogen, for all of them are sufficiently diffusible, especially under pressure, to be used for this purpose. From a physiological standpoint there seemed to be no reason why H, O, CO_2, or air might not be used.

Regarding the ignition of the gas at the abdominal wound, this seemed to the writer to be a disadvantage, and the point of antisepticizing the wound is not one of any importance.

I determined, therefore, to try Co_2, O, H, and air. Co_2 is readily obtainable by the action of HCl on marble; H by the action of some acid on Zn; O can be readily obtained at a slight cost in iron cylinders, under pressure; while air is free to all without the asking.

This accessibility of air is a matter of the greatest importance, for the delay incurred in procuring other gases might readily prove fatal to the patient. A series of experiments were instituted and all of the above gases were tried on dogs. I attempted to ascertain —

The best arragement for carrying out rectal insufflation.

To find a more satisfactory gas than hydrogen, and to determine a practicable test for the gas used, either chemical or physical.

To demonstrate the practicability of the gas selected and the tests chosen, upon dogs and other animals.

Method of rectal insufflation. — I should always give an enema before beginning insufflation, for, of course, fæces might readily occlude the lumen of the tube. The apparatus necessary for rectal insufflation is a rubber bag of about sixteen litres capacity, a few feet of rubber tubing, and a glass rectal tube. Useful and almost necessary accessories are a wash bottle and manometer. The apparatus is arranged for use in the following manner: the bag is first inflated with air or gas to be used, and by means of a rubber tube is connected with the wash bottle. The manometer is then connected to the wash bottle by means of a T tube, and to the remaining end of the T is attached a rubber tube bearing the rectal tube.

The tube being introduced a short distance into the rectum, the stop-cock in the bag is carefully opened and the air or gas is allowed to bubble through the wash bottle, when the mercury in the manometer will rise more or less according to the resistance at the end of the rectal tube.

In order to prevent the escape of the air or gas outward, it is necessary to tightly grasp the sphincter about the tube. It is perhaps on this more than on any other point that success or failure depends. The rectal tube should be double, that is, a tube within a tube; this is readily improvised by placing a small piece of glass tubing within a larger one drawn out somewhat to a point and joined together by means of a section of flexible rubber tube. By this means the outflow of air or gas is seldom obstructed. In introducing air or gas into the rectum the following points may be noticed: If there is bubbling in the wash bottle and a proper pressure is indicated by the manometer, air or gas is passing into the intestinal tract. If there is bubbling in the wash bottle and no pressure is indicated by the manometer, or very little, there is leakage about the rectal tube. If there is no bubbling in the wash bottle and a high pressure is indicated by the manometer, there is obstruction to the entrance of air or gas, either by stoppage of the tube by fæces, or by the impinging of the end of the tube against the rectal wall. When the air or gas is going in there is very little question about it, for the inflation proceeds with great regularity.

The length of time that is consumed in insufflation per rectum has varied very greatly, and the above factors have assisted me considerably in carrying out the procedure.

As to the proper pressure to use, Senn has advised from a quarter of a pound to two pounds to the square inch. This pressure in my hands has been sufficient in all cases, and I believe is perfectly safe. Senn states that the inflation must always be made slowly and under steady pressure. I consider both of these points of the greatest importance, and they should be strongly enforced. He further found by experimentation that healthy intestines do not rupture under a pressure of less than eight to twelve pounds.

The writer has found that with a man of about one hundred and fifty pounds weight sitting upon the inflated bag and the end of the rectal tube closed, a pressure of only one and a half pounds to the square inch is indicated. When the air is flowing through the wash bottle at a rate a little faster than one can count the bubbles, the pressure will be about half a pound to the square inch, so that the wash bottle becomes an approximate measure of the pressure.

If necessity demands it, the wash bottle and manometer could be dispensed with, since the greatest pressure which would be obtained under the above conditions is far below that required to produce a rupture of the intestines. Still both wash bottle and manometer should be used when practicable,

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[8] The following table shows the proportion in which certain gases occur in the intestinal canal. 1 Ruge. Wien. Sitzungsberichte, 1862, p. 729.

CO^2	40.50	H	22.20
N	17.50	SH^2	a trace only
CH^4	19.77		

as they place the whole procedure on a more accurate basis.

In the absence of a regular gas bag, the surgeon might readily utilize any of the air receptacles that are in common use, such as a football, air life preserver, or air pillow. The point is simply to have an elastic receptacle for the air, that one may secure a steady, uninterrupted pressure in insufflation.

Experiments with gases and air on dogs. — I accepted that the gastro-intestinal canal was permeable to hydrogen, from Senn's experiments.

A small French poodle was etherized, and a stomach tube passed down his œsophagus; this tube was connected with a wash bottle containing a baryta solution. Rectal insufflation of carbonic dioxide was slowly and carefully made, from an eighth to a half of a pound of pressure being used. Carbonic dioxide soon began to appear, bubbling up through the baryta solution and rendering it milky. The dog soon recovered from the effects of the anæsthetic and the carbonic dioxide, and was perfectly well in every respects afterwards.

The insufflation bag was filled with expired air from my own lungs. A water spaniel was etherized and a stomach tube inserted, which was connected with a wash bottle. Under a half of a pound pressure, the air which was insufflated by the rectum soon appeared in the wash bottle, where the bubbling was quite vigorous. The bubbling could be made more or less prominent by increasing the pressure on the inflation bag. This dog soon completely recovered.

A cur collie, sixty pounds, was next insufflated with oxygen after etherization, but for some unknown reason I failed to demonstrate the permeability of the whole canal by the stomach tube. The abdomen being uniformly distended by the oxygen, the collie was twice stabbed with a knife six inches in length and a half an inch blade. The first stab, just to the right of the navel, was only three inches in depth, and apparently did not wound the intestine. The second stab was just to the left of the navel, and six inches in depth. Under gentle pressure on the abdomen the gas came bubbling out of the wound. The slightest pressure on the abdomen or increase of pressure on the bag caused more active bubbling at the wound. A blown-out but glowing match was held in contact with the current of gas bubbling out of the wound, and the match immediately broke into a flame. This was repeated a number of times, the match glowing and subsiding and glowing again. A glass tube which had been drawn to a point was introduced into the wound and the gas was conducted into a wash bottle. Oxygen was again demonstrated as it issued from the wash bottle. The abdomen was then opened, the intestines were found distended, and here and there were found springs of gas bubbling up, coming from the seats of injury.

This bubbling up of the gas, the abdomen being partially filled with hot water, is a very striking phenomenon, and led the investigator at once to the intestinal wounds. No extravasation of fæces. The largest wound was a longitudinal slit one-third of an inch in length, in the ilium.

Brown and white spaniel, etherized. Shot through the abdomen, transversely (.22 calibre). Bullet lodged at a point diametrically opposite, under the skin. Hydrogen insufflation was carried out under an eighth to a half a pound of pressure, until the abdomen was uniformly distended by the gas, but it did not appear at the wound of entrance.

Bullet cut down upon, and a rush of gas heard and the bubbling seen. Hydrogen ignited and burns with a flame three inches in length. Abdomen opened. The pelvis in this case was found filled with blood; the intestines moderately distended. Three lacerated wounds of ilium were found, and one of the vermiform appendix, from which there was a blowing out of fæces. The spleen, left kidney, and aorta had been perforated by the bullet. The hydrogen in this case did not come through the wound of entrance, owing to the obliquity of the track of the bullet, and the shifting of the planes of abdominal muscles during distention.

At this point I became convinced that the physical test for the gases, that of the bubbling and hissing at the wound, was all that was necessary to demonstrate their presence. Just here it may be said that in the application of the chemical tests for the gases in the foregoing cases a little sensationalism is introduced, which, while it may be gratifying to the operator, is entirely unnecessary. For in all my experimentation the first indication of the presence of air or gas has been bubbling and hissing at the wound, and the application of any chemical test has been to identify the individual gas used. This identification of the gas is superfluous, for unless the gastro-intestinal canal is perforated there can be no escape of air or gas. So that the escape of air or gas in any quantity is as marked a phenomenon as any we could have, and is positive evidence of a perforation and a guide to the seat of injury.

I therefore decided to select air as the simplest, safest, and most readily obtainable agent that could be selected for this purpose.

If exception is taken to air as compared with hydrogen on account of its septicity, it may be said that any gas which is selected for use must pass over a tract laden with germs, and hence this objection is not tenable.

Further experimentation was made with air.

A small brown spaniel, after etherization, was shot transversely through the abdomen (.22 calibre). Air insufflated per rectum under a pressure of an eighth to a quarter of a pound pressure. A slight bubbling occurred at the wound of entrance in three minutes, but quickly stopped. Considerable difficulty in preventing the escape of air about the rectal tube. Finally, the wound of entrance was enlarged, when the air came bubbling and hissing out of the peritoneal cavity. Again we had the parietal wound shut off by shifting of the planes of muscles of the abdomen, during distention. A glass tube connected with a wash bottle was introduced through the wound into the peritoneal cavity, when bubbling in the wash bottle could be made more or less vigorous by pressure on the bag. Autopsy: No fæcal extravasation. A double wound through the ilium was found which would have necessitated resection of the intestines.

The perforation in this case could have been demonstrated in from seven to ten minutes had the rectal tube worked well.

A small black poodle was etherized and shot transversely through the abdomen (.22 calibre). Air insufflation; tested at the wounds of entrance and exit of the bullet: negative. Abdomen fully distended. In twelve minutes an incision one and a half inches was made in the linea alba, peritoneum nicked, and immediately there came a hissing and bubbling of air from the peritoneal cavity. Wound at once enlarged to three and a half inches. An unsuccessful attempt was made in this case to save the dog by closing the six intestinal wounds. Operation lasted one hour and forty-two minutes. Six intestinal wounds were secured and three intestinal resections were made by Dr. H. W. Cushing. A great deal of hæmorrhage occurred from the wounded mesenteric vessels. The greatest assistance was rendered by the air insufflation in finding the sites of injury, some of which Dr. Cushing and I felt might readily have been overlooked had it not been for the insufflation of air. Finally, the patency of the whole canal and the security of the intestinal sutures having been tested by air insufflation, the abdomen was closed. The dog survived the operative procedure twelve hours.

At the autopsy, all of the wounds were found tightly closed by "the right angle suture," and the peritoneal cavity free from any effusion.

The rapid subsidence of the intestinal inflation has been a matter of astonishment to the investigator. Not the slightest difficulty has ever been experienced in replacing the intestines within the peritoneal cavity.

The insufflation of air or gas is open to the following objections: —

First, mechanical distention of the patient's abdomen.

Second, the additional apparatus necessary to apply the test.

Third, that laparotomy is always indicated, and that the information obtained by the gas test is superfluous.

Fourth, that the air or gas used may blow out fæces into the peritoneal cavity.

Fifth, that danger exists in the use of gases from their possible poisonous effects, and the possibility of explosion in testing for certain gases.

Conclusions.—That Senn has demonstrated that by a gas test we have a means of obtaining important information, where there is a question whether the gastro-intestinal canal is wounded or not; that the test has been applied to patients, and found to be of great importance; that at present it is unwise to claim for the test infallibility; that it is still *sub judice*, but should receive a careful trial in all cases, that not alone its diagnostic value may be determined but its medico-legal value be accurately placed.

That its position as a test, when obtained, is of great importance; but that, because air or gas does not come out of the wound in the abdominal parietes, does not prove that there may not be a perforation of the intestinal canal.

That in air we have an agent whose presence can be determined by rectal insufflation in punctured wounds of the gastro-intestinal canal; that hydrogen, oxygen, carbon dioxide, and other gases can all be used for this purpose.

That probably in all cases the insufflation of air may be followed by sight and hearing throughout the course of the large intestine, and all observers speak of the gurgling that takes place when the gas passes the ileo-cæcal valve into the small intestine.

That one of the most important applications of the air test will be to determine whether all the wounds in the intestine are closed, to demonstrate the competency of the intestinal sutures, and the permeability of the canal after intestinal suturing or resection.

That contrary to what might naturally be expected, experimentation has thus far demonstrated that air or gas rarely blows fæces into the peritoneal cavity; that, even if it does, the information obtained by the test is of such importance that the objection may be disregarded.

That in punctured wounds of the abdomen (by this is meant perforation of the peritoneal cavity) laparotomy is always indicated; not necessarily to deal with the perforations of the intestinal canal, but that antisepsis may be established and hæmorrhage controlled.

From an operative standpoint I should divide penetrating wounds of the abdomen into two classes. First, where from the use of a knife or from a small bullet the surgeon is in doubt whether the intestinal tract is wounded or not. Second, where it is almost self-evident from the symptoms of the patient, or the character of the projectile used, that the intestines are surely wounded. In the first case, where there is a question whether the intestinal tract is wounded or not, I should insufflate air per rectum, and if it were demonstrated that the intestines were perforated I should proceed with a median laparotomy. If, on the other hand, no evidence is obtained from the air test that the intestinal tract is wounded, I should enlarge the punctured wound, cleanse carefully, and unite the wound. In the second case, where the gastro-intestinal canal is undoubtedly wounded, I should perform a median laparotomy, and then carefully distend the intestines by rectal insufflation of air, keeping the abdomen partially filled with hot water, to prevent shock. The bubbling of air would demonstrate the points of the wounds in the canal, and thus shorten the operative procedure.

After securing each wound of the canal, I should again insufflate air, and in this way I think time could be saved in this serious class of cases.

During this investigation I have received the assistance of a number of gentlemen, and it is my desire to acknowledge my indebtedness to them.

Especially to Mr. G. R. Tucker, chemist and bacteriologist, I desire to express my gratitude for the valuable suggestions and hints that he has made, which have materially assisted in the investigation.

TWO CASES OF LAPAROTOMY FOR PENETRATING WOUNDS OF THE ABDOMEN, WITH REMARKS.[1]

BY ARTHUR T. CABOT, A.M., M.D.

Since Dr. Bull's first case of pistol-shot wound of the intestines awakened interest in the treatment of these injuries, and in view of the constantly increasing list of patients successfully treated in the same manner, the duty of the surgeon to endeavor to repair intestinal injuries made by penetrating weapons or missiles has been almost universally accepted.

The following cases are presented as a contribution to the statistics of this class of injuries.

Case 1. Stab wound of the abdomen: recovery.

Margaret K., who gave her age as about fifty, but who looked much older, entered the Massachusetts General Hospital August 18th, 1886. She was a spare, frail-looking woman. A little more than an hour before entrance she had been attacked by a man with a large pocket-knife. There was a long superficial cut on the right side of her neck, also a cut in the left labium. The abdominal injury was a punctured wound through the outer edge of the rectus muscle on the left side, about an inch below the level of the umbilicus. The patient was pale, as if she had lost considerable blood. She was not suffering much pain.

An immediate exploratory operation was undertaken to see whether the peritoneum was opened, and if so, whether any internal injury had been done. As it was found that the knife had entered the abdominal cavity, the opening was enlarged enough to examine the viscera. One or two ounces of clotted blood lay in front of the intestines; this was sponged out, and a careful examination made of all the coils of intestine lying near the point of puncture. No wound of the intestinal wall was found, and there was no further bleeding as from wounded viscera; the incision was therefore closed. The patient recovered well from the ether, and was reasonably comfortable, with moderate abdominal pain.

August 21st (the third day). The dressing stained through, and on investigation it was found that the stitches, which were of paraffined silk, had slipped their knots, and a little mass of omentum about the size of a child's fist had protruded. Ether was given, and after returning the omentum to the abdominal cavity the wound was firmly sutured. From this time recovery was uninterrupted, and the patient left the hospital well in the early part of September.

In this case the anæmic, feeble condition of the patient gave rise to the fear that hæmorrhage was going on inside the abdomen. In the absence of much blood in the peritoneum it is probable that there had been a greater loss of blood from the external wounds than was thought at the time.

Case 2. Pistol-shot wound of the stomach: laparotomy and suture of the stomach wall; recovery.

Robert E., twenty-one years old, entered the Massachusetts General Hospital the evening of July 3rd, 1888.

Two hours previous to entrance, while standing beside a companion who was handling a revolver, he had been accidentally shot in the abdomen. The distance from the muzzle was about three feet. The ball, of 22 calibre, entered the body two inches above and one inch to the left of the umbilicus. The accident happened about an hour after he had taken a full supper. When seen he was suffering a moderate degree of pain about the wound, and this was increased somewhat by taking a long breath. On palpation there was some tenderness around and above the wound. He had not vomited nor felt any nausea. Laparotomy was advised and at once done.

A vertical incision three inches in length was made so that the bullet opening lay in the middle of it. The transverse colon at once presented in the wound, and was carefully examined for a considerable distance on either side; its mesentery was also inspected, but no wound found. The stomach was then drawn down into view, and at once the bullet hole was seen at about the middle of the anterior wall.

The wound was a simple puncture, which did not gape, and through which there had been no escape of the stomach contents, even though the patient had vomited quite freely while going under the influence of the ether. The hole was turned in, and closed by five interrupted Lembert sutures of fine silk.

The close condition of the wound in the anterior stomach wall, and the absence of extravasation of the stomach contents through it, made it seem wiser not to extensively separate the omental attachments of the organ in order to get at the posterior wall. This would have involved a much larger abdominal incision, and from the apparent line of the bullet it seemed likely that the wound of exit was close to the smaller curvature, where it would have been reached with difficulty, and at the expense of considerable violence of manipulation.

Further search was therefore not attempted, and the abdominal wound was closed.

The patient vomited much after the ether, but otherwise did well.

For three days he took nothing into his stomach but a little water; he then began to take milk and lime water cautiously, and gradually resumed ordinary food.

On the seventh day his bowels acted freely after a senna enema.

He was out of bed on the fifteenth day, and went home at the end of eighteen days.

Since then he has been seen several times, and although he has suffered somewhat from debility, and has not regained fully the flesh that he had before his accident, yet the most careful and thorough examination fails to reveal local trouble anywhere either in the abdomen or chest.

Shortly before the occurrence of my second case Dr. Senn, who has done so much excellent experimental work in the abdominal cavity, suggested a new way of determining whether a penetrating wound of the abdomen opened the alimentary canal or not. This was by the injection into the rectum of hydrogen gas, which, if it escaped through the wound in the abdominal wall, could be ignited, and thus demonstrate beyond doubt the existence of an opening somewhere in the intestinal tube. He has shown, by experiment, that the hydrogen gas will thus make its way out; and I believe that until now it has escaped any admixture of oxygen which might form with it an explosive compound and make its ignition a dangerous matter.

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[1] Read at the meeting of the Surgical Section of the Suffolk District Medical Society, April 3rd, 1889.

Dr. Senn's experiments have shown that the gas finds its way upwards through the whole alimentary canal, and in one case he determined the existence of a perforation of the stomach by the escape of gas through a bullet wound in the lower part of the chest.[2]

Dr. Senn's other work in abdominal and other branches of surgery has been so full of practical suggestions, that a surgeon having a perforating wound of the abdomen, and neglecting to apply a test so highly praised by him, is open to the charge of a disregard of necessary precautions if he cannot show good reasons for his neglect. This must be my excuse for setting forth certain considerations which still deter me from the use of insufflation in these cases. Further experience may show the objections I shall state to be purely theoretical, but until this is demonstrated I shall prefer to treat wounds of the human abdominal cavity in a less experimental way.

Hesitation to use insufflation for the perfection of diagnosis may arise from two fears: one, that it may sometimes fail as a means of testing the condition of the intestines, whether injured or not; and the other, that it may introduce additional dangers into the case.

That it is possible in most cases to demonstrate the existence of a perforation of the intestine in this way has been abundantly shown. Whether the injection of hydrogen furnishes an infallible test may well be doubted. The abdominal wall being made up of separate layers of muscles and other tissues, which shift upon each other with every movement of the body, it must now and then happen that the opening through it is tightly closed, and will not permit the passage outward of gas that has escaped among the intestines. Errors from this cause may generally be avoided by the introduction through the wound of a pair of dressing forceps, a director, or a tube; but with a thick, fat, abdominal wall these measures may fail, especially if the omentum plugs the wound on the inside.

Again, suppose a bullet perforates a coil of intestine that is full of liquid fæces. It is evident that the gas cannot escape through until it has pushed the liquid out before it.

If it is acknowledged that the gas will sometimes not escape even though the intestine is injured, what guidance does the surgeon get from its use in deciding the question whether in a given case to explore the abdomen? In the cases in which the hydrogen gas test succeeds in demonstrating a perforation, we shall certainly do laparotomy.

But what are we to do in the cases in which it does not succeed? Are we then justified in not doing an exploratory operation?

This is the question which the surgeon has to meet; and until it is shown that the fear that in a certain proportion of cases of perforation the test will fail is groundless, he must either do a laparotomy, even in the cases in which hydrogen gas does not issue through the external wound, or he must expect to leave some cases of perforation not operated upon.

Furthermore, it should be remembered that perforation of the intestine is not the only injury wrought by penetrating wounds, which it is the surgeon's duty to rectify. Serious lacerations of the mesenteric or other vessels may exist even without a perforation of the intestine. In both of the cases of intestinal suture reported by Dr. Senn in the Philadelphia *Medical News* of November 10th, 1888, there was profuse bleeding from the mesenteric veins, and the ligation of these was one of the important benefits of the operation.

It is the strong chance of such accidents as this, and the feeling that there will be cases in which perforations of the intestines or stomach will escape the hydrogen gas test, that make the writer feel that in the cases where no hydrogen emerges from the outer wound the surgeon would still not be justified in foregoing an exploratory operation.

If this feeling is borne out by facts, and an exploration is called for whether the hydrogen test succeeds or not, it is obviously a waste of time to apply the test, even supposing the injection of the gas to be a harmless proceeding. But is this last supposition correct?

Dr. Senn says that the gas is aseptic and therefore innocuous. Does he mean by this that the gas, after passing through many feet of intestine, enters the peritoneal cavity in an aseptic condition? And what is to be said of the intestinal contents that the gas drives along with it? They are certainly not aseptic, and it is therefore evident that there is a strong possibility that the injection of gas may add to the dangers of a given case, and should not be lightly used.

What has been said up to this point applies only to the use of the gas for diagnostic purposes before an incision has been made.

There is another use of gaseous insufflation to which Dr. Senn calls attention in the paper already referred to, which may be of great service.

After closing all of the perforations that he could find, he again injected the hydrogen into the rectum and it at once began to bubble up from the pelvis. Following down the sigmoid flexure, and compressing it at different points, the gas still escaped until he reached the rectum, where he found and closed a last wound.

Continuing the injection, he saw the gas go up past the openings that he had closed, and, finally, stopping the injection to avoid the too great distention of the bowels, he pressed the gas already introduced upwards from coil to coil until he reached the duodenum and stomach, without finding any more perforations.

This application of the insufflation, after all of the openings that can be readily found have been closed, seems to be of undoubted value. It enables the surgeon to make a quick but thorough exploration of the bowels with the least possible amount of handling. The gas escapes at once into the air, and does not carry impurities throughout the abdominal cavity, and if it carries with it liquid fæces their escape is at once perceived and they are quickly removed by irrigation.

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[2] In this case the injection was made directly into the stomach.

For this exploration it would seem that air would be equally good with hydrogen gas.

The suggestion of this procedure adds one more to the capital points in abdominal surgery for which we are indebted to Dr. Senn.

To return now to the consideration of the cases reported. In both of them laparotomy was performed at once when they were first seen.

This practice of immediate laparotomy, without waiting for convincing symptoms of serious intra-abdominal lesion, seemed wise, for the following reasons: —

First: It was felt that the enlargement of the penetrating wound through the abdominal wall added little or nothing to the severity of the injury, and would give the opportunity to discover and repair any lesion of the intestines or other abdominal contents before the occurrence of peritoneal inflammation. The absence of danger in a simple incision into the abdomen is generally recognized.

Secondly: We know that symptoms are often very poor guides to an appreciation of the severity of intra-peritoneal injuries, and if we wait until the patient's condition demands an operation, we shall often find that a serious inflammatory condition has arisen, which we are powerless to stop, even though we may succeed in closing the intestinal wound that gave rise to it.

The cases are as yet too few to determine the ratio of the increased danger in delayed operations, but experiences are not wanting to show that it is very large.

Thirdly: In the event of any considerable vessel being injured it is, of course, important to stop the bleeding early before the patient is seriously exhausted. Here again, if we wait until the symptoms of internal hæmorrhage are unmistakable, we shall run a serious risk of letting the patient slip into a condition from which he cannot be recovered.

In view of these considerations it seemed to the writer, and he still thinks it a good rule in practice, that — in a case of penetrating wound of the abdomen, made by a sharp weapon or by gun-shot — the wound should be followed carefully down until the operator is convinced that it enters the abdominal cavity. When this is established the peritoneum should be opened with enough freedom to allow of a sufficient inspection of the abdominal contents, and for the repair of any injury found.

It seems probable that by this immediate operation cases will be saved which would be lost if time were given for the peritoneum to inflame or for serious loss of blood to occur; whereas with proper care in making a clean, aseptic operation the surgeon will rarely, if ever, feel that he has added to his patient's risk by the exploration.

TWO CASES OF PENETRATING WOUND OF THE ABDOMEN.

TREATMENT BY LAPAROTOMY.[1]

BY F. B. HARRINGTON, M.D.

Case I. Knife wound of the abdomen with protrusion of the omentum: laparotomy: recovery.

A. D., thirteen years old, came to the Massachusetts General Hospital, September 10th, 1887. He was stabbed in the abdomen with a knife, about midway between the umbilicus and pubes, and two inches to the left of the median line. The wound was about one inch in length. Through this wound protruded a mass of omentum, completely plugging it. The wound was enlarged to about double its size. This allowed an easy reduction of the omentum, and gave an opportunity to inspect the intestines lying directly beneath the incision. The omentum, when returned to the abdominal cavity, began to bleed. The constriction made by the edge of the incision had controlled the bleeding until this constriction was removed. The bleeding points were tied. No injury to the intestines was found, and nothing pointing to such injury was seen. The patient was about the ward on the eighteenth day, the wound having entirely healed.

Case II. Pistol wound of the abdomen: laparotomy; death.

W. G., a teamster, twenty-four years old, was brought to the Massachusetts General Hospital, August 6th, 1888, at about 6.30 p.m., pulse 80, temperature 100.8°, respiration 30. He had been shot one-half an hour before. Examination showed a strong, vigorous man. A bullet wound in left chest between first and second ribs, three fingers-breadth from the clavicle's sternal end. There was a bullet wound one inch below the umbilicus and two or three fingers-breadth from umbilicus in left side. There was also a bullet wound on the inner side of the femoral vessels in Scarpa's triangle. No bleeding of any account from either wound. Wounds not probed. The urine was drawn by catheter and found to be bloody, but there were no clots. Spit some blood from the throat. No cough. No pain in chest. Abdomen tender. Pain in small of back. The flanks are flat on percussion, otherwise the abdomen was tympanitic. Morphia and brandy were given.

At 8.30 the urine was more bloody. The pulse had become rapid. The patient seemed to be sinking from loss of blood. It seemed best to attempt a laparotomy. Two quarts of blood mixed with intestinal contents were evacuated. Blood and intestinal contents were flowing into the abdominal cavity freely. Three holes in the small intestine and two lacerated wounds of the intestine were sewed up with silk. The abdomen was washed out with warm water. The posterior course of the bullet was not determined. It was thought that it might have cut the ureter or have entered the kidney. The patient rallied slightly, but died at 12.20 in the morning. On autopsy it was found that the left kidney had been pierced by the bullet which had injured the intestines. There was considerable hæmorrhage into the perinephritic tissues. The abdominal cavity, upon removing the intestines, was found to be perfectly clean, notwithstanding the large amount of blood and fæces which it had contained before washing. No other intestinal wounds were found. The bullet wound of the chest passed through the apex of the lung. No wound of the intestines had been overlooked. Insufflation was not used.

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[1] Read at meeting of Surgical Section of Suffolk District Medical Society, April 3rd, 1889.

CREASOTE IN CERTAIN GASTRIC DISTURBANCES.

BY JOHN A. JEFFRIES, M.D.

Creasote has been used and recommended in troubles of the stomach for many years, but has of late, it seems to the writer, fallen into desuetude. Yet it is an efficacious remedy in a class of common stomach troubles, which if not marked by any serious pathological changes are fraught with annoyance and distress to the patient.

A patient comes with a complaint of distress after meals and acid taste in the mouth, the belching of wind, and perhaps disturbed action of the bowels, and general discomfort or sense of weakness, is out of sorts with himself and the world, and may even suffer from irregular vomiting.

The modern specialist on the stomach passes the stomach tube after a test breakfast, and finds perhaps quantitative changes in the constituents of the gastric juice and an increase in the amount of mucus. The diagnosis may read as an increase or diminution in the acids or as simple fermentation. The treatment will begin with washing out the stomach, and in most cases, according to my experience, results in a cure.

The trouble is that though washing out the stomach is not difficult it is highly objectionable to the average patient, and in a hospital out-patient service is out of the question on the score of time.

It is desirable, therefore, to have as many strings to our bow in the shape of drugs as possible, and creasote is a good one. It was formerly used with carbolic acid in vomiting, and is thus recommended by Barthelow. Starting with Barthelow's recommendation I began the use of the two drugs combined, in vomiting, and got good results, but fearing the carbolic acid shortly left it out. From this the use of the drug was extended to the various indigestions, and it is my object to present a short analysis of the cases in which I found it useful or useless.

First, it is a good sedative in vomiting where the cause is general and uncontrollable, or unknown, and is thus mentioned in most of the books on therapeutics. Beside this it is of use in vomiting induced by fermentation, and thus comes into play in the summer gastro-intestinal trouble of infants, as the following case illustrates: —

July 2, 1887. M. K., six months; breast fed; cutting a tooth. Seized this morning with diarrhœa and vomiting, the ejected matter being almost clear water with a few flocculi. Eyes sunken, fontanel the same; abdomen drawn in; body hot, temperature in the rectum 101°, limbs cold; pulse small, rapid, could not be accurately counted.

The treatment consisted in a drop of creasote, five grains of bismuth in cinnamon water, every three hours at first, and scalded milk with brandy in ounce doses between. The milk was given as being the best food I thought the child would get. The vomiting stopped for a time after the first dose and ceased during the afternoon. On the 3rd there was less diarrhœa and no vomiting. On the 4th neither vomiting nor diarrhœa. The next day slight green diarrhœa began, but on the 9th my notes record the child as well and the tooth cut.

A score of other cases could be given where vomiting in infancy has ceased after the administration of creasote, but I have but one other which approached the rice-water ejecta of the above. Water has often been vomited, but as often questioning has shown that the infant has recently had a drink.

The diarrhœa usually coexisting in these cases has not seemed to be influenced, though promptly ceasing with the use of other drugs.

In adults the symptoms are more variable, as also the results. The following cases are selected from a number as illustrating the differences in both: —

Case II. August 28th. Male, forty-one years, married. Complained of pain, tenderness, and stiffness in left lumbar region; pain and tenderness over the ensiform cartilage, and an "empty acid heaving;" bowels regular. No other symptoms found. Two drops of creasote were ordered three times a day in gum arabic and water.

August 31st. Stomach decidedly better; pain the same.

Case III. September 6th. Male, forty-seven years, married. Complained of weakness of legs and indigestion; hands and legs weak; grip, right 56, left 64; anæsthesia and numbness below the knees; slight general trembling; slight but distinct Romberg's symptom; pupil reactions normal; knee-jerk the same; no tenderness of nerves. No signs in the thorax, urine normal. Distress after eating, followed by yawning, belching, and an acid taste in the mouth. The only drug given which could affect the stomach was creasote. In two days the distress and belching ceased, and the creasote was stopped. In four days the trouble came back; creasote was again given for a longer interval, and the trouble did not come back.

Case IV. September 22nd. Female, twenty-two years, single. Seven months ago both legs began to prickle and tingle; pain in the head, and frequent nose-bleed. For the last three weeks it has been difficult to stand. Now patient appears in good condition, but will scarcely try to stand still and walks in a weak, irregular way; marked Romberg's symptom; no other symptoms; all the ordinary reflexes normal.

October 5th. Walks better; can stand with eyes closed; tongue coated, belching, head light, sour taste in the mouth. Creasote in two-drop doses three times a day.

October 11. Stomach symptoms gone. In the course of a few weeks the nerve symptom also vanished under appropriate treatment.

Case V. August 21st. Female, forty-two years, married. Twelve years ago had typhoid fever, and has never been the same since. For two years has been in much the present state. Numbness and burning of hands and feet, hands weak; vertigo, frontal headache; pulse 80, weak; temperature 98.4°; no appetite for breakfast, sense of nausea, frequent belching, acid taste in the mouth, with yawning. Urine normal. Creasote in two-drop doses and the faradic brush.

August 25th. Gas, acid taste, and nausea gone.

Slight burning in stomach. Creasote stopped. During the next month had a return of the stomach trouble, and took creasote at her own request with a good result.

Case VI. July 18th. Female, thirty-eight years, married. Troubled with heavy sensation in stomach after eating, acid eructations, loss of appetite, and pain along fifth and sixth left ribs and over the left triceps. Constipation; reflexes irritable. Treatment, cascara sagrada and creasote, two drops before meals.

July 25th. Wind, sour taste, and pain gone, bowels more regular.

Case VII. December 21st. Male, thirty years, married. An epileptic. Complains of nausea and wind; no acid taste. Creasote.

January 26th. Nausea and wind gone.

Case VIII. November 17th. Male, twenty-four years. single. Complains of heavy feeling, nausea, belching, sour taste in mouth, headache, and dizziness in the forehead. Gave creasote.

November 27th. Now only constipation and wind in stomach. Gave cascara.

December 18th. Bowels regular, no symptoms except the wind.

Case IX. September 12th. Female, forty years, married. Numb hands, pain in the back on waking, also from pit of stomach to shoulder-blade. Wind if stomach empty, sour or at times bitter taste, tongue slightly coated, attacks ushered in by yawning. Mouth sometimes waters, but denies nausea. Constipation. In this case creasote and cascara did no good.

Case X. October 11th. Female, married, forty-eight years. Complains of pain in head, especially over eyes, vertigo, belching, weight in stomach, nausea, and bad taste in the mouth. Gave creasote, and the symptoms vanished in the course of a week.

The above class of cases in which creasote has proved of service are mostly characterized by more or less nausea, or some of the other prodromata of vomiting, as yawning, the evolution of gas in the stomach, and an acid taste after eating. When the wind or acid taste is absent I have had more failures, and in cases like Number IX., where the wind was only between meals, no success. In some of the cases all the symptoms but the wind have vanished.

The exact nature of the morbid processes in these cases I do not know. The use of creasote was begun under the belief that the acid taste and wind pointed to fermentation, and creasote is given as a fair antiseptic. My own experiments, however, show that creasote is a much weaker germicide than ordinarily stated. Again, in certain cases the wind continued though the other symptoms vanished, showing that the symptoms were not all closely connected.

Besides its weak germicidal powers creasote possesses an astringent effect on mucous membranes which is not to be lost sight of. In the same class of cases salicylate of soda has not been of as much service in my hands.

Where a close observation of the drug is not desired, unless constipation exists, the creasote has been usually administered with bismuth in water, the bismuth in some way seeming to take the former up and make a presentable mixture.

Clinical Department.

REPORT OF A CASE OF ACUTE HÆMORRHAGIC GASTRIC ULCER.

BY C. M. HAY, M.D.,

Assistant Physician to the State Insane Asylum, Morristown, N. J., late Resident Physician at University Hospital, Philadelphia.

The following case came under my observation on February 1, 1889, and was interesting in several respects. Mrs. T., age 23, one child, always healthy up to her present illness, normal weight 120 pounds, habits excellent, physique and general health exceptionally good. On the above date she began to have pain in the epigastrium, which she described as "boring deep, and aching," but which occasionally became more severe, and then would shoot to the back and up between her shoulder blades. This pain was not constant, and was induced by eating. On the following day she began to vomit after taking food, and attacks of pain were more frequent and severe, while a slight febrile reaction was added, which, by evening, was 102° F. Examination now revealed a normal condition of the heart and lungs. The hepatic and splenic dulness was of normal extent, and in the epigastrium, about two inches below the ensiform appendix, a circumscribed area of extreme tenderness on pressure was found. This was of the size of two silver dollars, and extended more to the right than to the left of the median line. There was no evidence of tumor, and percussion gave the ordinary gastric tympany. Examination of the remainder of the abdomen was negative, as was also that of the urine, uterus, ovaries, and menstrual functions. On the third day, after taking some milk, she had a copious hæmatemesis, losing fully ten ounces of liquid arterial blood, containing some loose coagula. This was preceded and accompanied by great pain in the abdomen, followed by nausea, and its occurrence gave relief. On the fourth day a similar hæmorrhage occurred spontaneously, the patient losing somewhat less blood, which was darker in color, and more coagulated than the first. During this time, even the smallest amount of liquid was rejected by the stomach, and considerable altered blood was passed through a single movement of the bowels, which had been obstinately constipated from the beginning of her illness. Slight pyrexia continued, with rapid and excited cardiac action. Examination of the epigastrium now revealed some enlargement of the area of tenderness, but no other symptoms. At 5 A.M., on the fifth day, on making a sudden movement of the body, she was seized with pain in the epigastrium, and in about fifteen minutes she vomited about ten ounces of unaltered blood. Fifteen minutes later I found her exhibiting signs of hæmorrhage, and there was extreme muscular weakness, ringing in the ears, complaints that "she could not see," great rapidity of the heart's action, with pain and fullness in the region of the stomach, and great mental perturbation. These symptoms were followed in a few minutes by nausea, when she suddenly partially rose up and vomited nearly a quart of dark-colored liquid blood, containing loose coagula, and fell back in syncope. Reaction occurred very slowly, and during the ensuing week the patient continued in a state of extreme weakness, with considerable anæmic fever, attended by thirst, dimness of vision, murmurs at the cardiac orifices and great vessels, and all the other subjective and objective signs of great anæmia. Blood was again found on three occasions in the stools, and small quantities of coffee-ground material were vomited for several days, while the epigastric pain and tenderness remained the same. From this time the patient slowly improved, and by February 15th had gained blood and strength; pain and tenderness were somewhat less, and she had only occasional attacks of vomiting, while the fever had practically disappeared. By February 28th light liquids could be retained, although there was a decided tendency towards emesis. At this point in the case it was very interesting to observe the gradual, progressive diminution of the area of tenderness, with the corresponding lessening of pain. From this time the patient improved more rapidly.

The case was complicated by herpetic tonsillitis on March 3rd, which, however, subsided quickly in three days. On March 20th light, digestible solids were first allowed, and on the 27th she was allowed to sit up in a chair for the first time. At this time her pain was entirely gone, and the area of tenderness, which had been slowly getting smaller and smaller, was now a mere point, with difficulty found by the finger. The patient (who had lost twenty-five pounds in weight) now gained rapidly, until by April 20th her weight was one hundred and fifteen pounds, with no return of any previous symptoms, while her tongue, which had been at first coated, and, lately, fissured and flabby, was again normal in appearance. Examination failed to reveal any tenderness in the epigastrium, and she was permitted to resume her ordinary duties.

The treatment of this case consisted, during the period of the hæmorrhages, in full doses of morphia and ergotine, hypodermically, small pieces of ice by the mouth, and an ice bag over the epigastrium at the time of the largest hæmorrhage. During the following twelve days no food was allowed by the mouth, and nutritious enemata were exclusively relied upon to support the patient. Small quantities of ice, sufficient to allay thirst, were given by the mouth. For the next ten days small amounts of diluted milk and animal broths, with the enemata, constituted her sole diet. During this time she also received a pill of nitrate of silver, in combination with the extract of opium. On two occasions, when emesis threatened, all food was stopped until the stomach was again entirely retentive. Rectal injections were discontinued on February 28th, and Bland's pill was then added to her treatment, while a liquid diet was enforced until March 20th, when all local symptoms disappeared, and murmurs were no longer heard over the præcordia.

The diagnosis of this case seems to be very clear. The general blood conditions which at times are causes of such hæmorrhages can be excluded from this case by the previously healthy condition of the patient and by her family history; while the normal condition throughout the case of lungs, liver, uterus, and spleen proves the absence of disease of any of these organs as a causative factor. The course and termination of the case exclude aneurism or cancer, while, with the absence of ascites, obstruction to the portal circulation or vein cannot be considered. The symptoms clearly point to a local gastric lesion, and they were confirmed by physical examination of the epigastrium. Traumatism in all its forms can be excluded, as can also disease of the gastric blood-vessels, varices of the veins, and passive congestion of the stomach, by the age of the patient and the healthy condition of the circulatory system throughout the body; while, as ulcer is by far the most frequent cause of such massive hæmorrhages from the stomach, it may be safely assumed that such was the lesion in this patient. The case is interesting from its acute commencement, the size and number of the resulting hæmorrhages, its definite course and termination by recovery, and also from the standpoint of etiology and treatment. It is comparatively rare that we have an opportunity of seeing a gastric ulcer develop in the way that this one did. That the ulcer was not of the chronic form, which had been previously latent, is sufficiently proved by the perfect health which she enjoyed up to the time of the present illness, and also by the perfect recovery which the patient has since made. The rapidity of its formation and the appearance of all the symptoms is worthy of note, the first hæmorrhage occurring just three days after the first symptoms of gastric trouble appeared, while the size of the hæmorrhages proved nearly fatal. The manner in which the patient rallied and slowly recovered; the gradual disappearance of the epigastric pain and tenderness, together with her present good health and gain in weight, seem to indicate the complete healing of the ulcer. Why this woman should have had a gastric ulcer I cannot conjecture. She was under the operation of none of the ordinary causes. Her age, sex, and the fact that she habitually wore tight corsets are all the predisposing causes that I have been able to discover. Embolism or thrombosis of one of the gastric vessels in the posterior wall of the stomach would perhaps best account for the symptoms, but there is no organic valvular disease of the heart or any other discoverable cause of such an occurrence. In conclusion, I may say that it would appear that this case was not of the chronic variety of gastric ulcer, but that it was that rarer, acute, hæmorrhagic form, which luckily did not terminate by fatal hæmorrhage or perforation, and did not become chronic, but rapidly healed.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.
SURGICAL SECTION.

GEORGE H. MONKS, M.D., SECRETARY.

Meeting Wednesday evening, April 3rd, 1889. Dr. E. H. Bradford in the chair.

Dr. Royal Whitman showed patients illustrating his

TREATMENT OF FLAT-FOOT,

and spoke as follows: —

"The treatment of the cases of flat-foot which have come under my observation has been conducted on the following principles: —

The affection is the result of overstrain, and is essentially a dislocation of the bones of the foot, with the usual accompaniments of a dislocation in varying degree. Thus muscular spasm, contraction, atrophy, deformities of bones, etc., are considered as results and not as causes. The remedy must therefore be (1) in a reduction of the dislocation; (2) in supporting the foot in its corrected position by a brace; when, with suitable exercises, and by an avoidance of the causes which produced the affection, the weakened, stretched, and displaced muscles and ligaments may regain their strength, and a cure ultimately result.

One or two points in the above are considered of particular importance. 1st, that flat-foot is the result of overstrain. The feet, as any other part of the body, may be essentially weak, but, unlike other parts, they are subjected to constant weight and strain under unfavorable mechanical conditions. 1st, because they are compressed in improper shoes; 2nd, because of the custom of turning out the toes to an excessive degree in walking and standing, — a position which throws the greatest strain on the weakest part. It is of the utmost importance, both in the prevention and treatment of flat-foot, that a proper walk should be insisted upon; that the feet when in use should be nearly or quite parallel to each other, in order that the weight of the body may be thrown on and over the toes, and not inside them. Thus each correct step may be made an exercise to strengthen a weak foot, while each improper one has a tendency to aggravate the existing deformity. The brace which has been used exclusively during the past year has already been described; theoretically it has the merits of accuracy of adjustment, as it is in every case moulded on a cast of the foot in its corrected position; of simplicity and inoffensiveness (as its presence is not apparent); of being equally applicable to all cases, in any class of society or grade of intelligence, and that it does not interfere with the normal movements of the foot. Practically its value has been proved in a very large number of cases.

It is perhaps unnecessary to remind you that flat-foot is often a very painful and disabling affection, and that it is important to recognize it in the early stages, before permanent changes have taken place. Its nature recognized, I know of no affection where the results of treatment are so immediate and satisfactory. The more severe the symptoms, the more rapid and efficient the remedy."

THE CHAIRMAN spoke in the highest terms of Dr. Whitman's method of treatment, and declared that he had often had the opportunity of observing its good results.

DR. F. B. HARRINGTON said: I consider Dr. Whitman's treatment a very valuable and marked advance in the treatment of flat-foot. The case which I sent to Dr. Whitman was a very severe one, and the improvement shown is remarkable. The rectifying the deformity under ether and the fixation of the foot in a corrected position seems to me the most essential part of the treatment of the severe cases. I have found the study of these cases extremely interesting, and am more and more convinced of the value of Dr. Whitman's treatment.

DR. WHITMAN called attention to the frequency of flat-foot, and to the fact that many of such cases are long treated for rheumatism without relief, when a properly applied plate would relieve them at once. He regretted that all medical men were not a little more careful in diagnosis.

DR. A. T. CABOT also spoke of the importance of the early recognition of the true condition; and called attention to the pain running up the calf, and the tenderness particularly over the inner arch as being aids in diagnosis where the deformity is not marked. In just such cases a good plate would give great relief.

THE CHAIRMAN related the case of a young man who had been told by a physician that he had disease of the spinal cord; but it was simply a case of flat-foot, which was some time later relieved at once by plates like those described by Dr. Whitman.

In reply to a question DR. WHITMAN explained how the mould of the foot was taken. The patient sits in a chair and rests his foot upon its outer border in a box filled with soft plaster, which is placed upon another chair. The plaster is built up about the foot to its middle line. The inner (now upper) side of the foot is then covered with plaster, and the mould is thus made of two lateral halves. A cast of the toes is unimportant, and that part of the foot can be neglected, as it has nothing whatever to do with the shape of the plate to be fitted.

DR. A. T. CABOT reported

TWO CASES OF LAPAROTOMY FOR PENETRATING WOUNDS OF THE ABDOMEN,[1]

the one case being a stab with a jack-knife, and the other an accidental pistol-shot wound.

DR. H. L. BURRELL read a communication on

A CONSIDERATION OF THE USES OF GASES IN PENETRATING WOUNDS OF THE ABDOMEN,[2]

which he illustrated by extremely interesting experiments on dogs, using hydrogen, oxygen, and air to demonstrate the presence of gastro-intestinal injuries.

DR. F. B. HARRINGTON reported

TWO CASES OF PENETRATING WOUND OF THE ABDOMEN; TREATMENT BY LAPAROTOMY.[3]

THE CHAIRMAN related a case of his own, where the patient was stabbed in the abdomen. The wound was enlarged, but the intestine was found to be only bruised, though the bleeding was considerable. The peritoneum was washed out with hot water and the wound sewed up. The patient died of septicæmia. The fact that the case was a medico-legal one somewhat complicated affairs. The decision given was that the infection was probably due to the assailant's knife rather than to the surgical operation, since in the latter efforts had been made to keep everything aseptic.

DR. M. H. RICHARDSON called to mind the fatality which statistics give to cases of penetrating wounds of the abdomen. He thought that in the war the mortality rate was about 90 per cent. He could not, however, express much confidence in the insufflation method, so far as he could judge from his reading on the subject and from his own somewhat limited experience. It had always seemed to him that inflation of the bowels would interfere with any subsequent examination in case laparotomy was done, though perhaps this difficulty was an imaginary one. He felt, however, quite sure that the escape of fæces through an intestinal wound into the peritoneal cavity was a real danger, and he had seen it happen, and that in his only case. His idea seemed to be that if a laparotomy is to be done anyway, there is no use of insufflation to begin with. The method may, however, be of some use after all apparent perforations have been sewn up, to make sure that all have been found.

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[1] See page 81 of this Journal.

[2] See page 77 of this Journal.

[3] See page 83 of this Journal.

Dr. H. W. Cushing said: I have been exceedingly interested in Dr. Burrell's experiments; and they have been to me a very instructive and valuable demonstration of this subject. Insufflation has apparently two rôles: first, to indicate the existence of an intestinal perforation; second, to locate it. In estimating its value, penetrating wounds of the abdomen must be considered in two classes: stab wounds, and bullet wounds. In stab wounds the possibility of the hollow abdominal viscera escaping injury is considerable. If there is no perforation one of the chief indications for an exploratory laparotomy is absent; and the victim is spared a serious, at times dangerous, operation. Here, therefore, insufflation as a diagnostic aid is of great value; and, as a direct means of recognizing intestinal laceration, of vital importance to the patient. With bullet wounds, on the contrary, the possibility of the intestine escaping uninjured is very small. In no case, according to my own observation, has the intestine escaped when the ball has entered the abdominal cavity, and the laceration in some instances has been to a fearful extent. Hence, in this class, the value of insufflation as an agent to indicate perforation is not of so great importance. The surgeon will probably, unless he has some strong indication to the contrary, open the abdomen at once in every case. Under such circumstances, however, as a rapid means of locating the site of the perforation it has proved a most efficient aid, and of equal importance is its power to demonstrate to the surgeon the important fact that he has closed all the wounds. It unquestionably shortens these operations and renders unnecessary the extensive, prolonged exploration and manipulation of the abdominal viscera so productive of excessive shock. In some of Dr. Burrell's experiments I am confident that some of the wounds would have remained undiscovered without the aid of insufflation. In regard to the technique, the method of using air which he recommends is much more satisfactory and practical than the "Senn" method. It requires no especial preparation or complicated apparatus. The demonstration of its escape from the abdominal wound is unnecessary: it consumes time, and is occasionally difficult, if not impossible, even where perforations exist. The practical points for the surgeon are: The distention of the abdomen, without which, of course, there can be no insufflation. When this has been accomplished his efforts must be to asertain if the air is in the peritoneal cavity as well as in the intestine. The surest and most rapid way to demonstrate this is to slightly nick the peritoneum. The hiss of the escaping air at once shows its site. Also the bubbling of fluids in the wound. If this does not occur the air is confined to the intestinal canal, which is in all probability intact. In none of the cases I have seen has the distention of the intestines been an impediment to the operator, or prolonged the operation. Extreme distention is not necessary to demonstrate the perforations, and the subsequent rapid collapse of the gut prevents any such complication.

Dr. J. R. Chadwick was inclined to think that Senn's method was not reliable before laparotomy was done; but that it might be of great use, when the abdomen was laid open, in finding the perforations and in making sure that those already stitched were tight. He thought the introduction of an antiseptic fluid into the abdominal cavity would be of advantage, not only to float up the intestines, but to detect hæmorrhage by the tingeing of the fluid as it ran out.

Dr. Harrington said that he should be inclined to do a laparotomy in most cases of penetrating wounds, and if insufflation were used it would only be after the abdomen was opened.

The Chairman wished then to know if it was the sense of the meeting that in all fresh cases of penetrating wounds of the abdomen laparotomy should be done.

Several gentlemen present objected to so broad a statement, and were inclined to think that in many fresh cases no exploration whatever should be made.

EXHIBITION OF SPECIMENS.

Two specimens sent by Dr. John Homans were then shown. One was a fibroid of the uterus, weighing fifteen pounds, which was removed on March 28th. Present condition of patient very satisfactory.

The other specimen was two tubes and ovaries, which had been with the greatest possible difficulty "dug out" of the pelvis of a single woman of twenty-five, by laparotomy.

The Chairman showed an enlarged prepatellar bursa, recently removed by him; also a sarcoma of the buttock.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

SIXTH ANNUAL MEETING, BOSTON.

Second Day — Tuesday, June 25, 1889.[1]

Dr. R. G. Curtin, of Philadelphia, read a paper on

THE CLIMATOLOGY OF HÆMOPTYSIS IN CHRONIC LUNG DISEASES FROM AN ETIOLOGICAL AND THERAPEUTIC STANDPOINT.

In glancing over the field we are confronted by so many and varied influences of climate at work, both in causing and preventing hæmoptysis, that the subject will be best considered by taking up each factor separately, and discussing it as to its bearings, and the symptoms under consideration, and its debilitating result. If the chronic lung disease is removed by climate, this, a mere symptom, is necessarily ended. We must be careful not to magnify hæmoptysis, a mere symptom, into the formation of a distinct disease.

First, I will give a brief summary of the more immediate causes of bleeding from the lungs in chronic pulmonary diseases. We are liable to hæmorrhages from the lungs, caused —

[1] Concluded from page 70.

1st. By capillary congestion of the bronchial mucous membrane.

2nd. By congestion of the parenchyma of the lungs.

3rd. From erosion of blood-vessels from the ulcerative process.

4th. Pr disposition from condition of the blood, as in hæmophilia.

5th. Atmospheric influences.

6th. Nervous influences.

The hæmorrhage may be bronchial, capillary, arterial, or venous. The principal climatic conditions affecting hæmoptysis are included under the following heads: Heat, moisture, and altitude, asepsis, rarefaction of air.

For syphilitic phthisis, denser air and increased arterial pressure are, I believe, beneficial in a curative way, as shown in my paper read before this society two years ago in Baltimore.

In cold air the tissues and blood-vessels contract, especially the capillaries, driving the blood from the periphery towards the centre, but not with sufficient force to cause a dangerous internal congestion. It has a beneficial effect upon the appetite, and favors assimilation and strengthens the nervous system, imparting internal vigor.

Warm air. The effect of continued warm air is to cause a debilitated and relaxed condition of the tissues and blood-vessels, which would in itself tend to the exudation of blood from the diseased tissue of the lungs.

Sunshine. A patient living in the crowded city, shut between walls, and with perhaps many cloudy days, is subject to depressing influences. Remove a person so situated to a place with much sunshine and to out-door life and he will be benefited by such a change.

Each case should be carefully studied in all its phases before deciding upon a change of residence.

Dr. Edward O. Otis, of Boston, read a paper on

PSYCHOLOGICAL FACTORS IN SELECTING A CLIMATE FOR INVALIDS.

To best adapt the remedy, be it climatic or medicinal, to the case in hand, the psychological side of the question, as well as the physiological and pathological, must have its due consideration. From a psychological point of view we ought, it seems to me, to consider, 1st, the temperament and mental disposition. 2nd. Previous habits and mode of life. 3rd. The amount of physical activity the patient has been accustomed to. 4th. The matter of domestic ties. 5th. Is the patient to be placed in an environment of invalidism, where he will have his malady suggested to him continually by seeing others sick and dying with it about him? 6th. The age of the individual.

An analysis of that bundle of peculiarities which constitutes what we call one's temperament is often an easy matter, yet it ought to have careful study when a change of climate is under advisement. One's natural disposition, to a great extent, shapes his way of life and determines his habits. The tastes of the patient play a not insignificant rôle in his physical condition and well-being, and a disregard of them may vitiate the good results hoped for by a climatic change. The matter of length of residence in the climate selected depends upon many considerations, principally upon the kind, character, and extent of the disease.

Of course, individuals vary much in the manner of adapting themselves to circumstances. Where, however, the longing for the dear ones at home is extreme and continual, a spot nearer home, with a climate less intrinsically ideal for the disease, but affording easy communication with home and friends, may accomplish better results, as, for instance, Sharon in this State or Lakewood in New Jersey.

An environment of invalidism is almost unavoidable in most of the well-known health resorts. Besides these injurious influences, in other respects mainly it is in many ways unfavorable. To be sure, climate in a way makes us all akin, but in thinking of and helping an unfortunate brother our mind is diverted from our own misery to our benefit. On the other hand, however, to be amongst many others of the same disease as our own in its varying degrees and phases must often react unfavorably on our own disease. Our disease is kept constantly before us, and I have noticed that the majority of invalids seem morbidly eager to discuss their own symptoms and watch and note the simplest variations in their own condition. I am convinced that this seems to be a serious objection to such health resorts as are exclusively devoted to invalids and to those suffering from the same disease. Is not the objection all the greater to sanitaria where many invalids are under one roof, particularly if the disease is phthisis?

Certain it is that the influence of an environment of strong health, and, secondly, cheerful companionship about an invalid is more conducive to rapid improvement than one of invalids, with the constant reminder of the nearness of death. Lastly, the age of the patient as a psychological factor is important in considering the effect of the change to be made. It is true that "hope springs eternal in the human breast," but it springs more exuberantly in the young breast, and we can count more upon this universal element in human nature in the young than in the middle-aged and older. The adaptability of the young to change and new conditions is great, and with them we can venture on more radical changes than with the older, who are bound by long association to friends and places. Ours is a materially scientific age, and medicine feels the influence of the time and agê, but there is a mental as well as a physical side to the human entity, and he is the wise physician who duly weighs in his considerations and decisions the influences of the spiritual side as well as that of the physical.

Dr. Griffith E. Abbott, Bryn Mawr, Pa., read a paper on

THE BASIS OF RATIONAL CLIMATO-THERAPY.

We should guard against ascribing qualities to climate as peculiarly characteristic, which are disturbances either inci ent to acclimatization or are the result of our short-sightedness, or the patient's carelessness.

Medical climate resolves itself into a microscopically pure air, equability of temperature, sufficient warmth and humidity, abundance of sunshine, protection from harmful air, air currents, and the presence of such arrangements and regulations as will enable the patient to lead a healthful life — a climate in which much outdoor exercise can be taken.

In selecting a place for sojourn, we should consider the conditions and exigencies of the patient, and also his local relations. The patient not appreciating the mode and circumstances of life among the inhabitants of a place, can only enjoy the climate, and the local and social influences, such valued adjuncts, are lost.

DR. ISAAC HULL PLATT, of Lakewood, N. J., read a paper on

THE PINE BELT OF NEW JERSEY, A REGION OF SANDY SOIL AND PINE FORESTS.

It was my intention at this meeting of the association to present a paper in consideration of the subject of soil dryness and pine forests with reference to pulmonary diseases, but I have found that it requires an amount of research for which I have not yet had time, and I shall for the present content myself with briefly calling attention to a region where these conditions prevail And it is of special importance by reason of its nearness to our great Eastern cities.

New Jersey, though a small State, presents considerable diversity in its topographical and geological features. In the northern part it is traversed by the Kittatinny Mountains, a range of hills, part of the great Appalachian chain. The central portion is characterized by red sandstone with trap ledges, while the southern and eastern portions of the State consist of level country with a sandy soil and pine forests. Along the shore there are long stretches of shallow bays and tide marshes, and in the extreme southern portion many little rivers with meadows lying along their banks. But running through the interior of the State there is a strip of land about sixty miles in length, and from eight to twenty miles in breadth, reaching from a few miles south of Freehold in Monmouth county almost to Vineland in Cumberland county. This comprises the inland portion of the sandy tract, including the extreme southern portion of which I have spoken. This region has long enjoyed a local reputation for healthfulness, and some portions have been mainly settled by people who have gone there for that reason. Extensive pine forests are a prominent feature of this region. They have been in some places cut off or burned, and in some spots are replaced by oak and other deciduous trees. But there are enough left to make it prominently a pine region.

The importance of soil dryness as a climatic element in prophylaxis of phthisis is too well known to need rehearsal. According to the reports of the State Board of Health, which are carefully prepared, and are, I believe, as accurate as any statistics of the kind, the whole number of deaths in the townships of Howell, Jackson, Manchester, Southampton, Woodland, Shamong, Winslow, and Hammonton, during the six years from 1883 to 1888 inclusive, was 1057, or an average of 12.16 per thousand a year. The number of deaths from consumption was 141, or 1.6 per thousand a year. In the State of New Jersey, during the same period, the total mortality was 18.65 per thousand, and the mortality from consumption 2.53 per thousand. Or, throwing out towns of over 5000 inhabitants, the total mortality was 15.07 per thousand, and the mortality from consumption 2.12. The comparatively low mortality from consumption will be rendered more striking if attention is called to the nature of the population of the region. The inhabitants may nearly all be included in two classes, — the descendants of the original settlers, and those who have settled themselves in this region because of its supposed healthfulness.

At some future time I hope to be able to give something more definite in regard to the results of treatment in this region. I can only say at present that it is very exceptional for a patient with bronchial or pulmonary disease not to derive some benefit, greater or less, from the change, and in many cases the benefit has seemed remarkable.

DR. ALBERT L. GIHON read a paper on

OCEAN THERAPY.

A paper by DR. S. H. CHAPMAN, of New Haven, entitled

NOTES ON THE PRESENCE OF DIPHTHERIA AT HIGH ALTITUDES,

was read by title.

In August last, during an excursion to Franz-Josefshöhe, 9500 feet high, into the heart of the great glacial region called Gross-Glockner, in eastern Austrian Tyrol, my guide related circumstances of an epidemic occurring during the early spring of the preceding year in his native village of Heiliegenblut, which aroused my curiosity. On my return to the village of Heiliegenblut, which is the starting point of all excursions into that region of snow, I made inquiries of the factota of the village, of the hostess of the inn, who is the chief personage in all the Tyrolean villages, the postmaster, and telegraph operator. Their statements verified and amplified those made by my guide. Upon my return to Lienz I called upon the only physician of the town, who is also the military surgeon in charge of the government hospital for the district of Lienz. He gave me a description of his share in the epidemic. At the end of a week of the plague, as the peasants call it, notwithstanding the danger attending the journey, a messenger was despatched for a doctor, who, after a toilsome journey of two days, reached the village. The physician pronounced it diphtheria of virulent type. His treatment consisted of insufflation of sulphur and poultices on the neck. His treatment was so unsuccessful that the peasants had recourse to charms, prayers in the church night and day, and to the aid of an aged peasant, whose treatment saved more lives than the doctor's. It consisted of an ointment of sweet cream and powdered gunpowder rubbed in on the outside of the throat, and inside as well. The physician's statistics were sixty cases, forty-eight deaths. The disease was entirely unknown to the oldest inhabitant. The description of the disease was somewhat limited, namely, the crisis was reached in from two to three days; besides the swelling of the glands and inflammation of the throat, there was even severe hemorrhage from the nose preceding collapse. There was no attempt made to isolate cases. I have related this incident to the society because of the interest attached to the extent of the development of diphtheria at so high and isolated a spot.

It seems possible to draw the following conclusions: That the latent germ was stimulated to active development in the steaming, fermenting atmosphere of a stable; that its virulence was rather increased than diminished by the high altitude and by the rarity and low temperature of the air; that propagation from house to house was not hindered by the passage of the germ through a rarefied air of very low temperature; that the effect of the germ became less and less violent as time elapsed; that the history of this epidemic seemed to show that there took place a special culture of the specific microbe in defined quantity; that all the cases were attacked by the originally developed microbe, and that under the wearing action of it and atmospheric conditions its virulence became more and more attenuated, until it again passed into a harmless period of existence, or became secluded in localities unpropitious for further development.

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NEW YORK ACADEMY OF MEDICINE.

Stated meeting, May 20, 1889.

Dr. W. Gilman Thompson read a paper on

THE THERAPEUTIC VALUE OF OXYGEN INHALATION, WITH EXHIBITION OF ANIMALS UNDER HIGH PRESSURE OF OXYGEN.

He said that he had been impressed by the fact that while some observers claimed the most brilliant therapeutical results from the use of this agent, others held that it was of but little, if any, practical value, and still others used it in such a vague way that no reliance could be placed upon the results obtained. As was well known, the ordinary pressure of the atmosphere was fifteen pounds to the square inch; of this amount three pounds was exerted by the oxygen and twelve pounds by the nitrogen. The first question that arose was, Does an increased pressure really cause more oxygen to be absorbed? Under any circumstances the hæmoglobin of the blood could take up but 2½ per cent. more of oxygen, and it was also a fact that it could not enter the plasma to any extent.

In most of the older text-books it was stated that animals could not live in pure oxygen, the system being burned up, as it were, by the increased tissue changes excited by it. This idea, however, was an entire mistake, as was conclusively demonstrated by Dr. Andrew H. Smith in the series of experiments made by him in 1869 and 1870. Having referred to some of the symptoms produced in the human subject by the inhalation of oxygen, he said that very little additional oxygen could be made to enter the system by any amount of pressure short of that which would result in injurious effects.

He then exhibited the apparatus which he had had constructed for the purpose of exposing animals to high pressures of oxygen. It consisted of a strong iron drum, or chamber, with glass-covered openings at each end, in which the animal to be experimented upon was to be placed; and to this oxygen was supplied at any degree of pressure desired, from a cylinder containing the gas at a pressure of 225 pounds to the square inch. Two animals, a monkey and a pigeon, which had been subjected for one hour to a pressure of 30 pounds to the square inch, in oxygen, in addition to the ordinary pressure of the atmosphere, 15 pounds, were taken from the chamber in an apparently perfectly normal condition.

Dr. Thompson next proceeded to make a detailed report of a number of experiments he had made upon animals which were in a normal condition at the time the experiments were commenced, the animals being dogs, cats, pigs, monkeys, guinea-pigs, pigeons, and alligators. It was found that all the animals could exist comfortably in the oxygen until a pressure exceeding three atmospheres was reached. The higher the order of the animal experimented upon the more quickly it became affected. As a rule, a decided fall of temperature, often amounting to from four to six degrees Fahr., was observed; and only in cold-blooded animals was there any rise of temperature. This marked decrease in temperature he did not believe was to be attributed at all to the effects of the oxygen, but to the profound disturbances caused in the system by the high pressure employed. If, as was claimed by the older writers, a greatly increased tissue metamorphosis was caused by oxygen, this would unquestionably be accompanied by an increase, and not a diminution, of the body temperature. In a paper read before the Royal Academy of Madrid, Valenzuela reported similar results. In animals subjected to oxygen in a pneumatic chamber under increased pressure he found that the temperature was reduced several degrees, and rabbits in which septicæmia had been artificially produced had the temperature reduced to normal.

In such of the animals as died as a result of subjection to high pressure of oxygen, or were killed after removal from such exposure to high pressure, Dr. Thompson found pulmonary engorgement and dilatation of the right heart. The convulsions which usually resulted when the pressure was carried to a high point were, as a rule, quickly controlled by blowing off five pounds of pressure. He also tried the experiment of subjecting animals on alternate days to high pressure of oxygen and to compressed air, the series of observations being maintained for a considerable period. The cause of the convulsions produced by exposure to high pressure of oxygen, he said, was as yet undecided, but he was inclined to attribute it to the difference in the diffusion of oxygen and carbon dioxide under different degrees of pressure.

A second series of experiments was performed upon animals in which abnormal respiration had been induced. Dyspnœa might be classified as being due.

(1.) To abnormal conditions of the air.
(2.) To abnormal conditions of the blood.
(3.) To obstructed circulation.
(4.) To diminished surface for aeration.
(5.) To neurotic influences.

In a cat in which dyspnœa was produced by cutting both vagi instant relief was afforded by exposing the animal to oxygen; while, on the other hand, the dyspnœa was increased by compressed air.

In the second experiment a canula was introduced into the pleura of a dog. In the third pulmonary congestion was caused in a cat by injecting a solution of nitrate of silver into the lung-tissue, and the dyspnœa resulting therefrom was greatly relieved by oxygen. In other experiments the lung was compressed by injecting considerable quantities of water into the pleura, and in still others the animals were bled to the extent of many ounces. The results of these experiments, he said, went to show that oxygen does aid in a moderate degree certain types of dyspnœa.

In considering the therapeutic value of oxygen it was to be borne in mind that it was a physical impossibility to take oxygen into the blood. This agent had been employed, first, as curative in certain general diseases, more particularly of the blood and circulation, and, second, as a palliative in dyspnœa due to various conditions. Of late its use had increased to such an extent that two or three hundred thousand gallons of it were now consumed annually in New York city alone. Among the affections, beside dyspnœa, in which it was claimed that it had proved of benefit were anæmia, chlorosis, croup, chronic gastric catarrh, migraine, cholera, and opium narcosis. It was used more generally in this country and on the continent of Europe than in England, and in Paris a supply was kept on hand at the stations along the Seine for use in resuscitating persons rescued from the river, and also at some of the police and fire stations.

In anæmia, chlorosis, etc., Dr. Thompson said he could see but little advantage over good fresh air in giving diluted inhalations of oxygen two or three times a day, as was the usual practice in such affections. It did not seem rational to him to expect that sufficient oxygen could enter the system under these circumstances to produce anything but a temporary effect at the best. In cases of blood-poisoning, again, he had failed to see any benefit derived from oxygen. In certain subjective cases of dyspnœa it no doubt gave relief, but in a case of poisoning by illuminating gas which he had seen at the Presbyterian Hospital it was kept up for nearly three days without producing any effect either on the rate of breathing or on the cyanosis present. In cardiac diseases his experience with oxygen had not been encouraging, and he referred particularly to a case of malignant endocarditis in which it proved of no avail in relieving the dyspnœa. In certain cases of asthma and of anæmic dyspnœa, however, it gave decided relief, and in such he believed it was an invaluable therapeutic agent; though not, of course, curative.

DISCUSSION.

Dr. J. West Roosevelt spoke of the relation of the amount of oxygen inhaled to that absorbed, and said that while the amount which entered the plasma or the hæmoglobin of the blood was comparatively small, he believed it was sufficient to cause appreciable results in many instances. As to the therapeutic value of oxygen, in the neurotic form of dyspnœa we had a condition in which the mere act of inhalation and the engaging of the attention of the patient would often have a beneficial effect. In anæmia he had met with fairly good results with oxygen, though the patients improved less rapidly than under the use of iron. If in any case the hæmoglobin was not saturated, an improvement showed that more oxygen was carried than under ordinary circumstances. On the whole, oxygen had proved of considerable value in his experience, and in cases of diminished surface for aeration he had seen cyanosis decidedly improved under its use.

Dr. George L. Peabody said that so many circumstances were involved in estimating the value of an agent like oxygen that it was difficult to arrive at positive conclusions respecting it. Thus, when it was not the only therapeutic agent employed, it was impossible to say just how much benefit was derived from it; and this difficulty was further increased in diseases which naturally tend to recovery. The question of the utility of oxygen he believed was still undecided. When the idea of its administration first occupied the profession it was the practice to give internally chemical substances, like chlorate of potassium, for instance, which were known to be rich in oxygen. It was far from certain, however, whether they yielded up their oxygen on entering the body; and even if this were so it seemed probable that the resulting compounds might have a more or less caustic effect upon the tissues. This was apparently the case with osmic acid.

Later it had become the practice to give oxygen by inhalation. Under such circumstances its absorption depended probably on the amount of hæmoglobin in the blood at the time the oxygen was administered; but in any event the amount absorbed was unquestionably small. There was good reason to doubt the alleged efficiency of this agent, and personally he believed that, as a rule, quite as much relief could be obtained from ordinary fresh air. It might be tried, however, in maladies attended with dyspnœa, in which the blood is unchanged, such as pneumonia, emphysema, croup, and asphyxia from toxic gases; although, as Dr. Thompson had correctly stated, in poisoning from illuminating gas it had failed to give relief. There was no justification, he thought, for the extensive use of oxygen in general diseases, such as anæmia, chlorosis, lithæmia, etc. Although the pulmonary gymnastics of the inhalations might have a beneficial effect in certain instances, there were other remedies which could be employed with much greater advantage That the use of oxygen hastened recovery in such cases he did not believe, and the recognized facts of physiology were certainly at variance with any such conclusion.

Dr. Beverly Robinson said that he differed entirely from Dr. Peabody, and that his clinical experience afforded the most conclusive proof of the immediate and marked relief resulting in many conditions from the use of pure oxygen. In anæmia he had found that those cases were most improved in which oxygen was used in connection with iron. The purity of the gas was a point of the utmost importance, and he said that one make of gas which he had formerly employed gave such poor results that he ceased to use it. There was a gas now manufactured in New York which was said to contain a certain proportion of nitrogen monoxide, from which he had obtained very satisfactory results; and it was worthy of note that Brown-Séquard had expressed the opinion that nitrogen was of great service in preventing the irritating and intensely exciting effects of oxygen alone.

In albuminuria connected with atrophic nephritis he had found the general nutrition of the patient notably improved under the use of oxygen; the digestive and assimilative powers being greatly assisted by it. Even in phthisis, while it did not have a curative effect, it might prove beneficial. In the first place, the inhalations caused the patient to thoroughly expand his lungs; secondly, oxygen was itself an antiseptic, and therefore indicated; and, thirdly, it had the effect of improving the general nutrition. As had been well said, oxygen was really prescribed every time that a patient was sent to the mountains, to Southern California, to the plains, or on a sea voyage. But there were many cases in which it was impossible to send patients away, and he believed it was possible to stimulate the hæmoglobin in the blood. and thus to enable the patient who remained at home to carry more oxygen. In the use of oxygen he did not think we should be guided so much by experimental researches as by practical clinical experience. Without considering the curative effects of the remedy, there were certainly many cases where the last hours of patients could be rendered much more comfortable by resorting to its use.

Dr. Walter Mendelson said that he felt compelled to agree with Dr. Peabody from what he had observed of the effects of oxygen. In anæmia it was true that he had seen some quite marked results under its use; but he did not believe that the benefit was in reality due to this agent. He cited the case of an old man who inhaled ten gallons of oxygen a day, and became greatly improved. This improvement, however, he was convinced was due to the systematic expansion of the lungs and to the moral effect of the knowledge that something out of the common was being done for him. In cases of dyspnœa from various causes he had seen more or less relief afforded by oxygen; yet all the patients died. Still, as Dr. Robinson had said, it was possible that their last moments were rendered more comfortable by the inhalations.

Dr. Mary Putnam Jacobi said that the amount of oxygen which the hæmoglobin carries varied under different circumstances. In asphyxia of various kinds the physiological capacity of the blood remained the same, and therefore the indication was to administer oxygen. The correctness of this had also been shown by clinical experience. In anæmia, and especially chloro-anæmia, on the other hand, the hæmoglobin was diminished. The condition was precisely the reverse from that met with in asphyxia, and we could not cause a much greater amount of oxygen to be absorbed.

Dr. Andrew H. Smith said he was gratified to find that the work which he did twenty years ago for the most part still remained good. At that time he had demonstrated that animals could live perfectly well for four days in pure oxygen; care being taken to remove the effete products of respiration. It was his opinion that under ordinary conditions the blood is not fully saturated with oxygen, and that the point of saturation corresponds with the physical demand. This allowed a pretty wide margin, and it was perhaps within this margin that a considerable amount of oxygen could be absorbed by the blood. Thus, the demand for oxygen was much greater in athletes engaged in violent exercise than in individuals making but little physical exertion. Therapeutically he had seen the greatest benefit derived from oxygen in catarrhal conditions of the air-passages, such as was met with in suffocative bronchitis. In such cases he was at a loss how to explain the relief afforded by the oxygen, unless it was a fact that under these conditions the blood did not take up as much oxygen as the system required. When pneumonia was present so many conditions were brought into play that the matter was much more complex and the relief afforded by oxygen very uncertain. Dr. Smith also said he had used oxygen with satisfactory results in opium poisoning.

Dr. Thompson, in closing the discussion, said that convulsions were produced in the animals experimented upon by the rapid increase of the pressure, and that such convulsions were quickly relieved by the rapid withdrawal of a portion of the pressure. He could not agree with Dr. Smith in his opinion regarding the saturation of the blood with oxygen, since he thought there could be no question that even under ordinary conditions the hæmoglobin was practically saturated with oxygen. In reply to Dr. Roosevelt he said that many individuals suffered from dyspnœa whose blood contained more oxygen than that of those with anæmia or suffering from hæmorrhages. Dr. Robinson was certainly mistaken in attributing any irritating effects to oxygen. Pure oxygen had no irritating effects whatever, as had been repeatedly demonstrated. It produced no burning up of the tissues. as had been formerly supposed, and he could see no advantage over ordinary air in the nitrogen monoxide referred to.

During the evening a cat and a dog were successively subjected to progressively increasing pressures of oxygen in the pneumatic chamber. When the pressure reached eighty pounds to the square inch the cat was seized with a convulsion, and the dog had a convulsion when the pressure reached a little above forty-five pounds. That this effect was not due to carbon dioxide was shown by the lime-water test. Both animals recovered after they were restored to the air.

Recent Literature.

Pathological Report, 1887-1888, *of The City of London Hospital for Diseases of the Chest, Victoria Park, E.* By Sidney Martin, M.D. (Lond.), Assistant Physician to the Hospital, Late Pathologist and Medical Registrar.

This report includes an analysis which, from a pathological point of view, is pretty complete, of forty-nine fatal cases of phthisis and tuberculosis; sixteen of cardiac disease; and a few of empyema, bronchitis, etc. In many respects the clinical analysis is also good; but we note that the sputum seems to have been examined for bacilli in only seventeen of the forty-nine tubercular cases, and in four of these with negative result; in only two of the four, however, was the examination repeated. The immediate cause of death in two cases was hæmoptysis. The intestines were ulcerated in twenty out of thirty-eight cases, and in thirteen of these there was diarrhœa; in eight, well-marked constipation: in one, regular bowels; it should be added that in the majority of the constipated cases no opiates, to the use of which the constipation could be attributed, were administered, and that in the others the amount of opium was small. It is greatly to be desired that all institutions for the care of the sick should be provided with pathologists as devoted and a management as liberal as the Victoria Park Hospital enjoys. It would not take long to accumulate a mass of facts of the greatest value and interest.

Diabetes, its Cause and Permanent Cure, from the Standpoint of Experience and Scientific Investigation. By Emil Schnee, M.D., Consulting Physician at Carlsbad, and Physician to the Imperial and Royal Consulate of Austria and Hungary for the Riviera at Monaco. Translated from the German by R. L. Tafel, A.M., Ph.D. English edition, revised and enlarged by the Author. Philadelphia: P. Blakiston, Son & Co. 1889.

The author claims to have made, in 1881, the important discovery that the ætiological element of diabetes is syphilis contracted by some ancestor of the patient. He also maintains that diabetes is curable under his treatment, which, however, so far as we can discover, differs in no essential respect from that commonly employed in this disease, except in the internal administration of corrosive sublimate albuminate and of chromate of potassium. He reports twelve cases of cure which had lasted for at least seven years each. While containing some useful information concerning the views of eminent authorities on the nature and treatment of diabetes, this work is written in an *ad captandum* style, and in a spirit of self-glorification, which seriously detract from its value.

Examination of Water for Sanitary and Technical Purposes. By Henry Leffman, M.D., and Wm. Beam, M.A. Philadelphia: P. Blakiston, Son & Co. 1889. viii, 106. 12mo.

The authors, in compiling this manual, have selected the more modern and practical chemical methods which have been proposed for the examination of waters for the purposes indicated by the title. These they have described clearly and concisely. They make but brief mention, however, of the bacteriological examination, considering it as beyond the scope of their work. The advice given in regard to the proper interpretation of the results obtained in the examination are very practical, and the little work can therefore prove a useful addition to the literature of its subject.

Parreidt's Compendium of Dentistry. Translated by Louis Ottofy, D.D.S. With notes and additions by G. V. Black, M.D., D.D.S. Published by W. T. Keener, Chicago. 1889.

The work is intended for a text-book in the dental schools. Its accuracy and conciseness are to be commended. Drs. Ottofy and Black, both distinguished American dentists, have added much to the value of the original work in adapting it to the needs of the dental student in this country.

The work is divided into twelve chapters. The first is devoted to a consideration of the anatomy and physiology of the teeth. There follows a chapter on anomalies and seven on diseases of the teeth and jaws. These latter are the most important in the book and contain much valuable matter by Dr. Black in addition to the original text. The author accepts the view of Miller that decay is the result of fermentation. In treating of chronic alveolar abscess, it is quite refreshing to hear the statement made that a certain proportion of the cases are incurable. I rarely meet with any dentist who is always successful in these trying cases. Pyorrhœa alveolaris is not considered an infectious disease as Wetzel has claimed, nor does the writer believe it to be a constant symptom of diabetes. Dr. Black believes it to be a specific disease of the peridental membrane, and that the condition of the alveolar wall is secondary.

The remaining chapters are devoted to filling, extraction, and the construction of artificial plates. The chapter on filling is the least valuable in the work, and is too limited to be reliable.

Manuel Pratique de la Garde-Malade et de l'Infirmière. Tome V. Hygiène, par Sollier, Interne des Hôpitaux, professeur à l'Ecole municipale d'infirmières et d'infirmiers de Bicêtre. Paris: Aux Bureaux du Progrès Médical. 1888.

This little volume upon the subject of general hygiene, or preventive medicine, is the fifth of a series of handbooks adapted to the wants of hospital nurses of both sexes, and is one of the publications of *Progrès Medical.* It is written in an easy, simple, and somewhat elementary style, and treats concisely of those subjects which come within the domain of hygiene. Two different classes of conditions affect the health of mankind: those which act from without, and those which are inherent in the individual (such as sex, age, race, heredity, constitutional resistance, etc.) The author confines himself to the former.

The principal topics treated in its twelve chapters are air, light, heat, endemic and epidemic diseases, the house and its environment, ventilation, heating, clothing, care of the body, bathing, food, meat, vegetables, condiments, and beverages.

Eighth Registration Report of New Hampshire. 1887.

The registration of vital statistics in New Hampshire is under the supervision of the secretary of the State Board of Health. The report of 1887, just published, shows an improvement in the line of public registration over previous years.

The number of births registered in 1887 was 6910; of marriages 3495; and the deaths were 6479. These would indicate, when estimated upon the population of 1880 (346,991), a birth-rate of 19.91 per 1000; a marriage-rate of 10.07; and a death-rate of 18.67. The excess of the birth-rate over the death-rate, or natural increase, was therefore 1.24 per 1000.

The rates for Massachusetts for the same year were as follows: birth-rate 26.45; marriage-rate 9.72; death-rate 20.28; and excess of birth-rate over death-rate 6.17 per 1000, upon an estimated population of 2,010,388.

The percentages of deaths at different ages were as follows, as compared with Massachusetts for the same year: —

	Under 1 year.	Under 5 years.	20 to 30 years.	All other ages.
New Hampshire,	14.62	22.14	7.21	70.61
Massachusetts,	20.89	32.26	9.51	58.23

The percentage of deaths from different causes by classes in the two States was as follows: —

	Zymotic.	Constitutional.	Local.	Developmental.	Violent.	Unspecified.
N. H..	17.9	20.4	45.7	12.1	3.6	1.3
Mass..	19.5	22.3	42.2	10.6	4.2	1.2

By counties, the zymotic diseases varied from 9.7 per cent. of the total number in Cheshire to 33.7 per cent. in Coös.

The mortality from the most prominent causes of death was as follows: Consumption, 766 deaths; heart disease, 575; pneumonia, 556; apoplexy and paralysis, 463; old age, 449; cholera infantum, 336; cancer, 218; violence, 182; diphtheria, 177; typhoid fever, 134; brain diseases, 121; bronchitis, 114; diarrhœa and dysentery, 107.

This order of fatality differed but little from that of Massachusetts in 1887. In the latter the number of deaths from pneumonia was greater than those from heart disease; and those from cholera infantum were more than those from old age. Cancer also stood higher in the list in New Hampshire than in Massachusetts.

It is to be hoped that all of the States of the Union will soon adopt efficient systems of registration, that the true condition of the people may be known from year to year, so far as the natural movements of the population are concerned.

Manuel Pratique de la Garde-Malade et de l'Infirmière. Publié par le Dr. Bourneville. Tome I. Anatomie et Physiologie. 4e edition revue et augmentee. Paris: Aux Bureaux du Progrès Medical. 1889.

In spite of certain useful practical suggestions which this little primer for nurses contains, it does not strike us as particularly adapted to the object in view. Although the anatomical part is meant to be sketchy, it touches on a number of points which are really details, and is not always accurate. We doubt whether illustrations of dissections are of any practical use in a book of this kind. The physiology does not please us any better.

Elements of Histology. By E. Klein, M.D., F.R.S., etc. Philadelphia: Lea Brothers & Co. New and enlarged edition, with 194 engravings.

Dr. Klein's little work is so well known by this time on both sides of the water that it requires no detailed notice. The present edition shows some changes to bring it up with the times. Dr. Klein has accepted Rollet's views on the structure of muscular fibre, and gives a short sketch of the results of recent work on the nucleus. The text is concise and the illustrations very fine.

— Among the new medical graduates who are beginning to get a foothold in practice is the Archduke Charles Theodore of Austria, who recently commenced to practise as a duly qualified medical man near Meran. A short time ago he treated successfully a patient of seventy-four years of age under circumstances which so strongly impressed the popular imagination that the archducal doctor was fêted by his enthusiastic neighbors. The Archduchess, who has for some time past assisted her husband in performing the more serious of his operations, is said to have begun to "quiz" in preparation for examinations which will place her also on the list of qualified doctors.

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THE UNICITY OF BRIGHT'S DISEASE.

Till Johnson wrote in 1846, "On the Minute Anatomy and Physiology of Bright's Disease," no histological interpretation had been attempted of the lesions described by Bright nearly twenty years previously. Johnson concluded from numerous careful observations that fatty degeneration of the epithelia of the kidneys is the principle and essence of Bright's disease; the exudation of blood and serum in the urine is the consequence of the blood pressure augmented by reason of obstruction of the tubuli. Johnson in his first memoir states the view, since then generally adopted by histologists and clinicians, that the divers aspects described by Bright cannot be regarded as only different stages of one and the same disease. The small granular kidney has but little similarity to the large, white, soft kidney, and if the name of Bright's disease ought to be reserved for that renal degeneration which begins and progresses by fatty metamorphosis, the white kidney ought to be separated from the atrophied kidney.

Rayer, in France, in ranging his six forms under the common name of albuminous nephritis, although he nowhere says expressly that they may undergo transformation the one into the other, seems to admit that these forms are successive phases of one and the same process.

In Germany the microscope in the hands of Reinhardt and of Frerichs confirmed the unicist conception of Bright's disease. Reinhardt attributes the states described by Bright to an inflammatory process which he calls diffuse inflammation. But he thinks that, according to the causes which have produced it, according to the individuals in whom it has developed, this inflammation may follow a different course. He regards the varieties indicated by Bright as the diverse consequences of this diffuse nephritis. Like every inflammatory process, the renal inflammation may present itself to the observer at different periods of the stages of congestion, of exudation with fatty degeneration of the epithelia, of connective tissue proliferation with ultimate retraction of the tissue of new formation.

Frerichs in 1851 arrived at the same conclusions. The alterations, he thinks, succeed each other in the following order: in the first stage there is hyperæmia with exudation into the renal parenchyma; in the second stage the exudation undergoes varied metamorphoses; which end in a third stage, in a process of regression and in atrophy of the glandular substance.

In England the tendency to dualism became more and more marked after the publication of Johnson's researches. Samuel Wilks advanced the view that the term "Bright's disease" covers at least two diseases absolutely distinct. He criticised Frerichs' propositions. "If," he said, "the small granular and atrophied kidney is the last stage of a uniform process, of a succession of inflammatory congestions, of exudations and subsequent regressions, with ultimate retraction, how is it that we meet with so few instances of intermediate pathological states? Why has not a single case been mentioned where the symptoms which characterize the large white kidney have gradually undergone transformation, to end in those of the small, granular, contracted kidney? Why is there not a single case on record of the small contracted kidney where acute symptoms preceded the chronic evolution of the disease?"

Wilks constituted two principal varieties, altogether distinct, of renal lesions: the large white kidney, and the small contracted kidney. The causes, symptoms, and course of these two varieties are different. Wilks was one of the first to call attention to the frequent association of the renal lesion with alterations of all the tissues, and, in particular, of the heart and arteries.

Dickinson placed himself on the dualist side, and divided Bright's disease into two great varieties: 1, *tubular nephritis*, acute or chronic, which is primitively a catarrhal inflammation of the canaliculi, ending in the large, white, soft, or mottled kidney, and, where life is sufficiently prolonged, in a certain degree of atrophy; and, 2, *intertubular nephritis*, in which there is an exudation between the tubuli which involves the secreting tubuli and the glomeruli in a gradual destruction, the process ending finally in the small contracted kidney.

Grainger Stewart, in 1868, adopted a similar division, and insisted that it was more logical to say Bright's diseases than Bright's disease. Jaccoud defends the plurality of forms in his *Pathologie Interne*, and so do Bartels, Charcot, and Lancereaux in their special treatises. In 1872 Gall and Sutton furnished still other arguments for plurality in the notions which they formulated respecting *arterio-capillary fibrosis* and its relations with the contracted kidney. Lecorché, in his classical work, *Maladies des Reins*, published in 1875, makes of pathological anatomy the basis of his division. He admits two great varieties of renal inflammations, according as the lesions affect the canaliculi or the intertubular connective tissue: the first variety constitutes the parenchymatous nephrites, the second, the interstitial nephrites. He also describes mixed forms, and insists on the frequent combination of interstitial nephritis with grave or "profound" parenchymatous nephritis; amyloid degeneration is described in a separate chapter. Lecorché would reserve the name Bright's disease for profound parenchymatous nephritis, which presents four periods; a period of hyperæmia, a period of hyperplasia, a regressive or fatty period, and a period of atrophy or collapsus.

It is significant of the provisional character of the theories hitherto prevalent respecting the renal diseases, that Lecorché, in the recent admirable treatise, "On Albuminuria and Bright's Disease," which he has published in conjunction with Charles Talamon (a work from which we have borrowed in the foregoing exposition), has abandoned the dualist view which he formerly entertained, and has declared himself a unicist. The considerations which have led to this change are very clearly set forth in the second part of his work; they are considerations derived from the more intimate knowledge which the studies of the past twenty years have given of the morbid anatomy and histology and clinical history of Bright's disease.

We intend in another number to present the principal arguments which these writers have advanced in support of the unicist view.

SIR ANDREW CLARK ON HOSPITALS.

At a recent meeting in London, held at the Mansion House, in behalf of the Hospital Sunday Fund, Sir Andrew Clark, President of the College of Physicians, was the principal speaker. He set forth in a very plain, forcible way the benefits which hospitals confer upon large, crowded communities, and the corresponding claims which they have upon all classes of such communities. He gave an admirable summary of the reasons why the whole population of any great city is equally interested in the support of its great hospitals. That they are a blessing to the poor man is not likely to be overlooked, but that they prevent the spread of epidemic diseases; hinder the outbreak of pestilence; and serve as the true nurseries of the medical skill and intelligent care which every man and woman is likely to have to call upon some day, are facts which the general public and the well-to-do need to have kept before their eyes. But there is still another service of a politico-social character which hospitals render in large centres of population, which is surely very much overlooked, and which we are glad to see alluded to by Sir Andrew in these words: "I do not know that there is anything so trying to the faith of mankind or to the order of their lives as to see those whom they love get sick and grow worse and unassisted. Now, in the great centres of population, such as we know a good deal about in the east of London, it is an enormous advantage to keep down those terrible revolutionary feelings which are apt to arise in the breasts of men when they look upon those whom they love crowded together in poor miserable hovels, sick and suffering, with no one, as they think, to relieve or care for them. It seems to me that in this there is a service which hospitals do render to the community and which the community in these days forgets."

The income of the great London hospitals has been diminishing of late years, while the demands made upon them are continually increasing. The agricultural distress has diminished the proprietary income of the old hospitals, and, in so far as they are dependent upon voluntary contributions, they suffer from what this address terms a diminution in the strength and virtue of giving. Sir Andrew Clark believes, moreover, that the great general hospitals are robbed of some of the support which they ought to receive by the foundation and maintenance of improper hospitals which divert funds in directions in which they ought not to be employed.

He pays his respects to special hospitals in the following sentences: —

"A doctor who cannot get on in the ordinary way takes to studying the great toe, and he discovers something about it never known before. In the course of his studies he ascertains that the diseases of the organ are not only supremely important in themselves, but that they have the most intimate relation to all the other serious diseases of the body. He also invents a wonderful instrument whereby he can look into the great toe and see what is threatening, and prevent all those terrible things which happen in the organ and affect the whole system. He goes to his friends, shows them his instrument and tells them of his discoveries. They then club together and establish a Hospital for the Treatment of the Diseases of the Great Toe. They soon get patients who are convinced of the vast importance of the diseases of the great toe. Marvellous cures are effected and all sorts of frightful diseases are prevented. They have an annual meeting. They have a chairman who sets forth bashfully in the presence of the great physician the diseases of the great toe, the wonderful things that have been done, the great service which has been rendered by the hospital, the terrible prejudice it has had to encounter, and the determination that this great institution shall be liberally supported, notwithstanding the prejudices of the medical profession and of those who herd with them."

There has been a disposition to curtail or abolish the out-patient departments in connection with some of the London hospitals, but Sir Andrew, who has probably had as large an experience with them as any one in London, comes vigorously to their defence. Where else, he asks, can the doctor come face to face with the early aspects of disease, where else with those first small indications of disease which tell of its near approach and which are still within the power of art to avert? The doing away with these departments of the great London hospitals would, he thinks, inflict a cruel, irreparable wound on practical medicine in his country.

The opinion that special hospitals have been overdone in London seems to be part of the best medical sentiment, and there is nothing in the remarks of Sir James Paget, Sir Henry Acland, and others at a recent meeting in Oxford, held in behalf of the Eye Hospital of that place, which controverts this opinion. A tendency to the same error has for some years been manifested in our own large cities.

MEDICAL NOTES.

— At the Johnstown flood, six physicians were drowned and twenty-one lost all they had.

— Mrs. Jane C. Stormont, widow of the late Dr. D. W. Stormont, of Topeka, has given 10,000 dollars to the Kansas Medical Society, for the purchase of a library.

— At its recent commencement, the Medical School at Burlington, Vt., gave diplomas to fifty-six graduates.

— Vermont is about to build a new State Insane Hospital at Waterbury. Five hundred acres of land have been purchased, of which thirty acres, in the vicinity of the Central Vermont R.R. Station, are to be used as a building site. The complete plans contemplate a three-story brick building, having a frontage of 900 feet. There will be a central administration building. The main building will consist of two wards, one for men and one for women, connected on each side by a corridor one story high. In each wing will be three two-story circular wards for the chronic insane. Each ward consists of a day room on the first floor, and has a dormitory for 25 patients. There will be a general hospital ward, three stories high and 150 by 36 feet in size, with a capacity for 75 patients.

— Dr. Donald McLean, Professor of Surgery, and Dr. G. B. Frothingham, Professor of Ophthalmology, at Ann Arbor, have resigned; and Dr. C. B. Nancrede, of Philadelphia, and Dr. Fleming Carrow of Bay City, Michigan, have been appointed.

NEW YORK.

— In consequence of the finding of three dead bodies in the large Croton reservoir in Central Park within three months, the board of health has called the attention of the Park Commissioners and the Commissioners of Public Works to the matter, with a view to the prevention of such suicides in the future. It is suggested that the reservoir should be surrounded with so high a fence as to render it extremely difficult to gain access to the water, and that the Park Commissioners increase the police force on duty in the vicinity of the reservoir.

— The board of health has followed up the report of its pathologists on the contagiousness of tuberculous diseases with the publication of a series of rules to be observed for the prevention of consumption. The first directs that the sputa of suspected consumptives should be received in earthen or glass dishes containing a solution of bichloride of mercury, 1 to 1000. The other rules are as follows: —

2. Do not sleep in a room occupied by a person suspected of having consumption. The living rooms of a consumptive patient should have as little furniture as practicable. Hangings should be completely avoided. The use of carpets, rugs, etc., ought always to be avoided.

3. Do not fail to wash thoroughly the eating utensils of a person suspected of having consumption as soon after eating as possible, using boiling water for the purpose.

4. Do not mingle the unwashed clothing of consumptive patients with similar clothing of other persons.

5. Do not fail to catch the bowel discharges of consumptive patients with diarrhœa in a vessel containing corrosive sublimate one part, water one thousand parts.

6. Do not fail to consult the family physician regarding the social relations of persons suffering from suspected consumption.

7. Do not permit mothers suspected of having consumption to nurse their offspring.

8. Household pets (animals or birds) are quite susceptible to tuberculosis: therefore do not expose them to persons affected with consumption: also do not keep, but destroy at once all household pets suspected of having consumption, otherwise they may give it to human beings.

9. Do not fail to thoroughly cleanse the floors, walls, and ceilings of the living and sleeping rooms of persons suffering from consumption at least once in two weeks.

Ten thousand copies of these rules are to be printed for distribution.

Miscellany.

PRESIDENTIAL ADDRESS AT THE ANNUAL MEETING OF THE OHIO STATE MEDICAL SOCIETY.

In his address, as president, at the last annual meeting of the Ohio State Medical Society, Dr. P. S. Connor, of Cincinnati, said:

As is the appendix to the intestinal tract, a useless survival of a once important organ, so is the presidential address to the annual proceedings of the State Medical Society. In the days when books and journals were few, communication slow, professional work physically harder than at present, there was, I doubt not, good reason for requiring of the recipient of high honor an abstract of the year's progress, suggestions of work that might and should be done, or report of diseases and injuries carefully investigated and successfully treated. Now that to each one of us what appeared in print but a short time ago in San Francisco, Boston, Vienna, or St. Petersburg is familiar talk it may be well asked of the inaugural address, *Cui bono*. Hardly yours; surely not his to whom the months of prospect of its preparation are as the fly in the ointment of the apothecary. But custom is imperious and we are all its slaves. Like my predecessors I obey its mandates.

The year just closed, unmarked by any epoch-making discovery, has been one of busy work at home and abroad. In our own country laboratory study has been carried on as never before, and vivisections have thrown light on some obscure conditions. The work done at the congress at Washington in September last on the subjects of intestinal obstruction and cerebral surgery was of the greatest imaginable importance.

The State society, to command respect and be effective, must have a large membership. Out of the four thousand doctors in the State who bear no creed or limiting designation, only five hundred and sixteen appear on the roll of members published in the last year's *Transactions*. Contrast this to the one thousand seven hundred members of the Massachusetts State Medical Society out of about two thousand physicians. Nine counties in our State are unrepresented, and many others have but one, two, or three members. One-third of the members come from six counties. He advised the adoption of measures to bring in a larger membership, and thought it was wise to so amend the law that every regular physician, member of a county medical society, becomes through this a member of the State society.

In years past much of the time of the society had been devoted to "the regulation of the practice of medicine." He thought that the making of the physicians of Ohio better diagnosticians and more successful attendants on the sick and the injured and the prevention of illy prepared men from entering upon the study of medicine should be sought for, but beyond this he had grave doubts as to the wisdom of interference. Public opinion is taking a turn all over the country in favor of legal restriction of the practice of medicine, and this would have the desired effect. Certainly it is not wise for medical men to be constantly decrying practitioners of medicine. The people of Ohio have to-day as good physicians as they ask for or are in fact entitled to. When they demand better and support better, then and not till then will they receive better. More medicine and less medical politics is, as I look at it, the want of the times in America.

He urged upon the society more work in the line of collective investigation of disease, and cited the good work done in this line by the State society of Texas. He recommended that the papers read before this society be short, clear statements of what the writers have themselves observed, studied, and done, leaving to the hearers, as disposed, investigation into the literature of the subject, and comparison of theories and conflicting opinions. "Never mind the items; give us the total."

He considered the social features of such a meeting by no means the least. If not a paper was read or a resolution discussed, he thought the gathering of the clan once a year well worth the trouble and expense. Such a tonic and such an alterative clear the brain and strengthen the heart. He referred in touching words to the death of Dr. D. Haldermann, of Columbus, first vice-president, who had earnestly, honestly, faithfully, and ably finished his life-work at fifty-seven.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 13, 1889

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,571,558	1187	764	49.14	7.29	42.57	.36	3.15
Philadelphia	1,040,245	607	358	29.50	8.00	23.20	1.76	1.12
Chicago	830,000	433	298	39.56	5.06	31.97	.69	4.14
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	276	179	37.80	5.04	23.00	.46	—
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	238	134	36.12	10.92	30.24	1.26	2.52
New Orleans	250,000	122	46	18.04	13.12	9.84	—	.82
Cincinnati	225,000	138	—	32.12	8.76	21.17	.73	2.19
Washington	225,000	141	57	30.53	11.36	23.43	2.84	—
Pittsburg	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	46	17	15.19	19.36	10.85	—	—
Portland	40,000	16	6	25.00	8.25	25.00	—	—
Worcester	78,292	—	—	—	—	—	—	—
Lowell	71,518	44	29	52.21	11.35	47.67	—	2.27
Cambridge	65,552	39	20	35.84	5.12	33.28	—	2.56
Fall River	62,647	44	29	54.48	2.27	54.48	—	—
Lynn	53,334	14	7	—	7.14	—	—	—
Springfield	40,731	20	16	70.00	10.00	70.00	—	—
Lawrence	40,619	42	28	42.84	2.38	38.04	—	2.38
New Bedford	37,253	23	16	43.47	4.35	39.15	4.35	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	20	8	15.00	10.00	15.00	—	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	24	14	31.85	9.10	27.30	—	4.55
Haverhill	26,058	8	4	37.50	—	25.00	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	4	1	—	—	—	—	—
Newton	21,553	6	1	—	16.66	—	—	—
Malden	19,774	7	4	42.84	14.28	42.84	—	—
Fitchburg	17,534	6	1	—	16.66	—	—	—
Waltham	17,332	2	1	50.00	50.00	50.00	—	—
Newburyport	13,875	3	—	—	—	—	—	—
Northampton	13,726	—	—	—	—	—	—	—
Quincy	13,728	5	1	40.00	20.00	20.00	—	—
Woburn	12,822	—	—	—	—	—	—	—

Deaths reported 3515, under five years 2039; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1335, consumption 269, acute lung diseases 137, diarrhœal diseases 1125, diphtheria and croup 74, typhoid fever 29, measles 28, scarlet fever 28, whooping-cough 23, malarial fever 13, cerebro-spinal meningitis 11, erysipelas 4. From measles, Cincinnati 11, Philadelphia 6, New York 4, Chicago 3, New Orleans 2, Boston, Charleston, and Haverhill 1 each. From scarlet fever, New York 10, Philadelphia 8, Chicago 5, Washington 3, Baltimore and Lowell 1 each. From whooping cough, New York 12, Philadelphia 6, Boston 3, Washington and Lawrence 1 each. From malarial fever, New Orleans 7, New York and Baltimore 2 each, Philadelphia and Charleston 1 each. From cerebro-spinal meningitis, Chicago 4, New York 3, Washington 2, Philadelphia and Quincy 1 each. From erysipelas, New York 3, Boston 1.

In the 28 greater towns of England and Wales, with an estimated population of 9 555,406, for the week ending July 6th the death-rate was 17.7. Deaths reported 3249; infants under one year 1026. Diarrhœa 377, measles 97, whooping-cough 81, diphtheria 58, scarlet fever 55 fever 32.

The death-rates ranged from 11.2 in Nottingham to 29.2 in Newcastle-on-Tyne; Birmingham 14.3; Bradford 19.1; Hull 20.1; Leeds 26.9; Leicester 20.5; Liverpool 17.8; London 16.2; Manchester 25.3; Portsmouth 20.0; Sheffield 18.0; Sunderland 21.0.

In Edinburgh 17.4; Glasgow 25.8; Dublin 22.8.

The meteorological record for the week ending July 13, in Boston, was as follows, according to observations furnished b Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, July 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.		Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in inches.
July 7	30.07	71.0	78.0	62.0	64	75		70.0	N. W.	W.		6	6		C.	C.		0.10	T.
" 8	30.91	69 0	82.0	63.0	66	97		82.0	N W.	E.		14	9		F.	O.			.00
" 9	30.06	62.0	65.0	60.0	90	86		88.0	E.	S. E.		7	4		O.	O.			.00
" 10	30.08	63.0	66.0	59 0	89	82		86.0	W.	E.		8	1		O.	O.		2 30	T
" 11	29.98	64.0	67.0	62 0	90	95		92 0	W.	S. W.		5	8		O.	O.		5.05	.04
" 12	29.88	68.0	72 0	62.0	85	86		86 0	N.	S. E.		2	6		F.	C.			.00
" 13	29 90	72 0	86.0	66.0	90	91		90.0	S. W	S. W.		6	13		F.	F.			.00
Means for the Week	29.99		72.0	63.0				85.0										7 45	

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JULY 13, 1889, TO JULY 19, 1889.

Brechemin, Louis, Captain and Assistant Surgeon, U. S. A., by Par. 1, S. O. 159, A. G. O., July 12, 1889, ordered to Illinois National Guard, near Springfield, Ill., during remaining portion of encampment.

Leave of absence for fifteen days is granted Lieutenant R. R. **Ball**, Assistant Surgeon, U. S. Army. Par. 3, S. O. 87, Dept. of the Missouri, July 9, 1889.

By direction of the Secretary of War the extension of leave of absence on surgeon's cectificate of disability granted Captain H. G. **Burton**, Assistant Surgeon, in S. O. 22, January 26, 1889, from this office, is furthec extended two months on account of sickness. Par. 1, S. O. 162, A. G. O, July 16 1889.

Ims F. J., Assistant Surgeon U. S. Army, now at Fort Lyon, Col., will proceed to camp neac Oklahoma City, Ind. Terr., and report to the commanding officer for duty, relieving Captain W. C. Gorgas, Assistant Surgeon, who, when so relieved, is authorized to avail himself of the leave of absence granted him in Par. 2, S. O. 84, c. s. Dept of the Missouri. Par. 1, S. O 87, Dept. of Mo., July 9, 1889.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FROM JUNE 10, 1889, TO JULY 13, 1889.

Fessenden, C. S D., Surgeon. To proceed to Cairo, Ill., on special duty, July 8, 1889.

Long, W. H., Surgeon. Granted leave of absence for twenty-eight days. June 18, 1889.

Austin, H. W., Surgeon. To proceed to Cairo, Ill., on special duty, July 8, 1889.

Irwin, Fairfax, Surgeon. Granted leave of absence for ten days. July 6, 1889.

Mead, F. W., Passed Assistant Surgeon. Granted leave of absence for thirty days. June 24, 1889.

Magruder, G. M., Assistant Surgeon. Relieved from duty at Baltimore. Md., to report to the Supervising Surgeon-General for duty as Acting Chief Clerk and Attending Surgeon. July 10, 1889.

Goodwin, H T., Assistant Surgeon. Granted leave of absence for thirty days. July 8, 1889.

SOCIETY NOTICE.

WHITE MOUNTAINS MEDICAL SOCIETY

The semi-annual meeting of this Society will be held at Hanover, N. H., August 1 and 2, 1889, beginning at 3 P.M. of Thursday. The Connecticut River Valley and the White River Medical Societies have accepted an invitation to meet at the same time and place.

The Faculty of Dartmouth Medical College have consented to take leading parts in the exercises of these meetings. They will speak, read papers on practical medical subjects, and will show and operate on cases if suitable ones are presented

APPOINTMENT.

Dr. W P. **Manton**, of Detroit, has been appointed consulting Gynecologist to the Eastern Michigan Asylum.

BOOKS AND PAMPHLETS RECEIVED.

A Clinical Study of Paraldehyde and Sulphonal. By C. M Hay. M.D. Reprint.

The Discovery. A Key to the Mysteries of Life. By J. D Stillman, M.D., St. Louis, Mo.

First Annual Announcement of Tennessee Medical College, Knoxville, Tenn. Session 1889-90.

Annual Report of the Board of Health of the City of Lowell, for the year 1888. Lowell, Mass. 1889.

Annual Announcement and Catalogue of the College of Physicians and Surgeons. Baltimore, Md. 1889.

Les Agents Provocateurs de l'Hystérie. Par Georges Guinon. Publications du Progrès Médical. Paris. 1889.

The Student's Textbook of the Pcactice of Medicine. By Angel Money, M D. Lond. London: H. K. Lewis. 1889.

The Washington Life Insurance Company: Historical, Actuarial, and Medical Statistics. New York. Published by the Company. 1889.

Immunity through Leucomaines. By Eusebio Güell Bacigalupi. Translated from the Second French Edition by R. F. Rafael, M.D. N. Y.: J. H. Vail & Co. 1889.

Lectures on Bright's Disease. By Robert Saundby, M D. Edin., Fellow of the Royal College of Physicians, London. With 50 illustrations. Bristol: John Wright & Co. 1889.

Der Catarrh des Recessus Pharyngeus Medius, seine Bedeutung und Vereinfachte Chirurgische Behandlung. Von Dr. R. Kafemann Wiesbaden: J. F. Bergmann. 1889.

On Bronchial Asthma, its Pathology and Treatment. By J. B Berkart, M.D., Late Physician to the City of London Hospital for Diseases of the Chest. Second Edition. London: J. & R. Churchill. 1889.

Ueber Electrolytische Operationen in den Oberen Luftwegen Vortrag Gehalten in dem Verein für Wissenschaftliche Heilkunde. Zu Königsberg am 15 April 1889. Von Dr. Med. R. Kafemann Wiesbaden: J. F. Bergmann. 1889.

Du Rôle de L'Hérédité dans l'Alcoolisme. Par Paul Sollier, Interne des Hôpitaux de Paris. Avec un préface de M. de Bourneville, Médecin l'Hospice de Bicêtre. Paris: Aux bureaux du *Progrès médical*, 14 Rue des Carmes. 1889.

Diseases of Women. A Manual of Non-Surgical Gynecology. Designed Especially for the Use of Students and General Practitioners. By F. H. Davenport, A.B., M.D. With numerous Illustrations. Philadelphia: Lea Bros. & Co. 1889.

A Treatise on Surgery: its Principles and Practice. By T Holmes, M A Cantab., Consulting Surgeon to St. George's Hospital, etc. With 428 illustrations. Fifth Edition. Edited by T. Pickering Pick. Philadelphia: Lea Bros & Co. 1889.

Transactions of the New York State Medical Association for the year 1888. Vol. v. Edited for the Association by Alfred Ludlow Carroll, M D., of Richmond Co. Concord N. H. Republican Press Association N. Y.: J. H Vail & Co. 1889.

Secondary Mixed Infection in some of the Acute Infectious Diseases of Children. A Thesis read before the Chicago Gynecological Society, Jan. 25, 1889 By Bayard Holmes, M.D, Attending Surgeon Cook County Hospital, Director of the Bacteriological Laboratory of Chicago Medical College, Professor of Surgery in the Post-Graduate Medical School. Reprint.

Original Articles.

STYRONE: A CONSIDERATION OF ITS VALUE AS AN ANTISEPTIC.

BY H. H. A. BEACH, M.D.,
Visiting Surgeon to the Massachusetts General Hospital.

The addition of a new agent to the long list of antiseptics that have been employed, and are now being used, in the various departments of medical and surgical practice is not advised without hesitation. Observations in hospital and private practice, extending through a period of eleven years, warrant me in endorsing all that I claimed for styrone when announcing the discovery of its antiseptic properties to the Boston Society for Medical Observation in 1879. The scarcity of the drug, owing to the expense of its production, has been prohibitory of its general use, until now it enters the market as a comparatively new product at a reasonable cost. The origin of styrone (from liquid storax and balsam of Peru) suggests the reason for the employment and the effectiveness of the balsams in antiquated and modern surgical dressings.

Styrone, when used as an antiseptic, possesses three important advantages:

It is { 1st, Efficient
2d, Non-poisonous
3d, Agreeable in odor.

Surgeons of experience will admit the desirability of an agent offering adequate protection to a wound, and by competent tests proved to be without toxic properties. Lest the clinical tests of poisonous action, through absorption of the drug from dressing or the douching of cavities, should be insufficient, it has been given to dogs in doses of a fluid ounce with no unfavorable results. As a deodorizer of foul and offensive wounds or ulcers, particularly those associated with malignant disease or necrosed bone, it is as prompt, effectual and lasting as either of the poisonous or offensive smelling applications in common use. Its odor, not unlike that of cinnamon-water (U. S. P.), is worth the attention of surgeons who are using antiseptics near the head or face. In ulcerating cancerous growths it may be conveniently sprayed upon parts too sensitive to bear the douching necessary for clearing the surface of decomposing discharges. The following formula has been found useful in such cases, with the addition of morphine as required.

℞	Styrone	ʒi.	
	Glycerine	ʒi.	
	Distilled Water	ʒi.	M

To a raw surface, pure styrone is somewhat irritating; but in the form of an emulsion with olive oil, water or liquid vaseline, it may be applied freely to open wounds.

In the pleural and peritoneal cavities where the greatest opportunity is offered a *poisonous* antiseptic for absorption, styrone in solution[1] may be freely used without danger. One part to twelve, with water, is sufficiently strong to completely disinfect a foul and ulcerating surface.

In dentistry, I have the assurance of Dr. L. D. Shepard, formerly Professor of Operative Dentistry in the Harvard Dental School, and of Dr. C. A. Brackett, at present Professor of Dental Therapeutics, that they find it possessed of valuable antiseptic qualities and useful in their art. Dr. Brackett writes, "Styrone continues to be one of the agents upon which I place most reliance for correcting foul conditions in carious cavities and especially in the pulp canals of teeth . . . its odor is, for most patients and for myself, most agreeable."

I have never given styrone internally excepting to dogs. Its action upon the cholera bacillus is, however, so marked that a trial of it in cases of Asiatic cholera is indicated. It may yet corroborate the brilliant discovery of Koch, by killing the bacillus with which he explains cholera, and curing the patient. A solution 1–60, with a small proportion of glycerine added, tastes agreeably, and has a gently stimulating effect upon the mucous membrane of the mouth not unlike that of ginger syrup.

In the form of spray, using the following formula,

℞	Styrone	ʒi.	
	Glycerine	ʒi.	
	Distilled Water	ʒxxii.	M

I have known it to give great relief, with diminution of cough and expectoration, in a number of instances where the patients were subjects of phthisis, no other medicines being in use at the time. It may be substituted for carbolic acid in gargles requiring antiseptic action.

I have excised the female breast repeatedly, and after tying all vessels, washed out the resulting cavity with styrone and liquid vaseline (1–12), closed the wound with catgut sutures, enveloping the projecting ends of the drainage-tubes with a bunch of charpie as large as the fist, which had been saturated with the mixture and squeezed dry, then covering the wound with two layers of sheet-lint saturated with the mixture, overlapping the incision an inch on each side. A layer of borated cotton was afterward applied to maintain an even compression. Upon removal of the dressing at the end of eight or ten days, a good union without suppuration has been found. No unfavorable effects from its use have been observed in any instance.

The following case, copied from the hospital records, furnishes some evidence of its value as an antiseptic and of the freedom with which it may be used in the pleural cavity.

The patient was a young man, a student under the care of Dr. Seeyle, of Amherst, Mass. He had been in robust health up to April 25, 1888, when he developed the characteristic symptoms of pneumonia, with consolidation of the lower lobe of the left lung. An œdema of the right lung followed, and his condition became so critical that his life was despaired of for four days. His temperature was high, but controlled by 5 gr. to 7 gr. doses of antifebrin; pulse was rapid and feeble; respiration was rapid and shallow, with tracheal râles. Treatment (brandy, digitalis, carbonate of ammonia and atropia in $\frac{1}{100}$ gr. doses), lessened the œdema and relieved his breathing.

About May 1st, it was noticed that the heart-beat was well over on the right side of the sternum, and it has remained there ever since. This led to the belief that fluid had filled the left pleural cavity, though bronchial sounds were heard loudly as soon as he became a little stronger.

On May 4th, an aspirator-needle was inserted, and one-half pint of pus drawn off.

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[1] 1–200, 1–100, or 1–50, with water, according to the requirements of the case.

On May 6th, about sixty-six ounces of pus were removed. Breathing then became easier, and the heart changed its position toward the left side.

On May 7th, sixteen ounces of pus removed by the aspirator.

On the 15th, 18th and 20th, from six to eight ounces were removed at each respiration; twelve ounces on the 22d.

Since the 15th, pus has not seemed to lie wholly in one cavity, but in pockets between the lung and chest-wall circumscribed by adhesions. Often the needle would strike nothing at one point but immediately after at a point one inch or more in any direction from the first puncture, ʒ i to ℥ vi would be found. Three or four points would be tried each day; and for the past ten days only two to three drachms have been removed from any one place, from some, nothing. For the past three weeks his temperature has ranged from 99.5° to 102.5°; pulse, from 120 to 140; respiration, from 25 to 40. Hoffman's anodyne relieves dyspnœa. Latterly, gtt. xii Majendie's solution morphia, twice daily, has afforded great relief. Brandy, ℥ ss, every three or four hours. Two quarts of milk, one or two egg-nogs daily; and for a tonic, tr. ferri chlor., acid phosp. dilut., and syr. ferric iod. For two or three days past pericardial friction sounds have sometimes been heard over right nipple.

May 28th, patient sent to the Massachusetts General Hospital. On entrance, general cyanosis; respiration very rapid and shallow; apex beat in fifth space, one inch outside of *right* nipple; slight systolic souffle at apex; flat throughout whole left chest; absent fremitus and feeble respiration; good resonance and respiration through whole right lung; a few coarse râles here and there; abdomen negative; urine highly acid, specific gravity 1027, no albumen, much sediment, urates. Liquid diet every two hours; carb. ammonia gr. v., and brandy ℥ ss, every two hours; tr. digitalis gtt. x, thrice daily; at 3 P. M., morphia subcutaneously, (½ grain), followed by relief of respiration and dyspnœa, and some sleep; at 6 P. M., another subcutaneous injection morphia.

May 29th, another subcutaneous injection morphia, ½ gr. at 4 A. M. Considerable cyanosis to-day and constant dyspnœa. Takes nourishment well. Transferred to surgical ward.

Dr. Beach saw him for the first time on the 29th and found his condition so serious (temperature 105°) that he explored the left chest immediately with the aspirator-needle in the ninth space, posterior axillary line, and withdrew one and a half pints of thick pus. When the cavity containing it had been exhausted, he punctured in the seventh space, and withdrew one and a half pints more. The cyanosis was much lessened, the patient breathed easier. The apex beat returned to a point inside of the right nipple, and there was good resonance over the left chest to the fifth rib.

On the following day his temperature was normal, color good, and respiration easy.

During the three following days the fluid began to accumulate again, and his temperature to rise once more. In anticipation of the previous experiences of the patient, Dr. Beach cut down upon the seventh rib, and made a resection which permitted free drainage, stitched a double tube in place, and washed out the cavity with a solution of styrone, 1 part to 200, afterward increasing the strength to 1–10.

On May 6th, the discharge was profuse but perfectly sweet; temperature normal; the lung has expanded; there is good respiration to the seventh rib in front; apex beat in stomach line; improving fast and gaining flesh. The discharge continued to diminish, and general improvement was constant.

July 9th, he was discharged well, the sinus entirely healed, and has gained twenty pounds since he entered the hospital.

Six months after, Dr. Seelye examined him, and pronounced him "in perfect health." He has gained in strength ever since he left the hospital.

In considering the strong germicidal properties of styrone, I have naturally been led to test its influence in hay-fever and rose-cold, knowing it to be a harmless and non-poisonous drug. Without wearying the reader by detailing many cases, I will simply add that it has been used sufficiently to prove that the marked relief and comfort following the use of spray containing styrone has been something more than a coincidence, whether or not the disease is due to the presence of micro-organisms. In not one case has it aggravated the symptoms. The following formula I have found useful as a spray for the nose and throat, used three or four times daily for five minutes, or more frequently, according to the severity of the case and the relief obtained each time:

℞	Styrone	gtt. x.	
	Glycerine	ʒ ii.	
	Water	℥ iv.	M
℞	Styrone	gtt. v.	
	Liquid Vaseline	℥ ii.	M

The latter to be used with a vaseline spray-producer.

The appended report of Dr. Edward K. Dunham, Bacteriologist of the Massachusetts Board of Health, is corroborative of the above and of the microscopical observations made by me, in 1879, of the power of styrone in restricting the growth of some micro-organisms. I am under many obligations to him for the skilful and painstaking efforts he has made to reach the facts, and for arranging them in such attractive shape. They are published with his kind permission.

EXPERIMENTS WITH STYRONE, SULPHONAPHTHOL, EUCALYPTUS EXTRACT AND GLYCOBORON.

The method employed in studying the germicide value of these four reputed antiseptics consisted in subjecting cultures of bacteria to their action for definite periods of time, and then testing the cultures for living bacteria of the species originally present.

The species of bacteria chosen for these experiments were: bacillus anthracis, bacillus choleræ Asiaticæ (Koch), streptococcus pyogenes, staphylococcus pyogenes aureus, and a mixture obtained from a cold-water extract of beef which had undergone spontaneous putrefaction after exposure to the air.

The steps taken to put the above method into practice were as follows: Erlenmeyer flasks or test-tubes of sterile bouillon made from beef-water with the addition of one per cent. of Merk's *peptone carne sicc.* and one-half per cent. of table salt were inoculated with the bacterium on which the germicide action of the antiseptic was to be tried, and the culture allowed to develop until the bouillon was distinctly cloudy. A known proportion of the antiseptic was then added and thoroughly mixed with the culture. The mixture then stood either at the temperature of the room, or in the incubator, and at intervals little samples were taken for examination with a sterile platinum loop. The amount taken for each test was about one-fiftieth of a cubic centimetre, which was transferred to a test-tube containing from five to eight cubic centimetres of sterile gelatine made of the same ingredients as the bouillon, with the addition of ten per cent. of Nelson's gelatine. The small quantity of antiseptic contained in the sample was therefore diluted with from 250 to 400 times its bulk of gelatine. The gelatine, after being thoroughly mixed with the sample was solidified on the inner surface of the test-tube so as to form a thin layer (Esmarch's "roll-tube"[2]). The roll-tubes were then set aside to develop, at the room temperature. Those in which no growth appeared were kept from one to five months, to exclude the chances of overlooking possible retarded or scanty growth.

These tests were made in duplicate; and, at the same time, a roll-tube of the micro-organism employed was made from a culture started at the same time, and like those treated with the antiseptic, but to which nothing had been added. This roll-tube served as a standard of comparison for the others, and made it possible to judge whether the antiseptic had retarded the growth of the bacteria.

A. Experiments with Styrone.

(1) On the Bacteria of Putrid Meat Water.

Minced beef was soaked twenty-four hours in twice its weight of cold water, strained, and the extract left exposed to the air for three days. Erlenmeyer flasks containing measured quantities of sterile bouillon were then inoculated with the putrid water, and allowed to develop for twenty-four hours. Definite proportions of styrone were then added, and the mixture preserved either at the room temperature, or at a constant temperature of 30 C. At intervals, roll-tubes were made with about one-fiftieth of a cubic centimetre of the mixture and five cubic centimetres of gelatine. Resulting growth in the roll-tubes, at the room temperature, was absent with three and one-third, two, one, and one-half of one per cent. acting through eight, twenty-four and fifty-two hours. One-third of one per cent. showed growth within the period of eight hours. At a temperature of 30° C., three and one-third, two, and four-fifths of one per cent. showed no growth in periods of eight, twenty four and fifty-two hours. One-third of one per cent. showed growth while acting eight and twenty-four hours, and one-sixth of one per cent. showed growth in the three experiments of eight, twenty-four, and fifty-two hours.

These results indicate that one-third of one per cent. is not sufficient to kill the ordinary putrefactive bacteria at the usual room temperatures. At a higher temperature the action of the styrone is a little stronger, but one-sixth of a per cent. does not destroy the bacteria even at a temperature of 30 C. (86 F).

(2) On Anthrax Spores.

Cleansed and sterilized silk threads were soaked in bouillon containing large numbers of disseminated anthrax spores obtained from potato cultures of anthrax grown at a constant temperature of 30° C. The threads were then quickly dried.

A number of these threads were placed in strong styrone. At intervals ranging from two minutes to twenty-six hours, two threads were taken out and placed in five centimetres of gelatine, and a roll-tube made. In every case an abundant growth of anthrax resulted, showing that styrone, even in full strength, is incapable of killing anthrax spores.

Another set of experiments similar to these was made with the saturated solution of styrone spoken of in the following paragraph. The results of these experiments were the same as those where styrone in full strength was used, showing that admixture of water with the styrone did not, in this case at least, increase its germicide action.

(3) On the Bacillus of Asiatic Cholera (Koch).

Eight test-tubes containing sterile bouillon were inoculated with the bacillus, and allowed to develop for twenty-four hours at a temperature of 35° C. To four of these tubes a quantity of a saturated solution of styrone. equal in bulk to the bouillon already present was added, and the tubes placed in a incubator at 35° C. From these tubes, and also from those not treated with styrone, samples were taken and roll-tubes prepared. In all the roll-tubes from the untreated cultures an abundant growth of the bacillus could be seen on the second day. From the tubes treated with styrone, samples were taken five minutes after the addition of the styrone, in two of the resulting roll-tubes no growth appeared, in the other two, there were 180 and 360 colonies respectively. Samples taken twenty-four hours after the addition of the styrone contained no living bacteria.

The saturated solution of styrone which was used in these experiments, and the following ones, was prepared by heating a slight excess of the styrone with tap-water until the water reached a boiling point, allowing the mixture to become cold, and then filtering through a moistened filter. In this way a perfectly clear and homogeneous solution was obtained. This method was employed in order to avoid the use of an emulsion which might be of widely varying strength.

(4) On the Streptococcus Pyogenes.

Fresh cultures of the streptococcus pyogenes were obtained from a metastatic abscess in the axilla. With this material a number of bouillon cultures were made. and, after forty-eight hours incubation at 36.5° C., treated with definite proportions of the saturated aqueous solution of styrone. Roll-tubes were then made as in the previous experiments, to test the cultures for viable streptococci. The results are given in the following table:

Styrone Sol.	100 % †	3 % †	6 %	9 %	12 %	15 % †	21 %	30 %
After 8 min.	****	..	..	..	..	..	..	..
" 1¼ hrs.	0	****	..	..	..	**	..	..
" 2 "	..	****	****	****	****	**	*	*
" 4¼ "	..	****	..	..	..	**	..	..
" 6 "	..	****	****	****	****	*	*	*
" 8 "	0	..	..	..	..	..	..	..
" 18 "	0	..	..	..	..	..	..	..

† Experiment made in quadruplicate, the others made in duplicate.

An attempt has been made in the above to indicate the relative number of colonies present in the roll-tubes, as compared with the number in a control roll-tube made from a culture of the streptococcus prepared at the same time and manner as those to which the styrone solution was added, but to which no styrone had been added. The growth in those roll-tubes in which the number of colonies did not differ materially from that in the control is indicated with four asterisks, a considerably smaller number with three, and so on. The cultures were kept at a temperature of 36.5° C.

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[2] Zeitschr. f. Hygiene, Ed. I., 293.

In order to determine whether the multiplication of the streptococcus would be inhibited by the addition of a smaller proportion of styrone than would be necessary to kill it, the following experiments were made. To test-tubes containing a known amount of agar-agar definite proportions of the styrone solution were added, and, after thorough mixture, the agar quickly solidified. These tubes were then inoculated with the streptococcus, and placed in the incubator at 36.5° C. At the same time a control culture was made to serve as a standard of comparison. Great pains were taken to have the amount of the bacterium used the same for all the tubes. The result of a comparison of the growth in the styrone-agar tubes, with that in the control-tube is given in the following table.

Styrone Sol.	0.8 %	1 6 %	2.4 %	4 %	5.6 %	8 %	12.5 %	25 %
After 24 hours,	****	****	****	****	****	****	0	0
" 7 days,	****	****	****	****	****	****	0	0

(5) On Staphylococcus Pyogenes Aureus.

This coccus was obtained in fresh culture from pus derived from an acute abscess. The experiments with it were parallel with those made with the streptococcus, and require no special description. The results of bouillon cultures of the staphylococcus treated with styrone solution at 36.5° C., are tabulated as follows:

Styrone Solution added	100 %	60 %
After 1½ hours	****	..
" 2 "	..	****
" 10 "	..	****
" 24 "	0	..

Agar-agar, containing definite proportions of styrone, was inoculated with the staphylococcus. Kept at a constant temperature of 36.5°, and compared with a control culture of the same age, the styrone solution of eight-tenths, one and six-tenths, two and four tenths, four, five and six-tenths, eight, twelve and five-tenths, and twenty-five per cent., after twenty-four hours and seven days, showed in each case a growth in which the number of colonies did not differ materially from that in the control tube.

(6) On a Guinea Pig.

A guinea pig weighing 720 grammes, was fed, by means of a stomach-tube, with the saturated solution of styrone used in the foregoing experiments. The experiment was made three times, the dose being two cubic centimetres, five cubic centimetres, and ten cubic centimetres. In no case did any appreciable effect result.

B. Exprriments with Sulphonaphthol.

(1) On Streptococcus Pyogenes.

Sulphonaphthol Solution added,	100 %[1]	3 %	15 %
After 8 minutes	0	..	..
" 1½ hours	..	**	0
" 4½ "	..	**	0
" 24 "	0	..	..

[1] Experiment made in quadruplicate, the others in duplicate.

These experiments were similar to those made with styrone. The sulphonaphthol was used in a solution prepared by adding about three cubic centimetres of it to fifty cubic centimetres of water, heating to incipient boiling, cooling and filtering. Temperature 36.5° C.

To determine the inhibitory action of the sulphonapthol. Temperature 37°.

Sulphonaphthol Sol.	0.8 %	1.6 %	2.4 %	4 %	5.6 %	8 %
Growth after 24 hours,	0	0	0	0	0	0
" " 7 days,	0	0	0	0	0	0

(2) On Staphylococcus Pyogenes Aureus. Temperature 36.5°.

Sulphonaphthol Solution added	100 %	21 %
After 1½ hours	0	*
" 24 "	0	0

To determine inhibitory action:

Sulphonaphthol Sol.	0.8 %	1.6 %	2.4 %	4 %	5.6 %	8 %
Growth after 24 hours,	****	***	*	*	0	0
" " 48 "	****	****	*	*	0 (?)	0
" " 72 "	****	****	**	*	*	0
" " 9 days.	****	****	****	****	*	0

(3) On Anthrax Spores.

Silk threads containing anthrax spores were immersed in sulphonaphthol, full strength, for twenty-four and forty-eight hours, and then roll-tubes made. In all cases an abundant growth of anthrax resulted after the threads had been transferred to gelatine.

C. Experiments with Pure Volatile Eucalypti Extract.

(1) On Streptococcus Pyogenes.

A saturated solution was prepared in a manner similar to that followed in the experiments with styrone. Temperature 36.5°.

Eucalypti Solution added	100 %
After 8 minutes	****
" 8 hours	****
" 18 "	****
" 24 "	****
" 7 days	***
" 8 "	***

(2) On Staphylococcus Pyogenes Aureus. Temperature 36.5°.

Eucalypti Solution added	100 %
After 1½ hours	****
" 24 "	****

(3) On Anthrax Spores. No effect.

D. Experiments with Glycoboron.

(1) On Streptococcus Pyogenes.

A ten per cent. solution was used. Temperature 36.5°.

Glycoboron Solution added	100 %
After 8 minutes	****
" 8 hours	****
" 18 "	****
" 24 "	****
" 7 days	****
" 8 "	****

(2) On Staphylococcus Pyogenes Aureus.

Glycoboron Solution added	100 %
After 1½ hours	****
" 24 "	****

(3) On Anthrax Spores.
No effect, even in full strength.

E. Experiments with Carbolic Acid.

These six experiments were made parallel with those to determine the inhibitory action of styrone and sulphonaphthol on the staphylococcus pyogenes aureus. A saturated solution of carbolic acid was prepared and used in the same manner as the solutions in the former experiments. Temperature 37° C.

Carbolic Acid Sol.	0.8 %	1.6 %	2.4 %	4 %	5.6 %	8 %
Growth after 24 hours,	****	****	****	****	***	*
" " 5 days,	****	****	****	****	****	***

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THE CLINICAL HISTORY OF ARSENICAL POISONING.[1]

BY A. F. HOLT, M.D., CAMBRIDGEPORT.

Arsenic is by far the best known of all poisons, there being hardly a person in the community but what is familiar with its deadly properties. It can not only be had for the asking at nearly all the street corners, but it is even extensively advertised in the form of rat-poison and Paris-green for the destruction of potato-bugs. It is tasteless and odorless, and can readily be mixed with most kinds of food, both solid and liquid.

These facts, no doubt, in a large degree account for the almost daily occurrence of cases of arsenic poisoning both suicidal and homicidal. For the perpetration of both these crimes it is probably used oftener than all of the other poisons combined, and its use for such purposes is constantly increasing. In my own limited experience in the last four years, sixteen cases have occurred, nine of these were probably cases of murder, the remaining seven being suicides or attempted suicide.

The exceedingly common use of this substance for criminal purposes makes the subject of arsenical poisoning not only one of great interest to the medical jurist, but also one of which he must have a thorough and critical knowledge for a proper performance of his duties.

The first suspicions of a criminal case of poisoning with arsenic, and it is only with such that the medical examiner has to deal, are usually aroused at the bedside of the victim; and as such suspicions must often be confirmed or dispelled by the clinical history of the case alone, such a history becomes of great medico-legal importance. Such cases are, as a rule, fairly typical and well-marked, most of them following the same general course and presenting the same prominent symptoms. Unfortunately, however, some of the diseases that result from natural causes present the same general symptoms, and to distinguish between these is always difficult and often impossible.

No better evidence of this can be had than that presented by the notorious Robinson cases. Here were eight cases of criminal arsenical poisoning, seven of them occurring within a period of about five years in one family, and the other in a near relative. All of these cases were treated by physicians of large experience, most of whom are among the very best in our profession, men who, as careful and accurate observers, stand in the very front rank. Yet the real cause of the sickness and death of these victims was not even surmised until a chain of circumstances, unknown, of course, to the physicians, came to the knowledge of the associates of the Robinson family. There was no suspicion of arsenical poisoning in these cases, and nothing to excite such suspicion except the symptoms presented by the patients themselves, and these could readily and properly be accounted for by diseases of every-day occurrence.[2]

Reports of cases of arsenical poisoning are scattered through the medical journals that have been issued within the last forty or fifty years, and such reports comprise very largely the literature of this subject, so far as the clinical history of such poisoning is concerned. All kind of symptoms have been reported to result from an overdose of this substance.[3] Some medico-legal writers have divided these cases into periods, some of one time and some of another; while others have described them as acute and chronic; and the symptoms that are described by writers on the subject represent nearly all the ills that flesh is heir to. No one has attempted to reduce them to order, and I am sure no successful effort could be made to eliminate from them a clear and concise description of the clinical history of arsenical poisoning that would apply to all, or even a majority of such cases. No such effort to eliminate from the mass of symptoms ascribed to arsenic a clear and detailed description of such poisoning will be made in this paper, for the writer has had no better opportunities of observing cases of this sort than his predecessors, and only an attempt will be made to describe such symptoms as will probably occur in such cases, and the order in which they appear, symptoms that should at least arouse our suspicions of arsenic poisoning where they cannot be clearly and definitely accounted for in some other way.

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[1] Read before the Massachusetts Medico-Legal Society, October 3, 1888.

[2] There has been a good deal of adverse criticism, not only on the part of the community at large, but in the public press, both as items of news and in editorials, because the physicians in attendance on these cases did not discover their real cause, or at least have their suspicions aroused. The general impression is that they were all treated, or at least most of them, by the same physicians. This, of course, was not the fact. The guilty mother was very careful not to employ the same physician twice; and, in ordering a consultant, she always sent for a different one each time. Not only this, but no more than two of the victims died in one house or one neighborhood. But even had one physician treated them all, his suspicions might not have been aroused. There never was a breath of suspicion on the part of the friends of the Robinson family, who must, of course, have known of all the deaths and the circumstances surrounding their occurrence. As the sickness of these unfortunate people was like that of diseases from other causes than arsenic, diseases, too, of common occurrence, why should the suspicions of the physicians have been aroused more than that of the friends? Doctors are not looking for a murderer behind the door of every house they enter, where there is vomiting, purging and other gastric disturbances the cause of which does not readily appear. A physician who has no more faith in humanity than this, has certainly mistaken his calling, and such an one would be unworthy of confidence or respect.

The people and the press that have made these unjust criticisms forget that cases of poisoning with opium, strychnia, the strong acids, and, in fact, those produced by all the other poisonous substances, are almost invariably detected at once by the physician, even if he has never seen a case of poisoning. The reason of this, of course, is, the symptoms produced by most poisons are clearly defined and distinctive, while those produced by arsenic are not so, but are like those produced by many other causes.

[3] Many unquestionably, even if not a large majority, of the cases of arsenical poisoning that have been reported in the medical journals were observed by men little used to habits of close observation, and less to recording what they saw, and this fact may account for some of the symptoms that have been referred to arsenic; still there can be no question but what under different circumstances of administration, and in different individuals, the results may be variable and widely different in different cases.

Arsenic is both a narcotic and irritant poison: sometimes one set of symptoms and sometimes the other, may prevail. It has a specific effect upon the mucous lining of the stomach and bowels, and this effect is produced whether the poison is swallowed or administered in some other way, as for instance, where a considerable quantity is applied to an ulcerated surface.

The time between the taking of a poisonous dose of arsenic and the occurrence of the first symptoms is variably stated as being from a few minutes to sixteen hours, depending upon the condition of the stomach. The real cause of the great difference in time in producing poisonous effects is, I believe, largely due to the sparing solubility of arsenious acid (the form in which this poison is usually taken). If, for example, the stomach is covered with mucus, or contains some mucilaginous material with but little water, or if it contained semi-solid food of any kind, the crystals of arsenic might readily become imbedded in it and remain for a considerable period before enough would be dissolved to produce poisonous effects. The usual time for the first evidences of the effect of the poison to appear is from half an hour to an hour. They are rarely delayed more than two hours, and almost never appear sooner than twenty minutes. A single case has been reported where the vomiting and pain occurred almost as soon as the poison was swallowed.

The symptoms of arsenical poisoning as given by one author are as follows: "The symptoms produced by the poison are an austere taste; fetid state of the mouth; frequent ptyalism; continual hawking; constriction of the pharynx and œsophagus; the sensation of the teeth being on edge; hiccough; nausea; anxiety; frequent sinkings; burning pain at the præcordia; inflammation of the lips, tongue, palate, throat, bronchi, and œsophagus; irritable stomach, so as not to be able to support the blandest drinks; vomiting of matter, sometimes brown, at other times bloody; black, horribly fetid stools; small, frequent, concentrated and irregular pulse, but occasionally slow and unequal; palpitations; syncope; insatiable thirst; burning heat over the whole body, or a sensation of icy coldness; difficult respiration; cold sweats; suppression of urine; scanty, red, bloody and sometimes albuminous urine; change in the countenance; a livid circle around the eyelids; swelling and itching of the body; livid spots over the surface, and occasionally a miliary eruption; prostration of strength; loss of feeling, especially in the feet and hands; delirium; convulsions, often accompanied with insupportable priapism; falling off of the hair, detachment of the cuticle, etc. In some cases there is inflammation with burning pain in the urino-genital organs. Occasionally the symptoms have a perfect resemblance to those of Asiatic cholera, in a stage of collapse." This author further says: "It is very rare to observe all these symptoms in a single individual," and, "that sometimes they are nearly all wanting, death taking place without any pain or prominent symptom."

From such a confused mass of symptoms as these, indicating disturbance in every part and every vital organ of the body, and these perhaps presented in all conceivable combinations with nothing else to arouse his suspicions of arsenic poisoning except the condition of his patient, how is the physician at the bedside to determine that the case with which he is dealing is one of arsenic poisoning? or how is he to have his suspicions aroused in this direction? Certainly not from arranging in his mind, and keeping before him for instant use, such a confused mass of ills as are here enumerated, as such an attempt could only lead to failure, but rather, I believe, by the careful consideration of the prominent symptoms produced by arsenic, and the order in which they occur.

The first symptom that occurs in these cases and one that all agree is usually present, is a feeling of faintness or weakness. This comes on in a half-hour or an hour after swallowing the poison, and continues until the more marked symptoms are manifest. This faintness is, I believe, from the physiological effect of the poison. The next prominent symptom, and one, too, that is almost always present, the exceptions being very rare, is vomiting. This usually occurs in from a half-hour to two hours of the ingestion of the arsenic. Occasionally this symptom is delayed; but the above rule would, I believe, include nine-tenths of these cases. The vomiting is violent and incessant, almost always continuing, if the case proves fatal, until death. The vomitus, after the stomach has been first emptied of its contents, consists of a watery secretion mixed with glairy mucus, bile and sometimes streaks of blood. This vomiting is almost sure to occur whenever anything is taken into the stomach. It is accompanied by a severe and pretty constant retching and a burning pain. The pain is referred to the region of the stomach and lower part of the chest. In one case that came under my observation, the patient complained that "she was burning up inside."

Pain in the stomach and vicinity is one of the most marked signs of arsenic poisoning, and is rarely absent: usually it is of the burning character above referred to. This continues to the end. Another pronounced symptom is dryness of the throat and mouth, and great thirst. The patient is constantly calling for water, although he knows that the drinking is sure to excite vomiting. The next prominent symptom to appear, and one that is almost always present also, is the great tenderness on pressure over the region of the stomach. This tenderness is usually very acute, the patient often crying out at the least touch. This symptom is, I believe, one of the most typical of arsenic poisoning. It does, of course, occur in other forms of gastric irritation, but generally it is not so acute, and such cases almost invariably have a very different history. This acute tenderness accompanied by vomiting, pain and thirst, coming on suddenly in the absence of any known cause, should be considered good ground for suspicion, at least of metalic poisoning.

The next prominent symptom is diarrhœa. This occurs in from one to three hours. The stools are at first yellowish and very loose, afterwards they may become watery and at times bloody. Often there is great and continuous tenesmus, with only the discharge of a little blood. This symptom of looseness of the bowels is not always present. In two cases that came under my observation, there was no discharge from the bowels; both of these terminated fatally in about eight hours. In another case, that of a girl sixteen years of age, a profuse watery diarrhœa came on soon after the vomiting, and continued up to within an hour of her death, which occurred in about six hours from the commencement of the poisoning.

The above symptoms usually continue from two to five or six hours, when the pulse becomes quick and feeble, the skin cold and clammy, and perhaps covered with profuse perspiration; the face is pinched; in a word, the victim falls into a state of collapse, in which he may remain for some hours, death usually occurring however, in from five to ten hours after the ingestion of the poison. During the last hours of life there is often cramps (particularly in the legs and arms), low delirium, coma and sometimes convulsions. In some of these cases these symptoms continue twenty-four hours, and rarely longer, although all authors agree that a very large proportion of them terminate in nine or ten hours. In cases where the death is deferred four or five days, the vomiting continues, particularly when anything is taken into the stomach. The skin is dry and hot, and after a day or two becomes sallow and sometimes jaundiced; the eyes yellow; the tongue dry and cracked; and the lips and gums bleed readily. The pulse is small and quick; the stomach and bowels are distended and tender; the urine is diminished in quantity, and often contains a large amount of albumen; the cheeks are sunken; there is often delirium and great prostration; until at last the patient sinks into a state of collapse, as in the more acute cases, and dies.

This class of cases is much more likely to escape detection than those where death occurs in a few hours, as the effects are much less pronounced, and some of the symptoms may be absent, or so slight as to attract but little attention. Often there is little or no appearance of a fatal issue for the first two or three days, or until the fatty changes in the liver and kidneys has seriously complicated the case by bringing about a series of symptoms, the result of such changes.

In another class of cases the poison seems to act as a narcotic, the victim complaining of little or no pain or nausea, but sinks into a sound sleep, soon becomes comatose, sometimes convulsed, and in a short time dies. It is this class of cases, and those that rapidly fall into a state of collapse after the pain and vomiting appears, that are the most speedily fatal.

In five cases of which I have had intimate knowledge, they have all died in less than nine hours from the inception of the poisoning. In three other cases of poisoning with Paris-green, used for the destruction of potato-bugs, recovery took place, although in one case more than a dessert-spoonful was swallowed; the explanation of this escape probably being, that the stuff called Paris-green used by the farmers, is made up largely of adulterations. The other ten cases that have come under my observation, including the Robinson cases, have lived from five days to six weeks from the time evidences of poisoning were first observed. These deaths were all homicides, and in eight of them the poison was administered by one hand. It is certainly very extraordinary that all of these cases should so widely differ, so far as the deaths are concerned, from the usual rule in cases of arsenical poisoning. In some of these, undoubtedly, the dose was repeated, and perhaps more than once. To me there is no more remarkable fact connected with this notorious series of crimes (the Robinson cases) than this one. How a woman, ignorant of the effects of arsenic except to know that it was a poison, could so graduate the dose in eight successive cases as to delay the fatal issue from six days to six weeks, is beyond comprehension. It was undoubtedly this anomalous result that enabled her to conceal her crime so successfully. One of the deaths was certified as caused by pneumonia, one by typhoid fever, one by meningitis, one by bowel disease, and one by kidney disease.[4] Had the clinical history of one of these cases been the usual one of arsenical poisoning, with a fatal issue, it is more than probable that the real cause of death would have been detected. The causes of death in arsenic poisoning are the physiological effect of the drug, shock, and irritation of the intestinal canal and other organs. It may be from one of these alone, or from two, or from all of them combined. Cases of death that occurred from this cause within one hour of the poisoning, or even those that occur later, where no irritant effects have been observed, are from the physiological effect of arsenic; those occurring later, and within eight or nine hours are usually from the physiological effect and shock; while those that occur in three or four days are from irritation and the consequent inflammation, perhaps combined with physiological effects on the liver and kidneys. The diseases that may simulate arsenic poisoning are cholera morbus, colic with vomiting and gastric irritation from other causes. The points of distinction between these and arsenic poisoning, so far as their prominent symptoms are concerned are not well-marked; still, when the whole history of a case of either of these ailments is carefully compared with one of arsenic poisoning following the usual course, there usually are points of sufficient difference to enable one to make a differential diagnosis with a tolerable degree of certainty. For instance, the pain of colic or cholera morbus is usually paroxysmal and griping, or hard; while the pain of arsenic is burning and continuous. There is not often tenderness in either of the former, while this is a well-marked symptom of the latter. The vomiting of arsenical poisoning almost always is the first serious symptom; and this (and the retching) is continuous, or is repeated at short intervals; while that of cholera morbus and colic, if it occurs at all in the latter, comes on later, the pain almost invariably preceding it.

Thirst is a prominent symptom in arsenic poisoning while it is often absent in cholera morbus and colic. The diarrhœa of arsenic comes on after the other symptoms are well established; in the diseases we are considering, it is often the first sign of disturbance. Cholera morbus and colic usually respond readily to remedies, the pain and vomiting ceasing; and health is rapidly restored. And they are almost never fatal, except in the old and feeble; while, in arsenic poisoning, the case goes on from bad to worse, in spite of treatment, to a fatal issue. Therefore, the severity of symptoms is another of the cardinal points in differential diagnosis. Cases of gastric irritation of severe type, may, under certain circumstances simulate arsenic poisoning very closely; but fortunately such severe irritations are of rare occurrence, and usually they can be traced to some well-marked and definite cause. Cases where such well-marked cause does not appear should at once arouse suspicion of metallic poisoning. In such cases, where the vomiting continues without apparent cause, the settlings of vomitus should be examined for crystals of arsenic, and sent to a chemist for analysis. This matter, however, belongs to the medico-legal considerations of arsenic poisoning rather than to its clinical history.

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[4] It perhaps should be further stated that in all of these cases the guilty mother selected a time to administer the poison when they were sick. For example, the sister had been suffering nearly a week with pneumonia before Mrs. Robinson saw her; the husband, whose case was supposed to be one of typhoid fever, came home from Boston suffering so severely with pain, nausea and vomiting that a physician was at once sent for; while Willie, the last victim, was under medical treatment from the result of a fall.

In cases of arsenic poisoning where death does not occur for some days, the prominent symptoms, as has already been said, are usually less well-marked: consequently the diagnosis is more difficult. Such cases can only be determined by a careful consideration of their histories and surroundings, examination of the vomitus for crystals of arsenic, and chemical analysis of the urine, as this poison is largely eliminated by the kidneys.

Chronic arsenical poisoning occurs occasionally from the repeated administration of small doses, although there is little likelihood of this being attempted for purposes of crime, except possibly by one thoroughly familiar with its action. These cases may present all the symptoms of the acute form of poisoning, although usually in a mild degree; and to these may be added extreme nervousness, trembling, paralysis (particularly of the hands or feet), tingling in the fingers and toes, a vesicular eruption on the body or limbs, suffusion of the eyes, ulceration of the mouth, jaundice, strangury, etc. The patient becomes emaciated, prostrated, and finally dies from exhaustion, or disease of the kidneys. One of the Robinson cases was of this kind, the patient, a girl twenty-two years of age, living six weeks after the first symptoms of poisoning showed themselves. In this case there was paralysis of both feet, and the urine contained albumen and casts.

As has been already said, there are no distinctive symptoms of arsenic poisoning, and one can only be certain he is dealing with such a case when the poison is found in the vomitus or urine, or there is other proof that it has been administered. The physician should be reasonably alert in trying to determine the causes of cases that come under his observation where there is vomiting, purging, pain, etc.; but it is no part of his duty to suppose that all such cases are the result of metallic poisoning.

LATENCY OF ATAXIC SYMPTOMS IN CASES OF OPTIC ATROPHY.[1]

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It has been long noted that optic atrophy, when present in locomotor ataxia, appears generally among the earlier symptoms. Indeed, given a case of optic atrophy without recognizable cause, the chances are altogether in favor of characteristic pains, bladder irregularities, or other symptoms, appearing later, which, even if not marked, will enable us to place the case under this category.

Charcot[2] emphasizes the fact that most women coming to the hospital with amaurosis develop sooner or later, in the majority of cases, ataxic symptoms, perhaps ten, perhaps fifteen years later. In one case cited, the blindness was followed in ten years by shooting pains and girdle pains, these symptoms remaining stationary for ten years more, when appeared symptoms of muscular incoördination.

Gowers[3] mentions cases of his own in which optic atrophy preceded ataxia by sixteen and twenty years, and quotes a case reported by Buzzard,[4] in which atrophy existed fifteen years, associated only with lightning pains and loss of knee-jerk.

In his recent text-book, Gowers[5] has stated that atrophy of the optic nerve so universally appears early in the disease, that, after the ataxic gait is fairly established, it is of rare occurrence. Conversely, he states that when optic atrophy has become developed, it is common for the other symptoms of locomotor ataxia to remain in abeyance. To use his own words, "In a large number of cases, the ataxia never comes on, the spinal malady becoming stationary when the nerve suffers." If this is true, its bearing on the question of prognosis is of considerable import. It is certainly something to be able to assure a patient, at any stage of this disease, of his probable, or even possible, immunity from any of its distressing symptoms. In the matter of diagnosis, also, the subject is worthy of consideration.

I have looked through the records of sixty-six consecutive cases of locomotor ataxia, — fifty-two seen in the Neurological department of the Massachusetts General Hospital, and fourteen in private practice, — in the hopes of throwing additional light on this branch of the subject. The result is as follows: Out of the sixty-six cases, the diagnosis optic atrophy was found in fourteen; and six more had decided loss of eyesight. In these six there was no description of the optic nerve given in the notes, which prevents their being classed with certainty under the cases of atrophy, although undoubtedly some, and perhaps all, of them belong there. Out of the fourteen cases of optic atrophy, the degree of incoördination was mentioned in eleven. In three of these eleven, there was no ataxia; in five, it was slight; in three only was there marked ataxia. In the eight cases in which the ataxia was slight or wanting, the duration of the disease was respectively, two, three, four, seven, eight, ten, twelve and twelve years. In nine of these fourteen cases, the knee-jerk was noticed. It was present in one or both legs, in four out of the nine; and in one other case, where the loss of eyesight was so considerable as to leave little doubt that optic atrophy was present, the knee-jerks were normal. In all of the cases the disease was well advanced. These figures, while far too incomplete to be regarded as statistical, are still of some interest, sufficiently so to encourage further investigation.

The noticeable features are the large proportion of cases in which the knee-jerk was retained in one or both sides, and the large proportion in which ataxia was either absent or very slight. With regard to the ataxia, this has been already considered by neurologists as a symptom not necessary to the diagnosis, hence the tendency to restore the name "tabes dorsalis" in preference to locomotor ataxia. The point to which I would call attention is that to which Gowers has practically alluded, namely, that it is the cases in which optic atrophy is present in which we may expect to find the absence or indefinite postponement of ataxia. Again, with regard to the preservation of the knee-jerk, the loss of knee-jerk in locomotor ataxia is, as a rule, one of the earliest and most constant symptoms, a fact which lends considerable significance to its preservation in four out of nine (probably five out of ten) cases where optic atrophy was present. The practical bearing of these facts is to assist us in both diagnosis and prognosis. As regards diagnosis, they would lead us to place with confidence under the head of locomotor ataxia certain cases of optic atrophy which we may have hesitated to place there on account of the presence of knee-jerk and absence of ataxia. As regards prognosis, they would lead us to predict a comparative latency of the motor symptoms of the disease where optic atrophy has become pronounced.

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[1] Read before the Boston Society for Medical Improvement, April 8, 1889.

[2] Leçons sur les Maladies du Système Nerveux, 1880, t. ii, p. 11.

[3] Gowers' Medical Ophthalmoscopy, p. 164.

[4] Brain, 1878, No. 2, p. 168.

[5] Diseases of the Nervous System, 1888, p. 293.

The constancy of one symptom was noticeable in the cases with optic atrophy as in those without it, namely, the Argyle-Robertson pupil. This symptom, together with characteristic pains, may, it seems, be looked for early in this class of cases, however latent the motor symptoms. If the Argyle-Robertson pupil were dependent on optic atrophy, it would be expected particularly in these cases; but its constancy in the other cases shows it to be independent, at least in general, of the lack of conducting power in the optic nerve, a fact already well recognized.

It is worthy of note, that, out of sixty-six cases taken indiscriminately, there were fourteen with the diagnosis of optic atrophy, and several more in which it was probably present. Statistics on this point vary greatly. Erb found eight cases in about seventy, while Topinard noted disturbance of vision in forty-nine out of one hundred and two, and Cyon found sixty cases with amblyopia and amaurosis out of two hundred and three. The statistics of more recent observers also vary markedly. The figures of oculists would naturally run higher than those of neurologists. Gowers states that the proportion is much less than is generally believed, certainly not exceeding one case in ten.

I have selected three cases to report this evening, premising that they are presented, not as being in any way unique, but as fairly representing the class of cases under consideration.

Case I. J. C., aged forty, married, an engraver. Referred to me at the Massachusetts General Hospital, by Dr. Standish, under whose care he is at present. Four years ago he began to suffer from recurring pains in both knee-caps, without swelling or redness, and not increased by movement. He describes the pains as shooting and stinging, lasting only a few minutes. Similar pains appeared later in the thigh and in the toes of the left foot. Six months ago he noticed failure of eyesight, which rapidly progressed to almost complete blindness within three months. There have been bladder irregularities, but no absolute incontinence. There have been no laryngeal nor gastric crises. He tires easily in going up stairs, and has done so for four or five years. He has never noticed any staggering or numbness. He never saw double.

Physical examination shows absence of tendon reflex on the left, a trace on the right. Both pupils react to accommodation, neither to light. Both pupils are small, the left smaller than the right (said by the patient always to have been so). There is no trace of impairment of any variety of sensation, not excepting muscle sense. There is no special loss of nutrition. The gait is perfect, and the patient stands on either foot without swaying, also with both feet together and the eyes shut. Ohpthalmoscopic examination by Dr. Standish, as well as by Dr. Wadsworth, who saw him at the hospital, shows characteristic optic atrophy. The vision is now so reduced that he can only count fingers with the right eye at four feet; vision in the left eye being 0.4, not improved by convex or concave glasses.

Case II. Mr. ——, aged forty-seven, married. Referred to me for examination by Dr. Chandler. He has also been examined by Dr. Wadsworth and Dr. Prince. Has had weakness and pains in the back since 1864, when he was injured by the blowing up of a vessel. He first noticed trouble in sight in 1879, which increased steadily. He can now with the left eye, barely count fingers at a foot: with the right eye, there is perception of light only. Since 1882 he has had pains, sometimes very severe, perhaps three or four a year; lighter attacks of pain often, lasting ten or twelve days. These pains are generally in the back of the legs and in the hips. During the past eight or nine years a pain runs up the back to the head. This pain cames quickly and recurs perhaps a dozen times a day. Sharp, throbbing pains appear in the legs, lasting from an hour or two to several days. The locality of these pains varies; for example, one day in one foot, one day in the other, again about the knee, no swelling or redness accompanying the pains. In 1885, he saw double for six weeks. There has been no bladder trouble, no laryngeal or gastric crisis, no numbness, nor weakness in the legs; occasionally a slight tendency to stagger. Twelve years ago he had what was considered a chancre, not followed by eruption or falling out of hair.

Physical examination shows the knee-jerk absent in the right, present in the left. There is no swaying with the feet together and eyes shut. He stands well on either foot with the eyes open, and fairly well on each foot with them shut (which is a difficult test). The lightest touch is felt everywhere. The plantar reflex is present. The right calf measures 15¼ inches, the left 15⅝ inches. The right pupil is larger than the left; neither reacts to light, both to accommodation. There is external strabismus in the right eye. The left field is cut off nearly to the horizontal meridian, and moderately contracted in other directions. Ophthalmoscopic examinations by Drs. Wadsworth and Chandler shows gray atrophy of the optic nerve, more pronounced in the right. The pulse is 106. There is no scar on the penis, but the frænum is wanting (said to have been burnt off).

Case III. A. D., aged thirty-one. Referred to me for an opinion by Dr. Chandler, and afterwards by his attending physician, Dr. Cutter, of Leominster. He has also been examined by Dr. Knapp. He first noticed trouble in sight seven years ago, and has steadily lost vision up to the present. The only other symptoms complained of, are occasional pains in legs and feet, occasional dizziness, occasional attacks of gastric pain and vomiting (crises?), and a tendency to tire rather easily, with occasional slight unsteadiness. He also states that his water occasionally escapes, and that he sometimes holds it all day without desiring to pass it. There is no definite specific history, but he states that there was considerable falling out of hair after an attack of gonorrhœa twelve years ago. No sore was noticed, and no other secondary symptom.

Physical examination: There is a slight trace of knee-jerk on the left, none on the right. The pupils are unequal, and react to accommodation, not to light. There is no impairment of sensation; no wasting; slight ataxia. Dr. Chandler finds marked optic atrophy. With the right eye he cannot count fingers. The vision in the left eye is .9.

In these cases will be noted not only absence or partial absence, of ataxia, but also that of sensory impairment, at a stage when these symptoms would be expected. It will also be noted that the knee-jerk was not entirely lost in either of the three cases. It is also noticeable that nutrition is unaffected, the patient in one case (Case III) especially, being a stout, well-nourished man, with calves measuring over fifteen inches. This is an exceptional condition in well-advanced locomotor ataxia, although this disease is not characterized by distinct wasting of muscles and groups of muscles, as are diseases affecting the peripheral nerves or the anterior cornua of the cord. The importance of these points in diagnosis is illustrated by the fact, that in two of the cases, considerable doubt has arisen in the minds of consultants as to the nature of the underlying cause of the optic atrophy.

Acting upon the suggestion offered by Dr. Webber in the discussion of this paper, I append a brief abstract of the symptoms in the cases of optic atrophy.

Case IV. M. R. Numbness and darting pains for two years; delayed micturition; knee-jerk absent; pupils unlike. Argyle-Robertson pupils; pulse 102; vision blurred, field normal; discs opaque, with sharply defined vessels, especially right.

Case V. T. M. Atrophy of optic nerve, twelve years; staggering during past eight weeks; Argyle-Robertson pupils; knee-jerk normal. During seven or eight years, beginning about fifteen years ago, patient was subject to attacks of vomiting about twice a week.

Case VI. Pains, twelve years; pupils unlike, Argyle-Robertson pupils; knee-jerk absent; slight staggering with closed eyes; optic atrophy, (*b*) V = $\frac{14}{30}$ (*b*).

Case VII. A. F. Darting pains in legs, seven years; bladder troubles, one year; diplopia and loss of sight, seven years; complete blindness, two and one-half years; vomiting, six years; pupils unlike, Argyle-Robertson; knee-jerk absent; slight ataxia; no anæsthesia.

Case VIII. C. G. (female). Pains, eight years; failing sight, eight months; bladder irregularities; Argyle-Robertson pupils; loss muscle sense and slight loss tactile sense in middle toes (b); slight unsteadiness; stands fairly well with feet together and eyes shut; ophthalmoscopic examination by Dr. H. W. Bradford shows optic atrophy of both eyes.

Case IX. W. F. B. (female). Shooting pains, seven years; weakness in legs, several years; staggering, one year; loss of muscle sense; loss of vision, one year; cannot count fingers with left eye; with right eye, vision one-third.

Case X. N. B. Pains and ataxia, two years; loss of sight lately; knee-jerk absent; tabetic knee joint; slight optic atrophy.

Case XI. P. C. Pains, a number of years; slight failing, two years; slight bladder irregularities; vision almost lost in left eye, greatly diminished in the right; color sense almost absent (cannot distinguish light blue from red even in the centre of the field).

Case XII. C. F. Pains in legs; Argyle-Robertson pupils; pupils unlike; scarcely any ataxia with eyes closed; well-marked atrophy of optic nerves.

Case XIII. F. K. Failing sight, two or three years; now, perception of light only; pains one year; Argyle-Robertson pupils.

Case XIV. Gradual failing sight, one year; Argyle-Robertson pupils; pupils small; very slight ataxia; shooting pains in legs; well nourished; knee-jerks absent; marked optic atrophy both; (V. O. D. = $\frac{1}{50}$ V. O. S. $\frac{2}{10}$) nerves white; edges of disc well defined; retinal arteries and veins decreased (Dr. Cheney).

The description of the optic nerves in a few of these cases is such as to leave the diagnosis not absolutely certain. In the majority, however, the loss of sight is too great to admit of question. Whatever may be deducted from the number on account of uncertainty may be offset by the cases in which complete records are wanting, and among which exist, probably, certain cases of atrophy. In any event, the character of the investigation precludes reaching absolute statistics.

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DEMENTIA FOLLOWING ETHER.[1]

BY JOHN HOMANS, 2nd, M.D.

Mania subsequent to an injury or surgical operation has long been recognized, — an article on the subject having been written by A. Schroetter in 1804, — but, as a rule, was supposed to occur in alcoholic subjects or in those with diseased kidneys. Within a few years also, cases of mental disturbance following a surgical operation have been attributed to the antiseptic used, as iodoform or a strong solution of corrosive sublimate. Operations on the genital tract in women have occasionally been followed by mania; but here the cause may properly be found in the peculiar sensitiveness of the female genitalia to surgical interference, a case in point being one of sub-acute mania following the introduction of a speculum.

The object of this paper is to put on record two cases in which the mania seems to have been largely due to the administration of ether, as none of the above-mentioned factors were present. My attention was first called to this subject when a house pupil in the Massachusetts General Hospital by the first case to be reported, and latterly by an able paper by Dr. G. H. Savage,[2] which presents a careful study of the subject, and in which he classifies his cases into acute and sub-acute. The two cases which I present fall into the latter or sub-acute form.

The first case is that of a domestic, thirty-five years old, of a nervous temperament, who was operated upon at the Massachusetts General Hospital, in 1881, for cancer of the breast. The operation, history and appearance of the patient presented nothing extraordinary. The second case was a single lady of over fifty, suffering under the uric acid diathesis, and belonging to a somewhat nervous family who, in 1884, underwent the ordinary operation for fistula in ano. The cerebral symptoms appearing after the operation were so nearly similar in both cases that I present them together, the only difference between the two being that of the time at which the various symptoms appeared or disappeared, and that difference only a few hours, or, in the ultimate recovery, a day or two.

The history of these patients after the operation was as follows: For two days, a condition of euthanasia; patient remarkably happy and comfortable; no pain or discomfort; slightly flushed face; pulse and temperature only slightly raised above normal. On third day, patient a little excited; mind wandered a little, which condition increased till, on fifth day after the operation, the mind was completely gone; patient tried to get out of bed, or tear off the dressings, and constantly talked or muttered to herself, but with a mild, disconnected delirium, no especial delusions being noted. This condition lasted for about a week, when a gradual improvement began; and in about five weeks after operation the mind was perfectly clear. The first case died in a year or two of recurrence of the cancer, but without any mental trouble. The second patient is now alive and well, both physically and mentally. Here, then, are two cases, both women with somewhat neurotic tendencies, falling into the same demented condition after a not especially severe operation, and both recovering at about the same time.

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[1] Read before the Boston Society for Medical Improvement, April 8, 1889.

[2] Brit. Med. Jour., December, 1887.

That delirium tremens or mania sometimes follows surgical injury in alcoholic subjects is almost a medical axiom, and the temporary effect of ether is much the same as that of alcohol. We often tell the friends of a patient recovering from ether that they are not to mind what he says, because he will "talk just as if he was drunk." The physiological disturbances produced by the two drugs being somewhat the same, it seems a reasonable conclusion that their exhibition may give rise to true pathological conditions which strongly resemble each other. The use of drugs other than these two occasionally produces mania, as belladona, a case being mentioned by Dr. Savage in the paper above mentioned. In view of these various facts, therefore, I think it is justifiable to ascribe the prime cause of the dementia in these two cases to the inhalation of ether, other factors being the nervous family history or temperament. It would not be wise to base any strong statement upon a few cases; but I think the surgeon about to operate on a neurasthenic patient should bear in mind the possibility of an attack of mania, accompanied, fortunately, by the probability of a complete recovery.

REPORT OF PROGRESS IN GYNECOLOGY.

BY F. H. DAVENPORT, M.D.,
Assistant in Gynecology, Harvard Medical School.

OPEN FALLOPIAN TUBES.

Dr. John Wallace[1] has gradually come to the conclusion, that not only is the open condition of the Fallopian tube more common than is usually thought, but that it may be a normal post-partum condition just as subinvolution is, and that like that it only gives rise to symptoms when its return to a normal state is arrested. The tubes and ligaments generally increase in size markedly during pregnancy, and anything which retards their perfect involution, such as tight bandaging after labor, permitting the patient to rise too soon, tight lacing or heavy petticoats may result in a more or less patulous condition of the ostium uterinum of the oviducts. As symptoms of this condition, the author notes abdominal pain, numbness, cramps, bearing down, frequent micturition, and pressure upon the rectum. Physical examination shows a congested and œdematous cervix, uterus prolapsed or retroverted, and a profuse discharge of ropy, yellowish mucus. One or both ovaries or tubes are apt to be found in the retro-uterine pouch. A uterine sound may, with a little gentle manipulation, be made to enter the tube, and be passed up to the hilt. This manipulation causes little pain, and is an important part of the treatment.

The treatment in general is prolonged, and consists in rest in bed, hot douches, adjustment of pessary (if possible), catheterizing the tube once a week, and intra-uterine applications. The author gives a list of fifty-three cases in which he found this condition, all of which were cured.

[While we allow that this patulous condition of the tubes following parturition may be common, yet we fail to see that the symptoms the author describes are attributable to the state of the tubes. They are the common symptoms of subinvolution of the uterus. The open tubes seem to us merely a coincidence, and their catheterization not only unnecessary but even hazardous.— Rep.]

RAPID CURATIVE TREATMENT OF CYSTITIS IN WOMEN.

Dr. T. More Madden[2] refers to the prevalence of cystitis in women, and after a brief synopsis of the causes, symptoms, and general treatment, which contains nothing especially new, describes the method of radical cure which he has employed in chronic cases. He thoroughly dilates the urethra with a specially devised instrument, so as to admit the index finger, and for a time completely paralyze the sphincter. In some instances, he uses a dull wire curette to remove the proliferating vesical mucous membrane. In every case, he makes an application of carbolic acid, preferably in the form of the glycerine of carbolic acid of the pharmacopœia. This is "introduced by an ordinary stilette, armed with a piece of absorbent cotton saturated in the application, and passed through the dilator, so as to avoid any of the acid being brushed off in the canal before it reaches the fundus vesicæ, where it should be retained a couple of minutes until every part of the vesical wall contracts firmly upon it." The urethral canal should then be similarly treated. Pain may be relieved by cocaine. The author says that two or three applications, at intervals of a week, will usually cure the most aggravated cases. By this means the severe operation of Emmet, with its subsequent discomforts, is avoided.

ACUTE MANIA AND MELANCHOLIA AS SEQUELÆ OF GYNECOLOGICAL OPERATIONS.

Dr. T. G. Thomas,[3] in this paper, places on record what he considers a "rather remarkable experience" as to the occurrence of acute mania and melancholia as sequelæ of gynecological operations. He, in the outset, distinctly states that he does not regard these states as complications, or necessarily as results, of the operative procedure, but merely as sequels which may or may not be dependent upon it; nor does he wish to be understood as claiming that gynecological operations are especially liable to such sequences.

After stating what he understands by acute mania and acute melancholia, he relates six illustrative cases, four of which belong to the first class, and two to the second. In four of them, there was evidence of eccentricity even before operation, though in none of them could Dr. Thomas discover evidences of hereditary tendency to insanity. Four of the six cases died, one completely recovered, and one was still in progress at the time of the report.

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[1] Brit. Med. Jour., February 23, 1889.

[2] Brit. Med. Jour., March 2, 1889.

[3] Med. News, April 13, 1889.

In current medical literature the author has succeeded in finding the account of twenty other cases of acute mental aberration following upon the performance of gynecological operations. The questions which are suggested by these facts are briefly: (1) Were these the direct result of the operations, or merely coincident states? (2) Is the proportion larger than would naturally occur in so many operations? (3) If the mania is a consequence how is it to be avoided? and (4) Are gynecological operations more likely than other surgical procedures to disturb the condition of the mind?

ON THE INDICATIONS FOR OPERATIVE TREATMENT OF DISEASED TUBES.

The author, W. A. Freund,[4] refers to the fact, that neither the knowledge of the anatomical conditions nor of clinical facts has kept pace with the skill in operating in cases of chronic inflammation of the pelvic organs. To throw some light on this obscurity is the object of this lecture.

Freund refers the variations in the forms of tubal disease, as well as the tubes themselves, to pre-existing anatomical peculiarities. As a result of careful investigation, he has enlarged our knowledge of the growth and changes in the shape of the tubes. As soon as the uterus is formed in the embryo, the tubes begin to twist spirally (from the uterine end laterally), like a corkscrew, until in the thirty-second week of intra-uterine life, they have reached their limit, and show usually six and a half distinct turns. The turn nearest the uterus is sharply defined, then follow two less marked, then three to four and a half like the first. As a result of too great a twist, irregularities may occur, and even sharp bends. From the thirty-second week, an unfolding of the spirals occurs, beginning at the median line and proceeding laterally. At birth, the portion of the tube near the uterus is only slightly wavy, the lateral curves well-marked. From birth on, the tube becomes straighter, until at puberty only the last curve, that near the pavilion, remains. This development makes the tube a patulous canal fitted for its function. If, however, this physiological development is interfered with at any point, pathological conditions result. It is rare that the tubes keep the form which corresponds to the new-born infant up to the time of completed growth. More commonly they are arrested at some stage of their growth, hence do not correspond to the age of the girl. It is rare that loops occur, and the tubes are usually alike on both sides. These grades of arrested development may exist with perfect integrity of the surroundings, and are to be clearly differentiated from the tubes bent by cicatricial bands. In these latter the canal can be with difficulty, or not at all sounded; it is frequently bent, narrowed or obstructed, and thin-wall cysts may occur in parts which are cut off. The ovum cannot freely pass through such a tube, hence danger of tubal pregnancy. Normal and abnormal secretions can be discharged with difficulty, or not at all. Such tumors of the tubes show the well-known sausage-like, irregular contours which correspond to the curves which have persisted. It is different with well-developed tubes. Here pregnancy can reach a much higher grade of development, even its normal end; retention of secretions form simple, oval, smooth sacks, sometimes of great size.

The clinical aspect of diseases of the tubes is made more intelligible by the light thrown on the anatomical relations. Well-marked lack of development of the tubes is an accompaniment of an infantile condition of the genital organs, even of the whole organization. Freund sketches the varying clinical features of the diseases of the tubes in well-developed and undeveloped women, and gives clear indications for the diagnosis of these affections.

There is also a difference in the prognosis. In affections of the abnormally developed tubes, it is materially worse than in diseases of normal tubes. In the latter, the treatment can usually be conservative; while in the former, extirpation of the diseased organs is often the only resource.

LAPAROTOMY REPEATED ON THE SAME PATIENT.

Dr. A. Martin[5] gives his experience in the repetition of laparotomy on the same person. He does not include those cases where, on account of some disturbance a short time after the operation, it became necessary to reopen the abdomen. In all there were twenty-four cases, ten of which were for trouble with the remaining ovary after one had been extirpated. These began two to nine years after the first operation. Seven times affections of the tube gave occasion for the second operation: these were partly cases which had become affected with gonorrhœa after the first operation. A third series embraced four myomata, which were not present at the first operation, but had developed rapidly. And, finally, there were three cases, two of which were in a certain sense connected with the first operation (fistulous track in the abdominal wound, ileus); and the third was for an extra-peritoneal hæmatoma.

As regards the indications for and technique of such repeated laparotomies, the author advises against being led by the possibility of the necessity of a second operation to remove unnecessarily the other ovary, but to keep as much as possible; and the same with regard to the tubes, as long as they are pervious. On account of the frequency of adhesions to the old scar, he always makes the new incision at the side of the old cicatrix; and he raises the question how such adhesions are to be avoided, without, however, giving any definite rules.

PERMANGANATE OF POTASH IN AMENORRHŒA AND DYSMENORRHŒA.

Dr. Lwow[6] gives, in this article, his experience in the use of this drug. He divides the one hundred and eighty-seven cases into five groups. (1) Thirty-two cases of young, in general healthy, somewhat chlorotic, girls who complained of scanty and excessively painful menstruation. All were quickly cured by permanganate of potash, four to six grains a day, with extract of pulsatilla, taken a short time before the period. (2) Seventeen cases of women with superinvolution of the uterus following confinement, or with atrophy of uterus and ovaries. In the majority of these cases about two years had elapsed since the last birth. The potash in the same dose, but given continuously for from three to six months, started the menstrual flow in from four to six weeks, which, with continuance in the use of the drug, took on its regular type. (3) Sixty-two cases of tardy involution of the puerperal uterus in connection with old inflammatory processes of the uterus and its neighborhood, menstruation rather scanty and painful. The results here were satisfactory, though in some cases there was no success, such cases being those in which the puerperal affection had left permanent changes. (4) Sixty-five cases of blenorrhœa of the vagina and uterus. Here the permanganate of potash had no result, in spite of its long-continued use. (5) Eleven cases of women with whom the menopause had begun too early, menstruation ceasing between thirty-five and forty. In these cases also the drug had no effect.

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[4] Sammlung Klinische Vorträge, No. 323.

[5] Zeit. für Geb. und Gyn., Bd. 15, Heft 1.

[6] Therapeutische Monatshefte, February, 1889.

EXPERIMENTAL RESEARCHES ON THE CHANGES IN OVARIES AND TUBES OF RABBITS AFTER TOTAL EXTIRPATION OF THE UTERUS.

Dr. Grammatikati,[7] in view of the frequency of the operation of total extirpation of the uterus, has attempted by means of experiments on rabbits to determine the fate of the ovaries. For this purpose he removed, in some cases, the whole uterus; in others, the uterus and tubes; in still others, one horn, with or without the corresponding tube. In all cases he removed one ovary, in order to compare it with the other when that should be examined later.

He found as a result of these experiments, that, after the extirpation of the uterus, the ovaries continue to be active. The process of the ripening and the bursting of the Graafian follicles, as well as the formation of false corpora lutea, goes on without change. He found the same to be true after both uterus and tubes had been removed.

That the same is true in women he considers probable from clinical observations. Young women on whom these operations have been performed before the change of life, show a variety of reflex symptoms, such as pain, nausea, vomiting, neuralgias, etc., which often assume a periodicity, and which may be explained by a persistence of the functional activity of the ovaries. This is not true of women operated on after the menopause.

Dr. Grammatikati had an opportunity to examine the ovaries of a woman whose uterus had been removed three years before, and found in them all the stages of development of the Graafian follicles and fully developed corpora lutea, with no sign of atrophy of the ovarian tissue.

— Dr. Henry M. Hurd, now superintendent of the State Hospital for the Insane at Pontiac, Mich., in the neighborhood of Detroit, has been appointed superintendent of the Johns Hopkins Hospital. *Science* says of him that his life has been devoted to hospital service, and he has acquired distinction as an administrator, and also as a writer. He was graduated in arts and in medicine at the University of Michigan, and has twice been called by his *alma mater* to a professorship of medicine. He has already visited Baltimore, and will permanently assume his new responsibilities on the first of August next.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

Meeting of April 8, 1889. Dr. W. L. Richardson, President, in the chair.

Dr. G. L. Walton read a paper entitled

LATENCY OF ATAXIC SYMPTOMS IN CASES OF OPTIC ATROPHY.[1]

Dr. J. J. Putman said: I have little to add to what Dr. Walton has said. This group of cases represents a distinct type of the disease. I remember a similar case referred to me by Dr. Jeffries, where the eyesight was suffering greatly, and where we could discover no other evidence of locomotor ataxia. The first signs of this disease may show themselves, sometimes in one part and sometimes another, of the central and peripheral nervous system. A recent theory is that it is of cerebral rather than of spinal or peripheral origin. I should like to ask Dr. Walton if he believes that iodide of potassium could hasten the optic atrophy.

Dr. Hay inquired into the relation between the locomotor ataxia and the atrophy of the capillaries of the disc.

Dr. Wadsworth: The cases of locomotor ataxia which have come under my observation have been, naturally, chiefly those in which sight has been affected or the ocular muscles paralyzed. As regards the sequence of symptoms, I have seen optic atrophy precede the other symptoms by many years, and I have known it to come on several years after the lightning pains, at least, had been present. I have also seen the knee-jerk present where there was well-marked ataxia and pains, as well as pronounced optic atrophy. One fact which has struck me is the comparative frequency with which intelligent patients speak of the failure of sight having been first noticed in dim light. As to the field of vision, to which Dr. Putnam referred, in my experience it presents great variations: it is often much contracted, but, on the other hand, with well-marked atrophy and decrease of central vision, it may not be at all reduced in size.

Dr. Miles Standish: Cases of locomotor ataxia with an early appearance of optic atrophy are common, the consequent impairment of vision being the only symptom noticed by the patient in very many cases. As a rule, where the optic atrophy is such an early symptom, the ataxic symptoms progress slowly, and may even stand still for very considerable periods, as five, ten, or fifteen years. I believe that the use of iodide of potassium will retard the progress of the optic atrophy and consequent loss of vision. Two cases which I have been watching for a long time, and in whom the locomotor ataxia has not notably advanced during that period, have gradually developed a diplopia, which is, however, not constant in amount, but notably increased by fatigue. By the use of prisms, it has been possible for them to attend to business.

Dr. Hooper asked about the value of Charcot's method of suspension for the treatment of locomotor ataxia.

Dr. Walton, in closing the discussion, stated that his own experience with Charcot's method was limited to one case, which he had seen in consultation with Dr. Knapp. Dr. Knapp had suspended the patient a few times only at the City Hospital, with, so far, negative results. The ataxia in this case was well advanced and it was not improbable that the effort of getting to the hospital tended to counteract the benefit of the treatment. With regard to the question of deafness in locomotor ataxia, Dr. Walton had investigated upward of forty cases, in many of whom deafness existed; but in none had there been deafness by bone conduction or loss of special tones, the deafness in every case being due to extraneous cause (cerumen, chronic catarrh of the middle ear, and in one case purulent inflammation with perforation of the drum-head). He had, however, found vertigo in a large number, with tendency to fall in certain directions, this symptom appearing and disappearing in some cases, like diplopia, and not sufficiently accounted for by either ocular or aural trouble. He had drawn the conclusion that the aural fibres of the eighth nerve were not specially liable to be attacked by the disease, but that it was not improbable that the fibres which preside over equilibrium, and which pursue a different course centrally, were subject to the sclerotic process. As to the question of iodide of potassium hastening optic atrophy, he was sceptical. The atrophy was liable in any case to advance with great rapidity, and he would hesitate in a given case to attribute the advance to the iodide. In fact, as Dr. Standish had suggested, its influence was as likely to be beneficial as the reverse. In the case quoted, the patient had become worse under nitrate of silver, and improved again under the iodide.

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[7] Cent. für Gyn., No. 7, 1889.

[1] See page 108 of Journal.

Dr. John Homans, 2nd, read a paper entitled

DEMENTIA FOLLOWING ETHER.[2]

Dr. Edward Cowles said: Persons predisposed to insanity may in rare cases, have mania after anæsthetics. "It is the fact of the temporary disturbance of function, and not the means by which this is produced, which is of most importance" (Savage). The question as to the propriety of using anæsthetics should include neurotic and hereditary conditions.

Dr. Cowles related the history of a woman who had been brought to Somerville after having an operation for lacerated perinæum two weeks previously. She was "somewhat demented, confused and incoherent; had hallucinations of sight and hearing." Three weeks later she was discharged from the asylum, went home and continued well.

Dr. H. R. Stedman said that the cases were striking ones, and seemed at first glance genuine cases of cause and effect. He was inclined to think this only partially true, however, as toxic insanity occurs (almost invariably) only after prolonged and excessive use of the poisonous agent, as is the case with alcohol and lead which are also far less evanescent in effects than ether. Moreover, genuine toxic insanity is of a different and more uniform type than that manifested in the cases reported. He thought, nevertheless, that the ether might hold a place as a factor, in the causation, together with the patient's evident predisposition to mental disorder, and the shock, so to speak, of the operation.

Dr. J. J. Putnam said: I have not seen mental diseases after ether, but recall one case in which tinnitus aurium began immediately after etherization for examination, without operation, and has persisted for two years or more. Later, the patient became suddenly deaf in one ear. She was a nervous woman, and the intensity of the tinnitus and deafness can be made to improve for a time by strong impressions, though they never disappear entirely.

Dr. Standish said that cases at the Eye and Ear Infirmary, after the operation for cataract, both after ether and after cocaine, sometimes wander about on the third or fourth day as if suffering from dementia. It is sometimes attributed to the atropine which has been used.

Dr. C. M. Green: I recall the case of a woman operated upon for prolapse of the uterus. The patient on the fourth and fifth day got out of bed, ran about the room, and gave much trouble. I thought at the time that the mental aberration was due to the shock of the operation. It may have been due to the anæsthetic. I learned one fact from this occurrence; namely, that the stitches in a perinæum do not necessarily suffer because of movement on the patient's part. In this case there was no ill effect from the patient's being about on her feet, the stitches holding perfectly.

Dr. John Homans showed a

SLOUGHING VERMIFORM APPENDIX

from a case of appendicitis, and referred to six other cases which he had recently operated upon.

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AMERICAN OTOLOGICAL SOCIETY.

Twenty-second Annual Meeting, held at the Pequot House, New London, Conn., July 16, 1889.

The Society was called to order by the President, Dr. J. S. Prout, of Brooklyn.

The first paper read was entitled

INFLAMMATION OF THE TYMPANIC ATTIC AND PERFORATION IN SHRAPNELL'S MEMBRANE,

by Dr. B. Alexander Randall, Philadelphia.

The author reported 20 cases, 15 of which had been seen in the past six months, and urged that the condition was not a rarity. It often coexists with one or more perforations of the other parts of the drum-head. If sought and recognized early, it is a less tedious and serious matter than these attic inflammations are generally considered to be. He cited some 120 cases reported by several observers among 10,000 patients, and while he had seen a still larger proportion, accepted this as the average. Passing over the treatment as having been already thoroughly discussed, he turned to the question of causation, and cited the views of Walb, that infection from without through a "foramen Ravinii," was the starting-point. Contesting the view as to any colotomatous opening in the flaccid membrane as wholly negatived by modern embryologists, he urged that the individual variations in the septa in the attic predisposed some cases to localized inflammation, and led to perforation at this point; and that these cases, neglected or recurrent, formed the group from which the usual obstinate cases were derived. He therefore advocated scrupulous search in all cases for disease in this locality, as promising to nip in the bud what might later become disease notoriously difficult to control. The paper was illustrated by drawings and photographs of specimens.

DISCUSSION.

Dr. S. O. Richey, Washington: I have frequently seen perforations elsewhere associated with perforations in Shrapnell's membrane. The presence of perforation in other parts of the drum membrane does not exclude its presence in Shrapnell's membrane.

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[2] See page 110 of the Journal.

Dr. J. O. Tansley, New York: I have never met with perforations of that part of the drum to which the doctor refers, associated with perforation in other parts of the drum. A singular thing is that we so rarely get the perforation whistle.

Dr. S. O. Richey, Washington: I do not think that perforations of Shrapnell's membrane are so common as has been stated. My experience with the absence of perforation whistle corresponds with that of others. I have had cases in which perforations in other parts of the drum healed, but the perforation in Shrapnell's membrane persisted. In treating these cases, besides using measures through the external auditory meatus, I have employed injections through the catheter, consisting of nitrate of silver one part, boric-acid ten parts, glycerine twenty parts, and water five hundred parts.

Dr. Gorham Bacon, New York: I have not observed this condition so frequently as Dr. Randall. It is often difficult to see these perforations. In treatment, I have generally used Blake's intra-tympanic syringe. By persistant syringing and the use of astringents, cicatrization is often produced. These cases are, however, very tedious.

Dr. J. A. Andrews, New York: In treating these cases in which there is purulent inflammation of the attic, with a large hole in Shrapnell's membrane, after injecting the cavity, I suck out the fluid by means of this instrument, consisting of a delicate metal tube with a curved extremity, to which is attached a rubber tube. I use simply a boric-acid solution. After sucking out the fluid, I dry it with cotton wrapped on a probe. I then blow in a fine cloud of boric-acid.

Dr. Herman Knapp, New York: There is a capital difference between perforations in the upper and those in the lower part of the drum membrane. Those in the lower part may close in a few days, while in the upper part they may continue for months or years. I think this is due to difference in anatomical structure. The lower portion is a specific tissue with little association with periosteum, while the upper part is a duplicature of periosteum and skin. When the latter part is affected the process extends to the periosteum leading to caries and necrosis of the bone.

THREE DEATHS FOLLOWING SUPPURATIVE OTITIS, WITH TWO AUTOPSIES,

by Dr. F. M. Wilson, Bridgeport, Conn.

Cases in which death follows a first attack are so rare that it was thought of value to report these cases. The first patient was forty years old, and for two weeks before coming under observation had had pain in both ears. February 27, 1888, the pain in the left ear became very intense. March 1st, he became partially unconscious, and remained so with occasional convulsive movement until March 6th, when he died. The mastoid was drilled half an inch, but no pus found. No autopsy was made.

The second case, a male aged twenty-three years, was attacked with sub-acute otitis. March 11th, symptoms of meningitis appeared, with high temperature, and he died March 27th. At the autopsy one-third of the base of the cerebrum was involved in the purulent process, which extended up under the frontal convolutions; there was about half an ounce of turbid fluid between the dura mater and inner meninges. There was pus in the labyrinth and in the tympanic cavity.

The third case was that of a boy aged ten years, who was attacked with suppurative otitis, September 5th, and died about ten days later. At the autopsy the meninges were found normal, but an abscess containing two drachms of fluid was found in the cerebellum.

Dr. Wilson also presented a

MASTOID DRILL,

provided with a guard which could be set at any desired point, regulating the distance to which the drill entered. The edges of the drill are sharp, so that the opening can be enlarged horizontally to any desired extent.

DISCUSSION.

Dr. Gorham Bacon, New York: It seems to me that in these cases where we do not find any collection of pus in the mastoid cells, we are justified in investigating the condition of the brain.

Dr. J. O. Tansley, New York: I have had several of these cases, and have without success sought for some means by which we could differentiate between those cases in which there was meningitis and those in which there was abscess. In one case, Dr. Seguin made a diagnosis of abscess, based upon conjugate deviation of the eyes. Subsequent autopsy showed the correctness of this diagnosis. In another case I suspected abscess. Dr. Weir opened the mastoid, but found no pus. He also exposed the cerebrum, and two days later the cerebellum, but found no pus. The patient died of suppurative meningitis.

Dr. S. D. Risley, Philadelphia: It seems to me, that in the differential diagnosis, attention to the temperature in connection with symptoms of pressure, is of great importance. In meningitis the temperature from the outset will be higher than in abscess, and the symptoms of pressure come on later.

Dr. J. A. Andrews, New York: In the past year I have made a number of autopsies in cases of brain abscess. Brain abscess may continue for a considerable time without any very positive symptoms, but where there is meningitis or phlebitis, especially phlebitis, there is usually a sudden rise of temperature with chills.

Dr. Oren D. Pomeroy, New York: In a case of brain abscess secondary to tympanic disease, the only marked symptom was a sudden rise of temperature, sometimes going up in half an hour from normal to 107°. Intelligence was unaffected until the last. The man gradually improved, but died suddenly. The autopsy showed a large abscess of the brain covering the petrous portion of the temporal bone.

Dr. Arthur Mathewson, Brooklyn: It is often difficult to make a diagnosis between abscess and meningitis, and in fact many are mixed cases. In meningitis the pains are more marked than in abscess. In meningitis, there is more likely to be optic neuritis; while in brain abscess, I have noted a peculiar dark appearance about the retinal veins.

Dr. Samuel Theobald, Baltimore: The treatment of the preliminary stage of these cases is important. It seems to me that a great deal might be done to prevent the occurrence of the conditions referred to. I have found benefit from local applications, especially atropia and cocaine and morphia and cocaine. If the bowels were constipated, I should use a calomel cathartic. If there should be symptoms of cerebral implication, I should administer mercury in some form to secure its constitutional effect.

Dr. E. Fridenberg, New York: During the past eighteen months, I have made autopsies on two patients dead from cerebral abscess. In one case suppuration had lasted a year, but there had been no symptoms until a week before death, except irritability of temper. There was some odor, but very slight discharge from the ear. A week before death the patient developed pain in the ear, slight tenderness over the mastoid followed by fever and symptoms of brain pressure. A small abscess was found in the tempero-sphenoidal lobe. The roof of the tympanum was carious and the meninges strongly adherent.

In the second case the patient had had suppuration for years. Two months before death headache occurred, which was relieved by treatment. It recurred, with fever. There was some pain on pressure over the mastoid process. The symptoms again disappeared under treatment. Three weeks later he returned with similar symptoms. The next morning vomiting occurred, and that evening he died. An abscess containing two ounces of pus was found in the tempero-sphenoidal lobe.

Dr. T. Y. Sutphen, Newark: These cases of brain trouble almost invariably follow the arrest of the flow of pus. We should look upon the cases as instances of local trouble, and should treat the middle ear by fomentations, and perhaps by poultices, to bring about free discharge of pus.

Dr. R. A. Reeve, Toronto, Can.: In one case of death following acute suppurative otitis, there was the most profuse purulent discharge that I have ever seen, and it continued from beginning to end

Dr. B. Alexander Randall, Philadelphia: A case of cerebral abscess occurred in my practice last year, in a boy, the subject of scrofulous disease of the elbow and other joints. I found both ears discharging with caries of the auditory meatus on both sides. On the left, all the mastoid tissues were involved. Under treatment the right side rapidly improved, and on the left side there was also improvement. The case was then transferred to my surgical colleague. Six weeks later the ears were still in good condition, but the patient was gradually failing from the constitutional trouble. An hour before death there was suddenly a discharge of at least two ounces of fetid pus from the ear. There was no meningitis, but a large abscess cavity was found in the spheno-temporal lobe, and one half-inch from the tympanum and connected with it by a sinus.

In cases where it is thought justifiable to perform exploratory trephining of the brain, an admirable and safe point is one and one-fourth inches behind, and an equal distance above, the upper posterior margin of the osseous meatus. This avoids the major blood-vessels, and it would be possible to reach the cerebellum through it.

COMPLETE CLOSURE OF BOTH EXTERNAL AUDITORY CANALS BY BONE, IN A PATIENT HAVING GOOD HEARING POWER, WITH A PREVIOUS HISTORY OF CHRONIC SUPPURATIVE OTITIS MEDIA,

by Dr. E. E. Holt, Portland, Me.

T. M., age eighteen years, was seen in April, 1889, for an affection of the eye. It was incidentally learned that he had had abscesses in both ears when seven years old, and the ears discharged more or less for six years, but stopped entirely five years since. Examination showed the canals of both ears of about half the usual length, and occupied by a continuation of the skin of the meatus, with no appearance of the membrana tympani. There was complete closure of the canal by what appeared to be bone by all the tests employed.

The hearing power for the voice was good. The stop-watch was heard only when close to the ear; the tuning-fork was heard about ninety seconds both by bone and ærial conduction. König's rod of thirty thousand vibrations per second was heard by both ears. He heard less distinctly when both ears were closed by pressure on each tragus. Shutting the mouth and closing the nostrils did not seem to effect the hearing power much if at all. Cases with closure of one meatus with the skin of the canal continuous over the obstruction have been observed, but the hearing power is very defective. Cases in which there is a small opening between the exostosis and the walls of the meatus are not uncommon.

DISCUSSION.

Dr. Samuel Theobald, Baltimore: Four or five years ago I reported a case very similar to the one described. The newly formed membrane was, however, nearer the orifice. The hearing power was good.

Dr. B. Alexander Randall, Philadelphia: I have had one case in which one ear was obstructed by a bony mass. There was no evidence of exostosis. The hearing was, however, defective.

OTITIS MEDIA CATARRHALIS ACUTA, ACCOMPANIED WITH FACIAL PARALYSIS AND IMPAIRMENT OF ACCOMMODATION OF THE EYE OF THE AFFECTED SIDE,

by Dr. E. E. Holt, Portland, Me.

Judging from statistics, one would be led to believe that paralysis of the facial nerve in connection with acute catarrhal inflammation of the middle ear was not a common complication. In many cases the pain having been slight, and having passed off and the paralysis having come on, the patient's attention is directed to this and he seeks advice for the latter affection, and the cause of the paralysis is recorded, "a cold," or "rheumatic."

F. L., age twenty-four, seen May 19, 1889. Seven days before took cold, and right ear began to pain that night. This pain continued three days, when it subsided; and on the fourth day he was unable to use his lips properly. Examination showed all the characteristics of facial paralysis. Testing the eyes, there was found paralysis of accommodation of the right eye. This the author knew to be a fact, because he had previously had the patient under his care and recorded the test of his eyes, and also by the fact, that, since the improvement of the paralysis of the face, the paralysis of accommodation has disappeared.

THE PHYSIOLOGY OF THE INTRO-TYMPANIC MUSCLES.

by Dr. S. O. Richey, Washington, D. C.

The paper was the elaboration of a suggestion made by the writer in the discussion of a paper read by him at the Congress of American Physicians and Surgeons, in 1888. If the membrana tympani in purpose protects the aural tissues lying interior to it, these muscles, being appendages to the membrane, are designed to assist the purposes of the membrane, which they do in part, by protecting it from injury by the impact upon it of sound impulses violent enough to rupture an inflexible membrane firmly attached and having such a plane as to expose it to the fullest force of the concussion. The membrana tympani fulfils one of these conditions; it is firmly attached. Toynbee and Henle were quoted as having many years ago expressed a somewhat similar view as to the action of the tympanic muscles, and it was stated that no reference to this subject by later writers was found. The shape and other peculiarities of the auditory meatus; the elasticity and capacity for motion of the drum membrane, and its oblique position with relation to the meatus; the co-ordination between the palatal and the intra-tympanic muscles, converting the tympanic cavity into an air-cushion, all indicate a similar purpose on the part of nature to guard the membrana tympani immediately, and the labyrinth mediately from violence.

EVENING SESSION.

Dr. Gorham Bacon, of New York, exhibited photographs of the ear, and read a paper on

CYSTS OF THE AURICLE.

Of late a number of cases of so-called cysts of the auricle have been reported. Not one of them, however, seems to represent a genuine cystic tumor such as is found in other parts of the body. They all were situated on the anterior surface of the pinna, and were of rapid development. They either were the results of traumatism and contained a sanguinolent fluid, or they developed without known cause. Mild inflammatory symptoms were present in all. The development within two or three weeks, in almost all cases, distinguishes them clearly from the slow and absolutely non-inflammatory development of true cystic tumors. All got well either by spontaneous absorption or by incision. The speaker had seen at least half a dozen of these cyst-like sub-perichondrial swellings of the auricle. He considered them to be mild cases of perichondritis, for those mild cases of circumscribed perichondritis may, instead of getting well, remain in this condition for a time, and then develop into the full picture of a diffuse perichondritis. He reported such a case.

Dr. Knapp also described a case of genuine cyst of the auricle, occurring in a girl nineteen years of age. The growth was double the size of a large filbert, distinctly cystic, and had developed without known cause and without any inflammatory symptoms. The cyst was removed by operation, without rupture, and was exhibited. These tumors are not frequent in the auricle, but they cannot be so rare as we might infer from otological literature.

EPITHELIOMA OF THE MIDDLE EAR.

by Dr. W. H. Carmalt, New Haven.

The patient, a robust man aged forty-seven years, was first seen in June, 1888, on account of suppurating ear (left), which had existed forty-two years, and had followed measles. The ear had given him no inconvenience, with the exception of the discharge, until a few weeks before he came under observation. He then began to have pain in and around the ear and the discharge was exceedingly offensive. The canal was blocked by a ragged but firm excrescence, very sensitive to touch. There was slight tenderness but no swelling or pitting over the mastoid. The pain radiated through the side of the head and interfered with sleeping. At the second visit, the left side of the face was completely paralyzed. The case was regarded as one of epithelioma of the skin of the canal. The patient was seen by another gentleman who thought the trouble might be a carious antrum. An attempt was therefore made to open the antrum, but the bone around it was so sclerosed that the cavity was practically obliterated. There was nothing of the nature of an abscess in the mastoid. The incision was then prolonged through the soft parts and into the external auditory canal. What polypoids could be reached were removed, and a drainage tube inserted. The mass removed proved to be carcinomatous. In the course of a few weeks the ear again became blocked up, and the skin became involved. With the object of alleviating some of the distressing accompaniments of the condition, another attempt was made to clear it out. By chiselling away the bone posteriorly, free access to the ear cavity was obtained, and the bone scraped apparently clean. No auditory apparatus was seen, simply a mass of carcinomatous tissue. The cavity was washed with a solution of resorcin, and for a time the wound did well, but subsequently the disease reappeared. The discharges became again offensive and the patient exhausted, and he finally bled to death without the condition being detected, probably from erosion of the lateral sinus. No autopsy was permitted.

Dr. B. Alex. Randall exhibited a series of

PHOTOGRAPHS,

and made some remarks on the use of photographs and of the lantern in treating otology.

Dr. Randall also reported five cases of

SUPERNUMERARY AURICLE,

four of the right ear, one of the left ear.

Dr. T. Y. Sutphen, of Newark, exhibited a mummified pea, which he had removed from the auditory canal, where it had lain for nineteen years. The patient had been deaf in that ear since childhood. He heard the watch at one inch; after removal of the foreign body, the hearing was almost normal.

Dr. B. Alexander Randall made some remarks upon the

ANATOMY OF THE DRUM MEMBRANE.

A paper entitled

TWO NOTEWORTHY CASES OF TRAUMATIC RUPTURE OF THE MEMBRANA TYMPANI

was presented by Dr. Huntington Richards, New York.

Case I, seen May 7th, a woman aged thirty, two days before had received a box on the left ear. The symptoms were vertigo, tinnitus and marked deafness. There had been no bleeding or other discharge. There were some evidence of pre-existing tympanic catarrh in that it was somewhat depressed and moderately atrophic; save for pronounced congestion of the manubrial vessels, and a narrow red line along the border of the opening, it was not congested. The exposed inner wall of the tympanum was likewise pallid, secreting only sufficient mucus to give its surface a glistening appearance. The patient was directed to let the ear alone, and a small loose cotton obturator was placed in the auditory meatus.

CASE II, a woman aged twenty-three, came under observation, May 22d. There was no discharge or bleeding. There was no congestion of the membrane or of the tympanic wall. The patient had complained of aural symptoms for several weeks. On May 21st, she consulted a physician, who introduced a cotton-covered probe. This made her so dizzy that she had to lie down immediately, and within two hours she discovered that she was very deaf. The treatment was negative, and up to May 31st, no change had occurred. The edges of the opening were then stimulated with nitrate of silver solution and a small quantity of boric acid was insufflated. Examination made a few days later showed that the opening had healed, with the exception of a small part. The patient then passed from observation.

EXECUTIVE SESSION.

Officers for ensuing year: *President*, Dr. Oren D. Pomeroy, New York; *Vice-President*, Dr. Gorham Bacon, New York; *Secretary and Treasurer*, Dr. J. J. B. Vermyne, New Bedford, Mass.; *Member of Executive Committee of Congress of American Physicians and Surgeons*, Dr. W. H. Carmalt, New Haven; *Alternate*, Dr. F. B. Loring, Washington, D. C.; *Committee on Membership*, Drs. Arthur Mathewson, Samuel Theobald, and S. D. Risley; *Committee on Publication*, Drs. J. J. B. Vermyne, C. J. Blake and J. Orne Green.

A committee consisting of Drs. S. C. Ayres and Wm. W. Seely, was appointed to prepare a minute on the death of Honorary Member, Dr. E. Williams, of Cincinnati.

The following were elected to membership: Dr. Harlan P. Allen, Columbus, Ohio; Dr. Ralph M. Seiss, Philadelphia, Pa.; Dr. David Harrower, Jr., Worcester, Mass.; Dr. Robert Barclay, St. Louis, Mo.; Dr. Neil P. Hepburn, New York, N. Y.

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Recent Literature.

Synopsis of Human Anatomy, being a Complete Compend of Anatomy, including the Anatomy of the Viscera, and Numerous Tables. BY JAMES K. YOUNG, M.D., Instructor in Orthopædic Surgery and Assistant Demonstrator of Surgery in the University of Pennsylvania. Philadelphia and London: F. A. Davis, Publisher, 1889. Physicians' and Surgeons' Ready Reference Series.

In saying that this book is good of its kind, we mean to pay it a very relative and modified compliment; for the kind is detestable, and this has merely the merit of being better than most of its class. Intrinsically considered it is very poor. Judging from the preface, the author apparently thinks it a sufficient text-book. We cannot congratulate him on his "well-selected wood-cuts," nor agree with him that "sufficient descriptive matter has been added to render it valuable to the busy practitioner." Some of the tables and diagrams are useful, but neither the text nor the illustrations are satisfactory. We see no reason to suppose that this will take the place of any good work on anatomy. A man who cannot afford to buy one of the standard text-books had better not study medicine.

T. D.

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THE ALLEGED SPONTANEOUS COMBUSTION OF THE HUMAN BODY.

WHEN "Bleak House" appeared, in 1853, novel-readers were treated to a new sensation in the way of a death-scene, when Krook was taken off the stage by spontaneous combustion, "of all the deaths that can be died." The public shuddered and medical readers smiled. The subject was then to most physicians, as it is now, well inside the border of medical mythology. Medico-legal authorities naturally reacted from the often manifestly unreliable cases which were at first reported, and with some leading medical journals, discredited the whole thing. The *Lancet*, in 1875, spoke of "the few apocryphal cases of it," and the *Medical Times and Gazette*, in 1863, editorially classed all the reported cases somewhat contemptuously under "popular medical errors." The writer put into the same category of humbugs with it such subjects as prenatal maternal impressions on the fœtus, "vegetarianism and teetotalism."

Within the past year or two several cases have been put on record, which, with the list previously accumulated, serve to establish pretty clearly the fact of an occasional abnormally increased combustibility of the human body, which, it should be observed, does not necessarily imply ignitability, or true spontaneous combustion.

For instance, Dr. Booth's case, which is reported with a photograph of the nearly consumed remains,[1] is of a pensioner, aged sixty-five, of very intemperate habits, who climbed into a hay-loft while drunk, at nine P.M. Neighbors saw by a skylight, a light struck, which after a while was put out. At eight the next morning, the body, with all its soft parts consumed, was seen lying over a hole in the floor which had nearly burned through, but had one or two joists that kept the body from falling through. The chance of the application of fire to the man's clothes is here distinctly stated; and the combustion, remarkable as it was, is not shown to have been spontaneous.

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[1] British Medical Journal, vol. i, 1888, p. 841.

Again, Middlekamp[2] reported a similar case of nearly complete combustion, where the victim, a man of sixty-six and a drunkard of twenty years' standing, fired a gun at his own breast, with a ramrod. Here the heat was so intense as to melt the ramrod and a metal buckle. The body was consumed entirely, except the lower part of the legs, the head and the arms.

In the *Therapeutic Gazette* of the current year, two more such instances are reported. Of these, Dr. Clendenin's[3] was an old Irish woman, addicted to the excessive use of whiskey of which she had drunk a quart the day she died. She had always been the last of of the household to go to bed, and so always extinguished the tallow candle (their sole means of illumination). There was also a fire in the kitchen stove. The inner walls of the house were covered with greasy soot, and the two old men who were the only other occupants were both asphyxiated. A hole was found burned through the kitchen floor, about two and one-half by three feet square. Upon examining the opening in the floor, a mass of cinders was discovered on the ground beneath. Upon removing them the skull, the cervical, and half the dorsal vertebræ were found reduced very nearly to a cinder, also about six inches of the right femur, together with part of the ilium in about the same state as the vertebræ. The feet were found in the shoes; the left foot was reduced to a cinder, the shoe being partially calcined; the other foot and shoe were reduced to a complete cinder. On removing, the entire remains of a woman, who a few hours previous had weighed one hundred and sixty pounds, were placed in a box that would hold less than one bushel. The entire remains weighed twelve pounds. The pine joint against which the remaining cinders lay were slightly charred, but not burning when found.

To burn the human body, under ordinary circumstances, is not an easy thing. The great heat secured in crematories, and the length of time even then requisite to incinerate the body, illustrate this fact. It has been shown that the body is three-quarters water, and a great deal of combustible material is a necessary adjunct to the successful reduction of so non-inflammable a substance. What, then, is it that occasionally imparts to it so abnormal a susceptibility to flame? Here theories are at fault. We may safely say that it is *not*, as has been claimed by some, alcohol deposited in the tissues. For Liebig found that flesh saturated in that liquid would burn only until the alcohol was consumed. The hydrogen theory is also fanciful; and the best explanation, namely, an abundant deposit of fat in the cells of the body in such cases, fails to account for the fact that not all fat people are subject to this fate, but that it is only the fat, elderly *alcoholic* subjects that have been shown to manifest abnormal combustibility. Possibly the alcohol in such cases has the double effect of laying up fat and stupefying the subject so that he is unable to save himself when he does take fire.

One of the best recent monographs on this subject is that of Dr. F. Ogsten,[4] which details a case of his own — again, be it observed, one where the spontaneous element was wanting, or was not proved. A woman, fat, intemperate, was in front of smouldering ashes in a grate, and was almost wholly consumed, with little burning of the surrounding objects, and with nothing specially inflammable about her. Ogsten seems to have had some doubt on this subject, seven years later, in referring to the same case,[5] when he says the question is still *sub judice*; but he admits that one cannot explain the facts in this case without assuming that the body was in a condition unusually favorable for and predisposed to the feeding at its own fire.

In the monograph referred to, Ogsten collected the opinions of thirty-five authors who treated of this subject, and he thus classified them: Five were quite sceptical on the whole subject; three believed in increased combustibility only, and twenty-seven believed in spontaneous ignitability as well.

The necessarily isolated condition of all persons who perish in this way, and the commonness of fires and lights or of the means of producing them in all places, would make it extremely difficult to establish the fact of spontaneous ignitability, even did it exist. Certainly such proof has not yet been given us. The other point, that of increased combustibility, seems to have received considerable confirmation.

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STENOGRAPHY AS AN ADJUNCT TO A MEDICAL EDUCATION.

Some months ago, we directed attention editorially to the desirability of stenography as an adjunct to the study of medicine, and some of its advantages to the student and the practitioner were then mentioned. The fact was pointed out that the system of teaching in all the more advanced medical schools is now so changed that the "lectures," formerly almost the only medium of instruction, are to a great extent superseded by other and more valuable methods, in the way of accurate and visible charts, of systems of clinical and pathological investigation, in which diagrammatic and concise schematic representations of the course and direction of the disease processes replace the less satisfactory teachings of earlier days. This change in method allows the possibility of a clear and defined history on the course and tendency of the disease process, and of forming a clinical picture which shall afford to the eye a distinct representation of the case in its entirety. A clinical examination is now often augmented by means of photography. What photography is to the ordinary drawings of former days, to a considerable degree shorthand is to the ordinary means of taking notes either in the class or at the bedside.

The use of some means of correctly and quickly taking notes of cases, or other interesting records in relation to medical subjects is each year more and more urgent, and is making itself felt in every great institution of medical teaching. It is with especial pleasure that we find that some of our English brethren are of the same opinion as ourselves in this respect.

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[2] St. Louis Medical and Surgical Journal, October, 1885.

[3] Therapeutic Gazette, June 15, 1889.

[4] British Foreign Medico-Chirurgical Review, vol. xlv. p. 179.

[5] Medical Times and Gazette, vol. i, 1877, p. 27.

In the *British Medical Journal*, June 15, 1889, page 1372, we find some remarks based upon the report of a committee appointed to investigate and encourage the use of shorthand in relation to the study of medicine. This committee was composed of Sir Dyce Duckworth, Mr. Howard Marsh, Dr. Gowers and Dr. Coupland, men of the first eminence in the profession in England; and their report is made the object of recommendation in the remarks above alluded to. This committee propose to offer prizes to students in medicine who shall exhibit the greatest proficiency in stenographic reports of medical subjects. Such a recommendation coming from so competent a committee should at once attract renewed attention to this topic, and lead students of medicine, or those intending to become such, to seriously entertain the question of acquiring the art of rapid and correct transcription of ideas in permanent form for future reference. The ordinary notes of lectures or clinics are but the most crude and naked outline of the subjects treated, all detail and much of importance in the chief features of the case being of necessity lost from sheer inability to take down more. With a moderate amount of study and a limited expense of time, the student might be enabled to make ready and complete descriptions of all interesting subjects.

The use of stenography is by no means confined to one profession or calling, but like photography, is applicable to all the objects of observation or study coming under the notice of the student. It is especially desirable in the notes of cases in daily medical practice, by which the hard-working physician is able to readily and easily make a complete record of symptoms and signs not otherwise often recorded, an item not to be lightly estimated. In the Massachusetts Medical Society for instance, there are, we believe, but few men who are able to make accurate records of discussions or proceedings, in verbatim form. Medical stenography is unlike any other branch of this art, inasmuch as many of the terms employed are of technical character and are not comprised in any vocabulary or system of common shorthand. So that a report of a meeting or discussion made by an ordinary stenographer is apt to be very unsatisfactory. There is no difficulty other than a merely idiomatic one in the use of stenography in any special direction, and medical shorthand is fully legible and easily written by a medical man.

It is to be hoped that more attention may be directed by the younger members of the profession and by medical students to this neglected art. It is true that a motion made to the General Medical Council by Sir Dyce Duckworth, in favor of encouraging shorthand was rejected, and if the use of shorthand were necessarily to take the place of the use of brains, the objections urged by its opponents would be of much weight.

THE HEREDITY OF TUBERCULOSIS.

Hutinel, of the *Hôpital des Enfants Malades*, has published a communication on the "Heredity of Tuberculosis,"[1] of which the conclusions are as follows:

As for the direct transmission of the germ from the parents, we are warranted in affirming that communication by the father is not proved, and is very problematical; transmission by the mother may take place, but it is extremely rare.

Heredity, nevertheless, exists; for if the offspring of phthisical parents are not born tuberculous, they are *tuberculizable;* they may not, it is true, have brought with them the germ from their birth, but they have inherited a culture soil (*terrain*) favorable to its development.

In accordance with these conclusions, which are in harmony with a multitude of clinical observations, Langerhaus, who has long practiced in Madeira, has noted that among the individuals not phthisical that have come to that island for a certain number of years, only those born of tuberculous parents become infected by the numerous phthisical patients resorting to that island every year. Of every ten individuals with phthisical parentage, one died of tuberculosis, while the proportion of those becoming consumptive with no hereditary predisposition has been as one to sixty-eight.

MEDICAL NOTES.

— Apache county, Arizona, is said to be without a practising physician, though possessing a population of several thousands.

— Dr. Zweifle, of Leipzig, has recently successfully removed a cancerous uterus in the sixth month of pregnancy.

— The library of the late Dr. Jewell, of Chicago, numbering about 3,000 volumes, has been secured as the nucleus of a medical library for general use.

— The Director of the Assistance Publique has distributed among the *infirmiers* and *infirmières* of the Paris hospitals 2,000 tickets for the Paris Exhibition.

— A new hospital for women in West Philadelphia, under the care of women physicians, the second of its kind in the city, is to be opened at the northeast corner of Forty-first and Ogden Streets.

— Deutsch reports a case in which rupture of the uterus was successfully treated by laparotomy. Four years after, the patient was again pregnant, and a living child was delivered by podalic version. The placenta was adherent to the scar resulting from the previous rupture.

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[1] Semaine Médicale, 1889, p. 229.

— Dr. Howard H. Kelly, of Philadelphia, associate professor of obstetrics in the University of Pennsylvania, has been appointed gynecologist to the Johns Hopkins Hospital.

— A case is given by the *Medical Press* of a man whose history is remarkable for the number of times he has obtained admission to lunatic hospitals by feigning lunacy. In the course of seven years he obtained admission to no less than twelve asylums.

— An organization has been recently established to be known as the "Military Order of Surgeons of New Jersey," the objects of which briefly stated are to promote an interest in the National Guard and to cultivate and foster the art of military surgery and sanitation.

— At the annual meeting of the directors of the St. Albans (Vt.) Hospital, held on Tuesday, July 23d, these officers were elected for the ensuing year: *President*, Hon. J. Gregory Smith; *Vice-president*, James M. Foss; *Secretary*, Charles D. Watson; *Superintendent and Treasurer*, Dr. T. R. Waugh.

— The Government of Chili has created a "Superior Council of Public Hygiene," consisting of seven members, whose duty it shall be to advise the Government in everything that relates to the public health throughout the Republic. The Council has a laboratory for chemical analysis under its control.

— The late Dr. Thayer was one of the best physicians in the country, but his skill was of no avail in the case of his wife, who kept her bed for more than two years. One day when she was the only grown person about the house, and her little boy came running in with a bad cut on his finger, bleeding profusely, with true motherly forgetfulness of self she sprang up, found bandages and dressed the wound; then sitting down to rest, she looked around. Everything seemed so pleasant, and she felt so comfortable, that she decided not to take her bed again, and she did not. She lived several years in the enjoyment of comfortable health. — *Fairfield, Me., Journal.*

— Through the efforts of Dr. Filip Trybom, the Swedish Oyster Culture Society is attempting to acclimatize the American oyster, imported from Connecticut, in several places along the coast of the province of Bohus. The young oysters seem to thrive well.

— The *Pittsburgh Medical Review* gives the following list of casualities on July 4th, in Pittsburgh: five persons drowned by the overturning of a boat; two cases of fractured skull, probably fatal; two serious gun-shot wounds; three broken legs; nine individuals severely burned by powder explosions, of whom three will lose their sight; and ten accidental fires.

— M. Brown-Séquard announces that the injection of ovarian tissue-juice into debilitated women has been tried and without bad effects. He also says that the stimulating effect of the hypodermic injections made upon himself lasted about four weeks, since which time he has returned to the previous state of weakness.

— In the cases of the State of New Hampshire *vs.* Drs. C. D. Hinman and D. D. Pennoyer of Portsmouth, the former indicted for practising dentistry and the latter medicine, without a license, the full bench of the Supreme Court has just rendered a decision quashing the indictments and declaring that the law requiring a license for the practice of medicine, surgery and dentistry is unconstitutional.

Miscellany.

MUNICH A HEALTHY CITY.

Drs. von Pettenkofer and von Ziemssen maintain, in a recent communication to the *Münchner Neueste Nachrichten*, that, owing to the purification of the soil by sewerage and other sanitary improvements, not only has typhoid fever lost its vitality in Munich, but certainly the conditions of the epidemical development of other diseases, as cholera, are also destroyed. Still one is not able yet to appreciate to their full extent the effects of the sanitation of the soil upon all causes of disease outside the human body. After some more decennaries shall have elapsed, we shall perhaps be able to estimate the entire gain to the general health. But even now, the reputation of the town is the best, and, in consequence of it, the influx of students, of strangers and foreigners settling there, the frequency of exhibitions, etc., is steadily increasing. It may be said, without exaggeration, that *Munich can confidently be called one of the healthiest cities in Germany.*

A REMARKABLE EPIDEMIC OF PNEUMONIA.

In the *Maritime Medical News* for May, quoted by the *Medical Record*, there is an account of an epidemic of pneumonia in Prince Edward Island. During the months of February and March no less than five hundred and forty-six cases occurred in the practice of twenty-six practitioners, and at the date of the report the disease was still very prevalent. As there are over fifty practitioners in the island, it is computed that the total number of cases is fully upward of one thousand. As the population of the island does not exceed one hundred and fifty thousand, the number attacked is relatively very great. It appears that in the majority of cases the pneumonia was attended by acute bronchial catarrh. The catarrhal complications, which in some cases also involved the larynx and middle ear, were more frequent in children and the aged. In the five hundred and forty-six cases reported there were only forty deaths, a decidedly low mortality.

Correspondence.

THE USE OF HOT AIR IN PHTHISIS.

Boston, 91 Newbury St., July 24, 1889.

Mr. Editor, — In the *Boston Medical and Surgical Journal* for July 11th, Dr. Sears, in writing on the use of hot air in phthisis, states that owing to the high temperature and consequent rarefaction of the inspired air, while the outside atmospheric pressure remains the same, the danger of hæmorrhage is increased. This implies that the pressure in the lungs is diminished. How is this brought about? To my mind not at all. The inspired air is rarefied, but, since it is in direct connection with the atmosphere, must remain at the normal pressure. Were the air penned up, the pressure would be increased. The only way a diminution in pressure in the lungs can result, is from the friction in drawing the air through the heater, which in turn is counteracted by the tendency of the hot air to rise, as in a chimney.

The inspiration of hot air, however, does have a mechanical effect, since the air cools off in a body and becomes denser, a greater volume of air must be inspired than expired. Therefore, the normal respiration must be altered in such a way as to increase either the vigor or duration of inspiration as compared to expiration. This is quite a factor, the coefficient of expansion of air being given at .003670, the inspired air at 200° C., and the expired at 45° C., the ratio of inspired to expired volume of air would be 1.56885 to 1. The cooling, of course, produces no effect upon the weight. Of course the changes in the gases due to respiration will alter these figures, but this appears to be about the same as in ordinary respiration.

Yours very truly,

John A. Jeffries, M.D.

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[From our Special Correspondent.]

PARIS LETTER.

Biographical Sketches of Eminent French Clinicians. Professor Germain See.

Paris, July 19, 1889.

Mr. Editor,— I propose in this and subsequent letters to give a brief sketch of some of the most marked men of the profession in Paris.

Professor Germain Sée is one of the most renowned in French science. He is one of the leading therapeutists in this country; physician to the Hôtel Dieu and member of the Academy of Medicine. His clinical lectures, which are most remarkable for their lucidity, are always well attended, not only by the students of the faculty, but by foreign medical men from all parts of the world. Although a septuagenarian, he keeps himself abreast of all the modern inventions and discoveries of the day. His clinical teaching is based principally on chemical therapeutics and microbiology, without, however, neglecting the collateral sciences, such as physiology and morbid anatomy and histology. He is not very popular among his colleagues, and the elder ones have always borne him some animosity, as he attained a professorship without having passed through the grade of *agrégé*, which is obtained only by public competition. This was effected through the direct intervention of Napoleon III, and although M. Sée was not an avowed Imperialist, yet the emperor, who was rather shrewd in finding out the best men, had him attached to his person as consulting physician. It was to reward him for his services that the emperor created M. Sée, Professor of the Faculty of Medicine of Paris. This act, being contrary to the universitarian customs of the country, was the cause of his having more than one enemy in the faculty. He has since, however, proved himself qualified in every way and worthy of his position. It may be remembered that, several years before his nomination M. Germain Sée had organized, at the Hopital Beaujon, a free course of lectures, treating of subjects little familiar to the students and practitioners who followed him in his wards. The young professor, already distinguished for his erudition, possessing a profound knowledge of several foreign languages, an expert in the technic of microscopy (a rather rare acquirement at that period), delivered lectures which were always well attended and revealed in him the highest qualtities, which eventually justified the choice made by the emperor. Moreover, since he has occupied a magistral chair at the faculty, he has succeeded in conquering the sympathies of most, if not all, his colleagues. He is eloquent, which has excited the enthusiasm of the students, beside which, his teaching is original, taking in physiology to the aid of his clinical and therapeutic lectures. In a word installing science where empiricism alone reigned.

It is more especially in the art of cure that he effected great progress. As soon as a new medicament is utilized in foreign parts, particularly in Germany, M. Germain Sée who is well versed in German, seizes the discovery, makes experiments in his laboratories, attempts practical applications, and then makes known the result of his researches. The greater part of the medicaments which are now in daily use, have been vulgarized by him in France, and all that he has recommended have been accepted by the profession. His works on digitalis, the salicylate of soda, and on antipyrine, will long be consulted. More recently the learned professor published, consecutively to the discoveries of Professor Koch on tuberculosis, very interesting lectures, in which the questions of contagion, bacillosis and of treatment are elucidated with great talent. Notwithstanding his advanced age, he devotes the time allowed him after his numerous consultations, to scientific work. It is to be hoped that he will for some time be able to continue his interesting lectures at the Hôtel Dieu, and when the time comes for him to retire, the regrets, even of those who were so much opposed to him, will follow him.

Whilst writing about Professor Germain Sée, I may here refer to his most recent work on the diseases of the heart, etiologically and clinically considered, which forms part of a work written by him in conjunction with Dr. Labadie-Lagrave, under the general title of "Clinical Medicine." It comprises only the clinical study of the diseases of the heart, the second volume will take up the treatment. Like all the other grand divisions of pathology, clinical exploration and therapeutics are enriched by a certain number of important acquisitions. His tendency to microbiology is manifest in this as in all his most recent works. For instance, after having insisted on the fact that the origin of the diseases of the heart has one source, that is to say, that it proceeds from endocarditis, M. Sée has endeavored to demonstrate that endocarditis, whatever be its form, is of parasitic origin. The notion of inflammatory endocarditis becomes more and more uncertain in the face of that of the bacteric form, the demonstration of which has already been made. In a clinical point of view, the author adds, there is only one species of endocarditis which is due to the swarming of micrococci. The valvular lesions are the consequence of the morbid work effected in the tissues by the parasites, but there is not any inflammation in the proper sense of the word, as the inflammatory process is wanting. It is in reality a degenerative process. Hence M. Sée proposes to designate the microbic maladies of the endocardium under the name of "endocardies." It is clear that this affection has not for cause only one single microbe, but that every infectious malady may by its interior parasitic products become endocardiac. There is no exception to the rule that endocarditis in the neighborhood of the aortic valves depends on the propagation of the divers degenerations of the arterial system. Limited space will not allow me to enter more fully into the various types of the diseases of the heart as described by the author, but I must refer your readers to the work itself, which will amply repay perusal. I may, however, remark that one may observe that, throughout the work under notice, physiology contributes a good deal to the interpretation of the morbid phenomena and their connection one with another. There is no group of maladies where the advantages of this method are more evident than in the diseases of the heart. Moreover, a large part of the work is devoted to the etiology and to the pathogeny of the lesions of this organ.

To give your readers an idea of the eclectic spirit of Professor Sée, I shall lay before them the summary of a series of lectures which he delivered a short time ago at the Hôtel Dieu, on which occasion he treated of iron and the various forms of anæmia. He pointed out how the question of the action of iron in the organism is still under controversy and this is why no pharmaceutical rule for the divers sorts of medical preparations can be scientifically formulated. There is no absolute rule except for the therapeutic indications, which formally exclude from ferruginous medication all the forms of pseudo-anæmia; namely, (1) alimentary and atmospheric inanitions; (2) all kinds of exhaustion (muscular, nervous, secretory); (3) all intoxications, and all virulent or specific anæmias, such as syphilitic, tuberculous, paludal, and rheumatic pseudo-anæmia. It is only in true anæmia that iron is justifiable. There are three types, he said, of true anæmia; namely, anæmia of the hæmorrhagic origin, chlorosis, and anæmia termed spontaneous. He then referred to the physiology of iron in the organism, and to the formation of hæmoglobin, the mysteries of which are still enshrouded in obscurity. He does not approve of injections of iron, or of those of manganese, as they are eminently toxic, and produce a diminution of the sanguineous pressure, intestinal troubles, paralytic disorders of the central nervous system, and alteration of the kidneys. Nothing of the kind occurs by the ingestion of iron in the stomach, which absorbs nothing directly. The gastric juice transforms the iron into the chlorides, which, on their arrival in the intestine (which is alkaline), become soluble oxide in the presence of organic substances, then soluble carbonates of iron in carbonic acid and in organic matters. Finally, the compounds of iron, submitted to the action of sulphurets and other reducing agents, form sulphurets of iron which are eliminated by the fecal matters. The combinations of the oxide of iron with the organic acids or with the albuminates behave in the same way. The albuminates of iron in the presence of the hydrochloric acid of the stomach, are immediately decomposed in forming the chlorides of iron. It may, therefore, be concluded that the salts of mineral iron, instead of being directly annexed to the organism, are intended to protect in the intestine the combinations of organic iron, of meat for instance, against all decomposition. That which is certain, is, that iron does not appear in the urine under the form of an organic salt, but as an organic compound, and particularly as coloring matter, as shown by Harley of London.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 20, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	964	549	37.28	9.78	30.59	.51	2.47
Philadelphia	1,040,245	536	291	36.34	8.74	27.83	3.91	.92
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	240	147	35.70	7.56	33.18	.84	—
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	251	133	31.59	9.75	24.57	5.67	3.51
New Orleans	250,000	121	45	16.60	12.45	10.79	—	.83
Cincinnati	225,000	138	—	18.98	10.95	8.03	.73	3.65
Washington	225,000	133	61	37.00	12.58	24.82	5.92	2.96
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	47	23	21.25	6.39	10.65	2.13	—
Portland	40,000	19	7	31.56	10.52	31.56	—	—
Worcester	78,292	46	23	41.23	4.34	30.38	—	6.51
Lowell	71,518	49	30	38.76	10.20	36.72	2.04	—
Cambridge	65,552	28	13	42.84	11.71	17.85	3.57	10.71
Fall River	62,647	44	34	54.48	2.27	54.48	—	—
Lynn	53,334	13	—	7.69	23.07	7.69	—	—
Springfield	40,731	25	14	60.00	28.00	60.00	—	—
Lawrence	40,619	18	11	61.11	—	44.44	—	16.66
New Bedford	37,253	22	12	54.60	9.10	54.60	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	16	4	18.75	6.25	6.25	6.25	6.25
Brockton	28,813	6	5	50.00	—	50.00	—	—
Chelsea	28,167	14	11	42.84	—	42.84	—	—
Haverhill	26,058	10	4	30.00	—	30.00	—	—
Taunton	25,170	14	6	35.70	7.14	21.42	7.14	—
Gloucester	24,263	6	2	50.00	16.66	33.33	—	—
Newton	21,553	7	4	57.12	14.28	28.56	14.28	14.28
Malden	19,774	9	6	66.66	11.11	66.66	—	—
Fitchburg	17,534	7	2	—	14.28	—	—	—
Waltham	17,332	3	0	33.33	—	33.33	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	9	4	22.22	11.11	22.22	—	—
Quincy	13,728	9	6	55.55	11.11	33.33	—	11.11

Deaths reported 2,804; under five years of age 1447: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 952, consumption 259, acute lung diseases 115, diarrhœal diseases 758, diphtheria and croup 59, typhoid fever 42, whooping-cough 36, measles 17, cerebro-spinal meningitis 14, scarlet fever 13, malarial fever 12, erysipelas 1. From whooping-cough: New York 15, Boston 6, Philadelphia 5, Washington, 3, Baltimore, Worcester and Cambridge 2 each. Cincinnati 1. From measles: Cincinnati 7, Philadelphia 5, New York 4, Baltimore 2. From cerebro-spinal meningitis: New York, Cincinnati, Washington, Charleston, Taunton, Gloucester and Quincy 1 each. From scarlet fever: New York 7, Philadelphia 4, Baltimore 2. From malarial fever: New Orleans 6, Charleston 3, Philadelphia 2.

In the 28 greater towns of England and Wales with an estimated population of 9,555,406, for the week ending July 13th, the death-rate was 21.5. Deaths reported 3,937: infants under one year 1477, diarrhœa 640, measles 104, whooping-cough 80, scarlet fever 43, fever 39, diphtheria 38.

The death-rates ranged from 12.9 in Huddersfield to 31.8 in Newcastle-on-Tyne; Birkenhead 22.4; Birmingham 22.6; Bradford 22.9; Bristol 16.4; Hull 22.3; Leeds 25.8; Leicester 28.1; Liverpool 24.6; London 19.3; Manchester 26.7; Nottingham 20.4; Sheffield 23.3; Sunderland 30.3.

In Edinburgh 16.6; Glasgow 22.4; Dublin 16.3.

The meteorological record for the week ending July 20, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, July 20, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...14	29.76	75.0	84.0	71.0	83	71	77.0	N.W.	N.	11	6	O.	O.		.0
Monday,..15	29.80	59.0	64.0	57.0	94	91	92.0	N.E.	N.	12	6	R.	F.	17.50	.89
Tuesday,..16	29.88	67.0	79.0	55.0	65	60	62.0	N.W.	S.W.	11	10	C.	C.		.0
Wednes...17	29.87	69.0	80.0	62.0	72	81	76.0	W.	S.E.	10	3	F.	C.	1.25	.15
Thursday,.18	29.94	68.0	74.0	60.0	76	74	75.0	N.E.	S.	4	12	C.	C.		.0
Friday,....19	29.90	71.0	82.0	60.0	74	82	78.0	S.W.	S.	6	13	C.	O.		.0
Saturday,.20	29.70	72.0	80.0	68.9	95	80	88.0	S.	N.	24	5	O.	C.	13.40	.68
Mean for Week.			77.0	62.0			78.0							32.55	1.72

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 20, 1889, TO JULY 26, 1889.

GARDNER, WILLIAM H., major and surgeon. By direction of the Secretary of War, detailed to attend the encampment of the National Guard of the District of Columbia, at Fort Washington, Md., from July 22d to 29th, 1889, for the purpose of giving instructions to the medical officers and hospital corps in their respective duties. Par. 1, S. O. 164, A. G. O., July 18, 1889.

STEINMETZ, WM. R., captain and assistant surgeon, now at Baltimore, Md., on leave of absence on account of disability, by direction of the secretary of war, will report in person to the commanding officer of the Watertown Arsenal, Mass., for duty at that station, relieving Lieutenant Colonel James C. McKee, surgeon. Par. 3, S. O. 166, A. G. O., July 20, 1889.

McKEE, lieutenant colonel. On being relieved at the Watertown Arsenal, will repair to Philadelphia, Penn., and assume the duties of attending surgeon and examiner of recruits in that city. Par. 3, S. O. 166, A. G. O., July 20, 1889.

ROBINSON, SAMUEL Q., captain and assistant surgeon, U. S. A., Fort Hamilton, New York Harbor, Leave of absence for two weeks is hereby granted. Par. 11, S. O. 165, Headquarters Division of the Atlantic, July 22, 1889.

BALL, R. R., lieutenant and assistant surgeon, U. S. A. Leave of absence granted in S. O., Headquarters Department of the Missouri, July 9, is extended five days. Par. 1, S. O. 167, A. G. O., July 22, 1889.

PROMOTION.

EWING, CHARLES B., assistant surgeon. To be assistant surgeon with the rank of captain, after five years service, in accordance with the act of June 23, 1874. July 5, 1889.

By directions of the President, the State of Arkansas, embracing Little Rock Barracks, is transferred to the Department of the Missouri. General Orders No. 66, Headquarters of the Army, A. G. O., July 19th, 1889.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE.

OMITTED FROM LAST ANNOUNCEMENT.

VANSANT, JOHN, surgeon. When relieved, to proceed to Mobile, Ala. July 11, 1889.

MEAD, F. W., passed assistant surgeon. Relieved from duty as acting chief clerk and attending surgeon; ordered to St. Louis, Mo. July 11, 1889.

WILLIAMS, L. L., passed assistant surgeon. Relieved from duty at Cape Charles Quarantine Station; ordered to Baltimore, Md. July 10, 1889.

WEEK ENDING JULY 20, 1889.

KALLOCH, P. C., passed assistant surgeon. Granted leave of absence for thirty days. July 15, 1889.

PETTUS, W. J., assistant surgeon. When relieved, to proceed to Marine-Hospital, Boston, Mass., for duty. July 18, 1889.

WOODWARD, P. M., assistant surgeon. Granted leave of absence for thirty days, July 15, 1889.

VAUGHN, G. T., assistant surgeon Relieved from duty at Boston, Mass.; ordered to Norfolk, Va. July 18, 1889.

STONER, J. B., assistant surgeon. Granted leave of absence for twenty-five days. July 15, 1889.

GEDDINGS, H. D., assistant surgeon. Relieved from duty at Baltimore, Md; ordered to Key West Quarantine Station. July 18, 1889.

WERTENBAKER, C. P., assistant surgeon. Relieved from duty at Norfolk; ordered to Galveston, Texas. July 18, 1889.

GROENEVELT, J. T., Commissioned as assistant surgeon, July 11, 1889: ordered to Gulf Quarantine Station for temporary duty. July 20, 1889.

SOCIETY NOTICE.

THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.—This Association will hold its next annual meeting at the Barnet House, Cincinnati, O., in the rooms lately occupied by the Military Order of the Loyal Legion, on Tuesday, Wednesday, and Thursday, September 17, 18, and 19, 1889. No formal invitations will be issued to non-members, but the Association hereby extends a cordial invitation, to such members of the profession wherever resident as may feel interested, to attend the meeting and participate in the proceedings. The papers and discussions will embrace subjects pertaining to obstetrics, gynecology, and abdominal surgery. By order of the President.

WILLIAM WARREN POTTER, *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

Book on the Physician Himself, and Things that Concern his Reputation and Success By D. W. Cathell, M D. Ninth Edition revised and enlarged. Philadelphia and London: F. A. Davis 1889.

Bureau of Education. Contributions to American Educational History, Nos. 3, 4. 5, 6, 7. North Carolina, South Carolina, Georgia, Florida, Wisconsin Washington: Government Printing-Office 1888–89.

Lectures on Pathological Anatomy. By Samuel Wilks, M.D., F.R.S., and the late Walter Moxon, M D., etc. Third Edition, thoroughly revised. By Samuel Wilks, M.D., etc. London and New York: Longmans, Green & Co. 1889.

The Urine, the Common Poisons, and the Milk. Memoranda, Chemical and Microscopical, for Laboratory Use. By J W. Holland, M.D. Illustrated. Third edition, revised and much enlarged. Philadelphia: P. Blakiston, Son & Co. 1889.

Munich a Healthy Town. Two Reports by Drs. M. von Pettenkofer and H. von Ziemssen, Munich, 1889. Reprint.

University Medical College of Kansas City (Formerly Medical Department of the University of Kansas City, Missouri). Ninth Annual Announcement and Catalogue of Sessions, 1888–89.

First Annual Report of the Methodist Episcopal Hospital, Brooklyn, N. Y. Covering a period of ten and one-half months, and ending October 31, 1888, with its History, Charter, etc.

Annual Announcement with List of Graduates from 1874 to 1889 inclusive, of the Hospital College of Medicine, Medical Department of Central University, Louisville, Ky Session of 1890.

Cystoscopic Explorations by A. V. L. Brokaw, M.D., Demonstrator of Anatomy in Missouri Medical College, Assistant to the Chair of Surgery and Senior Assistant Surgeon St. John's Hospital, St. Louis, Mo.

Original Articles.

THE ANATOMICAL APPEARANCES RESULTING FROM POISONING BY ARSENIC.[1]

BY F. W. DRAPER, M.D.,
Assistant Professor of Legal Medicine in Harvard Medical School.

The notes presented in this brief paper relate solely to that class of cases of arsenical poisoning which may be properly designated as acute—cases, in other words, in which death follows a single toxic dose of arsenious acid after an interval of time not exceeding forty-eight hours. The anatomical appearances here described will be, in the main, such as the writer has himself observed in his inspection of the dead bodies of persons who have killed themselves with arsenic. In these observations, the toxic effects of this poison have seemed to take a wider range and a more comprehensive character than the standard text-books of toxicology would lead one to believe. The writers with whom students of forensic medicine are most familiar, such as Taylor, Guy, Casper and Reese, give the distinct impression that arsenical poisoning is essentially an affair of the stomach and intestines, and that other organs and regions have either no interest at all, or an interest so remote as to be hardly worth mentioning. The appearances which the gastric and intestinal mucous membrane presents are generally described with great particularity of detail; and the color-effects, the red evidence of "irritation," are especially elaborated to impress the memory; for to nearly all authors of toxicological works, arsenic is a typical "irritant" poison, and, being such, its characteristic effect should be inflammatory redness. Moreover, it is fair to state that toxicologists are usually distinguished as chemists, not so much specially interested in the anatomical appearances of organs as in the best methods of recovering the largest amount of poison from those organs; if they see anatomical specimens from the victims of arsenic, it is not usually at the autopsy-table, but after an interval of hours or days, when the organs are submitted to them in the chemical laboratory, and after exposure to air and the conditions favoring decomposition have materially modified the original appearances. It is for these reasons that the descriptions which are given in the standard text-books on poisons, so far as they relate to the post-mortem appearances left by arsenic, are incomplete and unsatisfactory. I shall be pardoned, therefore, if in addition to the mention of certain anatomical features of arsenical poisoning, well-known because oftenest found in the books, I include other features less familiar, but scarcely less interesting or important, which I have personally noted.

Let us suppose, now, that the dead body of a man is found. He has taken a quantity of arsenious acid in secret with suicidal purpose, and has carefully destroyed all the evidences of his act and intent. He has died without antidotal treatment, and his dead body affords the only present available proof of the cause and manner of the death. What are the indications which the medical examiner finds at the autopsy to suggest to him that arsenic was the lethal agent, and to guide him as to the propriety of chemical confirmation of his post-mortem diagnosis?

It is not to be understood that these data for diagnosis are uniform in kind or in degree in all cases; in this respect, arsenical poisoning is not different from most pathological processes. The changes which result from the ingestion of a fatal dose of arsenic are subject to manifold modifications. The state of the stomach in its relation to the last meal of food, the amount of its fluid contents, and other conditions interfering with the direct disposal of the poison, will at once occur to the mind as factors to control the post-mortem appearances. Time, too, is an important element in the matter; the interval between the ingestion of the poison and the death of the patient, and the interval between the death and the autopsy, ought to be considered in this connection. But perhaps the most striking modification, and one that is not sufficiently noted in descriptions of the stomach and intestines after arsenical poisoning, is that due to the treatment which the patient receives. Much of the so-called "inflammation" in these cases is caused, without doubt, by the arsenic; but not a little of the redness of the mucous membrane is more readily traceable to the mustard and other emetics, to the iron and other antidotes, to the irrigation and other measures designed and applied with proper vigor and assiduity for the relief of the patient. Of the arsenical stomachs which I have seen, that one best fulfilled the description of the text-books which had received during the life of its owner copious doses of hydrated sesquioxide of iron urged upon her as long as she could swallow during the nine hours which intervened between her poisoning and her death.

Avoiding in our review of the post-mortem appearances referable to arsenic this and other sources of error as far as we can, let us study the anatomical changes which an uncomplicated case of acute poisoning would probably present.

Externally, the body would present but few indications of the cause and manner of the death. The facial expression usually suggests suffering in the last moments of life, in harmony with the characteristic clinical course of events. The degree of post-mortem rigidity is marked. If the subject is plethoric, widely extended patches of livid discoloration occupy the dependent parts of the body; sometimes, the dull bluish color of these lividities is replaced, in part, by a rosy red, a change particularly noticeable if the autopsy is delayed. The skin frequently shows another change from its normal post-mortem color or pallor, and this consists in a sallow or yellowish hue, suggesting icterus. I have observed in some instances a narrow line of ecchymosis upon the prolabial mucous membrane, that of the lower lip especially, to be explained probably as an incident of the clinical history of the poisoning, as it was most marked in cases in which vomiting was a marked symptom. Exceptionally, the tongue is seen to be reddened, but otherwise the cavity of the mouth and pharynx presents nothing remarkable.

Turning now to the internal parts of the body, let our examination take the usual course, as if we had no clue to the cause of the death and our inquiry of the several organs was to determine that clue and establish the diagnosis. Orth says:[2] "In medico-legal cases, in which a well-founded suspicion may be formed as to the cause of death, the rule is to begin with that cavity in which the suspected changes are to be found." In our present study we assume that we are not in possession of this "well-founded suspicion," but that we approach our inspection without any bias or preconceived theory.

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[1] Read before the Massachusetts Medico-Legal Society, October 3, 1888.

[2] A Compound Diagnosis in Pathological Anatomy, p. 40.

The brain and its envelopes will give us negative information. Although the brain is said by some chemical authorities to have a special affinity for arsenic, and that hence it has very great value as material for chemical examination, the presence of the poison does not leave any characteristic objective impress upon the organ. Most of the authors on toxicology make no mention of this region in describing the anatomical appearences due to arsenic; if any note at all is made, it is to remark that "congestion" is sometimes observed. In my own cases, the injection of the cerebral and meningeal vessels has been remarked mainly in cases in which morphia was used to allay the toxic symptoms.

The organs of the thoracic cavity next demand our attention. In cases in which death has followed quickly after the ingestion of a fatal dose of arsenic, the heart escapes injury; the color and consistency of its muscular tissue remain normal. But if life be prolonged beyond eight or ten hours, parenchymatous changes are developed, and the normal red color of the ventricular walls becomes changed to pale or yellowish, while the consistency of the muscular tissue is diminished and is friable under pressure, a condition betokening fatty degeneration. Just when this change in the cardiac muscle begins, it is difficult to state with definiteness; it is an early effect of arsenical poisoning and coincides with the absorption of the poison into the blood. It is certainly a rapid change and must be one of the factors in the cause of death. I have seen it in a case in which death followed after an interval of six hours; and, on the other hand, it was not manifest in the heart of a young woman who survived ten hours.

Another appearance in the heart, and one that I have been disposed to consider as characteristic of arsenical poisoning, is the presence under the endocardium of the left ventricle of ecchymoses, not larger than a dime and usually limited to the posterior wall or the interventricular septum. These ecchymoses are generally single, and they rarely exceed two in number. In depth they are superficial, section displaying simply a thin layer of blood under the endocardium. In one instance I have seen ecchymoses on the external surface of the heart under the visceral pericardium; they were about the size of a split pea, and were found mostly on the upper part of the left auricle between the aorta and the appendix auriculæ.

The blood in most cases is dark in color and fluid in consistency, whether it be observed in the right ventricle or in the large arteries. It is described as "syrupy" by some writers, but my cases have not yielded a result that could be designated by that term, unless the syrup were understood to be very thin.

Writers on poisons have not found anything noteworthy to state concerning the lungs, with reference to their appearance after death by arsenic. Yet there are one or two features growing out of the condition of the blood that seem deserving of mention. The fluid state of the blood permits its ready gravitation to the dependent portions; hence we generally find an unusual degree of hypostatic blood-supply. In some cases, the blood takes on color-changes which show best in the lungs; the anterior and upper portions are of a florid, almost vermilion hue; while the posterior and inferior parts retain their dark purple. The appearance of the lungs in these instances is not unlike the effect produced by carbonic-oxide poisoning. Another phenomenon referable to the blood is the presence of capillary hæmorrhages under the visceral pleura; these are few in number, varying in size from that of a mere point to that of a grape-seed, and they are usually limited to the lower parts of the lung and to the fissures.

Turning now to the abdominal group of organs, and following in our description the usual order, we note, in the first place, that the vessels of the peritoneum, in our hypothetical case of arsenical poisoning, are almost invariably injected to a marked degree.

The spleen gives us nothing of value in our search for data; so far as our present inquiry is concerned, it is of no service to us.

The kidneys present an interesting degenerative alteration, which has received less attention than it has deserved. In proportion to the length of time which has elapsed between the ingestion of the arsenic and the fatal result, these organs will be found to display, in greater or less degree, the evidences of parenchymatous change, due probably to the irritant action of the poison circulating in the blood and seeking an avenue for elimination. At first this change manifests itself in the form of "cloudy swelling," so-called, in which the kidney loses its normal grayish-red color and its firmness, becoming pale and soft and increasing somewhat in size. These changes progress till true fatty degeneration takes the place of the granular degeneration of the earlier stages, and the organ is yellowish gray, flaccid and enlarged. Its section shows a somewhat thickened cortex, yellowish gray in color, with marked opacity, and presenting yellow streaks and spots indicating fatty degeneration of the tubules. The contrast between this portion of the organ and the appearance of the medullary pyramids is distinct because the vessels of the latter are relatively full. Upon microscopic examination, the granular epithelium of the tubules shows an increase in its granular elements, with indistinctness of their nuclei.

These changes begin and go forward with remarkable rapidity, coinciding in this respect with the analogous degeneration of the muscular tissue of the heart. All conditions which favor the ready absorption of the arsenic promote the parenchymatous changes which have been described. In the case of a girl of sixteen, who took a box-full of "Rough on Rats" in water on an empty stomach, and died eighteen hours later, I found the kidneys presenting the characteristic appearances of the earlier stage of fatty degeneration. On the other hand, these appearances were absent from the kidneys of a young woman who died nine hours after swallowing half a box-full of the same handy preparation of arsenious acid.

The pelvic viscera yield no data that are of service in the post-mortem diagnosis of arsenical poisoning. Sometimes the bladder displays in its lining membrane some dull red spots, but these are neither constant nor characteristic.

The appearances presented by the œsophagus are of interest because the mucous membrane of this tube comes into intimate contact with the poison on its way to the stomach, and might well be expected to give local evidence accordingly. As a matter of fact, however, this canal is generally of normal appearance.

Rarely, there are patches or long narrow streaks of dull redness. In one case, in which the body of a woman was exhumed for examination ten days after her death, I observed some bright yellow deposits on the mucous membrane of the gullet, the result of the action of the sulphuretted hydrogen of decomposition upon the arsenious acid.

The stomach is the one organ which before all others possesses in the eyes of most medico-legal observers a paramount importance. It receives the poison immediately upon its ingestion, offers its extensive expanse of mucous membrane to the local action of the irritant, engages actively both in assimilating and in rejecting the unwelcome guest and takes in, as well, a variety of agents designed to expel or neutralize the toxic material. It is not strange, therefore, that the post-mortem appearances presented by this organ after a fatal dose of arsenic should have challenged the close attention of medico-legal pathologists. These appearances take a wide range in kind and degree. On the one hand, it is not a very rare occurrence to find a stomach which has suffered no damage whatever by receiving a poisonous dose of arsenic; so far as its gross appearances are concerned, it shows a surprising immunity from the effects which are supposed to be typical; and, studied by itself, it would readily be pronounced normal. On the other hand, we find appearances indicating to the fullest degree the irritant action of the poison, general redness, either of a bright scarlet hue or more often of a dull brownish shade, diffused and confluent in extensive patches of submucous ecchymoses or arranged in parallel streaks which on closer examination are found to represent series of minute hemorrhagic dots. Between these two extremes, each of which has but relatively few examples to illustrate it, we find all degrees and varieties. A common observation is to find the mucosa thrown into long folds or rugæ by the contractions of the muscular coat of the stomach, and these rugæ are marked at their summits by dull, brownish-red discolorations, or present numerous transverse red lines arranged so closely together as to give the effect of a continuous longitudinal streak. The part of the stomach mostly involved in the change is the pyloric end, and here the redness indicating submucous extravasation is generally diffused, giving the surface something like the appearance of red velvet. Occasionally, one is fortunate in finding deposited on the mucous membrane unmistakable evidence of the cause of death, in the form of thick, pasty, whitish-gray patches which are firmly adherent; these are surrounded by a line of vivid crimson, and if the pultaceous mass is carefully scraped away, the underlying mucous coat will be found to display a similar intensity of inflammatory redness, but without the erosion characteristic of an ulceration. Examination of the pasty material with a good lens reveals the typical crystals of arsenious acid. Besides this adventitious lodgement of the poison upon the gastric mucosa, one sometimes finds large areas of the surface covered with a layer of thick tenacious mucus, giving a suggestion of diphtheric exudation. There is, moreover, a swelling of the mucous membrane, demonstrated by the obliteration of the normal line of demarkation between the œsophagal mucosa and that of the stomach. The microscope detects in the gastric glands changes which correspond with those already described in connection with the heart and kidneys; namely, cloudy swelling of the cells lining the glands, followed at a later stage by their fatty degeneration. It is, perhaps, needless to add that the changes in the stomach due to arsenic are confined to the mucous coat, the muscular and serous coats escaping injury.

The contents of the stomach in arsenical poisoning deserve a passing word. Notwithstanding the violent vomiting which forms such a predominant clinical feature in these cases, the stomach is never found empty, but the amount of matter which it retains is often sufficient to excite surprise. Generally the contained matter consists of a pint or more of thin grumous fluid, brownish-red in color and without odor. Sometimes this fluid has a distinctly reddish tinge from the blood which it contains; if it be placed in a glass jar and allowed to stand a few minutes, this blood-stained portion forms a layer at the bottom, and its hæmorrhagic character is more easily demonstrated. An occasional feature in the gastric contents is the presence of white, soft, flocculent masses floating in the fluid.

The intestines present appearances which are analogous to those just described in connection with the stomach, but in general they are less striking; moreover, lesions of the gastric mucosa and those of the intestinal tract do not correspond in degree in the same subject, for it is not unusual to find typical hæmorrhagic gastritis fully developed, with scarcely any alteration of the intestinal coats. Of all parts of the small intestines, the duodenum shows the effects of arsenic most frequently and most satisfactorily; we observe here the same redness of submucous ecchymosis which the lining of the stomach presents. The summits of the mucous folds are especially the seat of the change; and here, too, one sometimes sees small patches of vivid crimson overlaid with a white pasty deposit, marking the lodgement of the arsenic. Other parts of the intestinal mucosa offer no constant lesion; it is most often found reddened in larger or smaller areas somewhat widely distributed. It is an error to fancy that arsenic leaves its irritant traces uniformly, and that in fatal poisoning by that agent there is in the intestinal lining a general diffused inflammatory redness from the pylorus to the cæcum; such wide-spread effects are occasionally seen, but they are the rare exception.

The contents of the small intestines are fluid, and in general resemble thick rice-water, through which are distributed flocculent lumps of soft whitish matter, and sometimes masses of the poison itself in the form of white, pultaceous collections. If the hæmorrhagic lesion of the gastric and duodenal mucosa is very marked, the blood which has escaped in consequence will give a brownish-red hue to the contents of the intestines.

The colon and rectum are almost always found contracted and empty, with a soft, swollen, grayish lining membrane, covered with white stringy mucus. The redness which is observed in the small intestine and the stomach is not continued in the lower bowel except in protracted or chronic cases of poisoning. It has not been my fortune to observe it in any acute case.

Last and largest in the list of organs which we question for evidence of poisoning, is the liver, the special store-house of the lethal agent. The one characteristic change wrought by arsenic consists of fatty metamorphosis, a change analogous to that observed in the heart and kidneys. In gross appearance, we find the liver slightly increased in size, if changed at all, rather firmer in consistency than in the normal state, and displaying externally and on section circumscribed yellow areas; or, if the change has gone forward to an extreme degree, the entire organ presents a uniform light-yellow color having wholly lost its normal reddish-brown. Here, again, as in the heart and kidneys, the change is a rapid one, a few hours sufficing to reduce the organ from its normal state to a condition in which fatty degeneration and fatty infiltration are associated, the former a late stage of parenchymatous (granular) inflammation, the latter an incident thereto.

This review of the anatomical appearances left by arsenic upon the human body leads directly to the question which is of paramount medico-legal importance; namely, Is post-mortem diagnosis of arsenical poisoning an easy matter? That is to say, assuming, as we assumed at the beginning of this paper, that we are in the presence of a dead body of whose clinical history we know nothing, are the revelations of the autopsy sufficiently characteristic and unequivocal to warrant one in concluding readily that the death was by arsenic? The answer is in the affirmative, upon the single condition that the data are studied in their associated relation, and that their collective significance is the evidence which guides the examiner. There is no single organ whose testimony is sufficiently conclusive to control the diagnosis, with the possible exception of the finding of deposits of the poison upon the gastric mucosa, with a marked degree of inflammatory redness beneath and around them; but short of this, the condition of the stomach, however striking its inflammatory character may be, is suggestive only, the various degrees of irritant effects being explainable by numerous causes other than arsenic. But when, in addition to the presence of gastritis, one finds fatty degeneration of the heart, kidneys and liver, a fluid and dark condition of the blood, and sub-endocardial ecchymoses, he may with clear conscience testify in court that he is of the opinion that the death was by arsenic. In this conclusion, he would probably be confirmed by the results of a properly conducted chemical examination of the viscera. Indeed, without the gastric and enteric data, or with only an insignificant and equivocal degree of inflammatory reddening of the mucous membrane of the digestive tract, the concurrence of fatty changes in the heart, kidneys and liver should arouse the examiner's suspicions, and suggest to him the propriety of seeking the chemist's aid to verify his surmises.

In this paper, I have purposely refrained from discussing controverted questions relating to arsenic and its effects on the system, preferring to set forth in as clear and intelligible a manner as possible the anatomical data of acute arsenical poisoning as I have observed them or as they are agreed upon by standard authors, rather than to indulge in the examination of speculative points or to quote the diverse opinions of various writers upon unsettled problems pertaining to the main theme. Certain incidental topics, too, like the influence of arsenic on putrefaction, the technical methods of conducting a medico-legal examination in a case of arsenical poisoning, and the proper way of preserving and transmitting material for chemical examination, have been purposely omitted. If the simple and uncomplicated sketch here offered shall serve to promote the practical aims of legal medicine as represented in this Society, its design will have been fulfilled.

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CEREBRAL SYMPTOMS CONNECTED WITH PHTHISIS.[1]

Statistical Part of the Paper.

BY J. B. AYER, M.D.

In 1863, Dr. Clouston described a form of mental disease characterized by special symptoms, to which he gave the name of "Phthisical insanity." He stated that two to three per cent. of phthisical cases were followed by this form of insanity; but in looking over the McLean Asylum Reports eleven years ago, I found only five cases out of 5,116 attributed to phthisis, and in asylum reports generally, I find very few cases tabulated as of phthisical origin.

To aid in determining to what extent the adult brain is affected in phthisis, I have inquired into the history of one hundred and fifty-four cases of pulmonary consumption at the Channing Home, which have came under the care of Drs. Mason, Rotch, V. Y. Bowditch, Lovett and myself with the following results: twenty-five had mental disturbance; three others had convulsions; six others had the unreasonable assurance of improvement characteristic of spes phthisica, — the delirium of hope.

MENTAL DISTURBANCE.

Case I. Miss M., twenty-three years of age, had been a patient at Danvers Asylum, making a good recovery. After her discharge she worked several months in a family, and then (March, 1886) began to cough. She entered the Home, September, 1886, and remained till April, 1887. She was reasonable when she entered, but toward the end of her stay had an attack of melancholia, and would speak to no one. She could not be cared for at the hospital, but was taken to her home, where she recovered from the mental symptoms in the course of nine months. Phthisical disease is steadily progressing, and she is emaciated and much troubled with coughing.

Case II. Mrs. E., thirty-one years, Swede. Phthisis of one year's standing. On account of delusions left the Home abruptly at the end of nine days. Dr. A. L. Mason saw her afterward, and found it was necessary for protection to remove the children from the mother. Subsequent history unknown.

Case III. Mrs. L., twenty-eight years, Swede. Advanced phthisis. She has had delusions due to that disease. She turned against her husband and against the Home, and was discharged at her own request at the end of ten weeks. She applied for re-admission but was declined on the ground of insanity.

Case IV. Miss M., thirty-seven years at time of death. Phthisis of eleven years' standing. She never had a sound mind, and was partly demented during her stay of many years at the Home. The dementia was aggravated by pulmonary disease.

Case V. Mrs. B., twenty-eight years, entered Home, July 3, 1880, with advanced phthisis of eighteen months' standing. No important change followed admission except that hallucinations of hearing developed. She imagined that patients in the lower ward were conspiring against her. On this account she desired to leave the Home, and was discharged.

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[1] Read before the Boston Medico-Psychological Society, January 17, 1889.

Case VI. Mrs. C., twenty years. Phthisis dated from May, 1881. She left the Home, April 6, 1882, on account of hallucinations of hearing. She felt that we were going to kill her. She was admitted to the City Hospital, and again taken back to the Home. She became quite clear, and disturbed no one during the last four weeks of her life. She died in June, 1882.

Case VII. Mrs. Mary S., thirty-eight years. The wife of a physician who had been Mary's employer, writes: "Mary had been most respectful and amiable; but three years before her death she changed her manner, would speak abruptly and at times was abusive. During several months these were the only symptoms noticed, and only at a later date was lung trouble discovered." In the Home she was querulous, suspicious of patients, and said that her brothers were persecuting her. She felt that people were coming into the kitchen and talking about her in an unfriendly way. She died at the Home in May, 1888. (after seven months' residence there). During the last month of life she was quite clear in mind, and seemed anxious to make amends for all the trouble she had caused.

Case VIII. Mrs. D., forty-two years old when she entered in December, 1883. She found fault with the patients, and would, without provocation, suddenly throw her food across the table. She complained that her mug of milk was not of as good quality as that of the other patients. She thought her food was poisoned. She would astonish visitors by "putting on airs." Nevertheless, she was able to remain in the Home two years and nine months, at last developing tubercular peritonitis. During the last six weeks of life her delusions had for the most part disappeared, and she became tractable again.

Case IX. Miss P., twenty-five years of age, left the Home January 21, 1881, on a bitter cold morning, saying that she was in great trouble. She also took sudden leave of other homes and hospitals. Hallucinations of hearing.

Cases X. XI, XII. In these three patients the mental symptoms were those of extreme uneasiness with a desire to abruptly change their residence.

Case XIII. Mrs. M., fifty-six years. Phthisis began in 1880. She was admitted in August, 1884, and died November, 1884. During the last few weeks of life she became noisy, and disturbed other patients by praying in a loud voice and on all occasions.

Cases XIV, XV, XVI, XVII. These four patients had delusions about food, etc. Occasionally abusive.

Case XVIII. Miss F., thirty years. Phthisis of eight months' duration on entrance. She lived three months in the Home and greatly annoyed the other patients by scolding her cough in a loud voice. "Bad manners to you," she would exclaim in addressing her cough. Toward the end of life she became deaf, and was more quiet, but did not become clearer in mind.

Case XIX. Miss B., thirty-three years, would not permit her family to know her whereabouts. She left the Home ten days before her death, giving this reason, "I do not wish Mary (one of the patients) to have the opportunity of saying that I am laid out in a coffin down stairs."

Cases XX, XXI, XXII. All three patients began to wander in mind during the last four weeks of life.

Case XXIII. Mrs. G., forty-two years, died at the Home three months after admission, and twenty-one months after the disease began. Three years before death she began to scold, which was the first symptom. It was not an annoying form of insanity. She talked about ghosts and imaginary people visiting her. At table she would forget that she had been served and would say in the mildest possible way, "nobody has waited upon me." Hallucinations and delusions continued to the end of life.

Case XXIV. Mrs. C., twenty-five years. Phthisis lasted twenty months. She interested patients with wild romances about herself. At times she regarded herself as an exalted personage.

Case XXV. Mrs. M., twenty-seven years. Came from Lying-in Hospital five weeks after confinement, and died two weeks after admission. Mild delirium, constantly trying to get out of bed.

CONVULSIONS.

Case I. Miss O'B., had epileptic attacks at the age of five, and when she entered the Home, September, 1879, one year after the appearance of phthisical disease the epileptic attacks occurred once in two weeks. She died in October, 1885. Her mind was always clear except during the attacks which occurred at rarer intervals as the pulmonary disease progressed.

Case II. Mrs. B., twenty-five years, entered April 8, 1884, with extensive disease of both lungs dating from July, 1883. Convulsions began April 28, 1884. She died June 6, 1884. Four convulsions in all.

Case III. Miss C., now forty-eight years, coughed since 1871. Spinal deformity and active lung disease when admitted to the Home in 1881. Pulmonary disease has progressed very slowly since admission. In September, 1886, she began to be forgetful and to have epileptic convulsions which now occur once in two or three weeks. She is at times greatly confused and does not recognize her physicians. Approaching dementia.

SPES PHTHISICA.

At least six of the one hundred and fifty-four patients clung to a hope which under the circumstances was most unreasonable.

One patient upon the day of her death insisted upon being dressed and upon walking across the room without help. She could not realize how weak she was and kept asserting that she was going to get well, and would burst into tears if any patient hinted that she might not recover.

Another patient, forty-nine years of age, was in the habit of visiting a mind-cure physician and always returned in a happy state. Although hardly able to stand she would report "They tell me there is nothing the matter with me, so I know I am going to get well." Three days before her death she left the Home for fear of "taking consumption."

This proportion of cases of marked Spes Phthisica is undoubtedly small when compared with the experience of private practice.

Dr. Mason explains this circumstance by the fact that most of the patients had been informed previous to their admission that their condition was either serious or incurable.

In many of the cases a strange indifference regarding the state of their health was noticed, and, as a rule, there was less anxiety shown regarding their condition than one would expect.

In explanation of most of these cases of mental disturbance it is not necessary to assume a tubercular deposit in the brain for tubercular meningitis in the adult is not of frequent occurrence.

Probably anæmia, œdema of the brain and the hectic condition will account for most of the cerebral symptoms described.

No *special form* of brain disorder existed in these cases; on the contrary there was the greatest variety of mental disturbances ranging all the way from insanity adapted to asylum treatment down to the mildest form of delirium and the enviable "delirium of hope."

There were no *constant* delusions nor hallucinations. Suspicion, uneasiness, and desire for change were most frequently noticed.

In two of the cases the mental symptoms preceded by several months the discovery of pulmonary disease.

In four cases the mental disturbance *commenced* during the last month, while in three cases the mind grew clearer during the last four weeks of life.

As we ordinarily see consumptive patients in private practice, the proportion of these cases showing mental disturbance may seem a large one, but it must be remembered that a Consumptive's Home affords an excellent opportunity to study cases allowing a continuous oversight of the patients, and generally for a long period.

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COPAIBA IN SURGERY.

BY H. H. A. BEACH, M.D.,
Visiting Surgeon to the Massachusetts General Hospital.

IN the long-continued use of copaiba as an internal remedy, its value in surgical dressings may have been gradually lost sight of, until now it lies among the rubbish of forgotten things that excite only the interest of the antiquarian, its connection with a living and progressive art having in some unaccountable way become severed.

Some years ago, while reading the interesting description of "Medical, Surgical and Anatomical Cases," published by Lawrence Heister, in London, 1755, I was much impressed with the importance he attached to the balsam of copaiba in his dressings, and determined to test the drug in that capacity. It was accordingly applied to an indolent granulating surface, by first saturating charpie with the balsam, and after squeezing out the superfluous balsam, bandaging the charpie upon the ulcer. The unusually rapid growth of a handsome bed of rosy granulations, ready for the grafting process, was so clearly attributable to its use, that I continued to employ it, and finally adopted it as regular dressing to granulating surfaces in my hospital wards. It is simple, cheap, quickly prepared, and most satisfactory in its results. Its use has gradually spread to the wards of my colleagues at the hospital, and it is now an accepted dressing; being especially adapted to the flat, pale, granulating surfaces that commonly result from avulsions of the scalp, extensive burns and scalds, also for the cavities after operation for removal of necrosed and carious bone. It has succeeded in raising healthy granulating surfaces for grafting after other stimulating applications had failed. At the hospital it is applied with cotton-waste instead of charpie. The waste can be easily picked apart and cut into short bits by convalescents. The porous nature of the dressing permits a ready absorption of pus and of its partial disinfection by the copaiba, which imparts a fragrant balsamic substitute for the sourish odor of pus partly decomposed. On the chances that its activity as a dressing depended upon the copaivic acid which it contains, I have also applied that substance with a negative result.

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PROGRESS IN DENTISTRY.

BY W. H. ROLLINS.

OBLIQUE–ROOTED TEETH.[1]

THIS abnormality, which is rare, has been observed exclusively in the upper first molars. The normal position of the roots of these teeth may be represented by three dots arranged in this way, ·: In oblique-rooted teeth the roots are arranged as follows, ·: The history of the extraction of these teeth is given, and the important point to remember is that in all attempts to extract, the forceps rotated. Whenever this rotation is met with in attempting to extract an upper molar, the operation should be postponed till a suitable instrument is ready, otherwise damage will be done to the other teeth or to the jaw.

PALATAL RUGÆ IN MAN.[2]

The conclusions of this writer are: The range of variation in the roof of the mouth and its folds is greater in persons affected with nasal catarrh than in those who are free from the disease. The variations in the rugæ are different on the two sides of the mouth. The excess of development of the premaxilla, and of the horizontal plate, especially the anterior portion, constitutes a condition which is found in about fifty per cent. of cases of nasal catarrh.

Nasal catarrh is found associated with so many phases of asymmetry of the rugæ of the hard palate and of the dental arches, that the disease should be studied as a morbid action which is based upon morphological elements, and not alone on climatic conditions.

STRUCTURE OF DENTINE.[3]

These experiments were suggested by those of Dr. Ord in etching the surfaces of mother-of-pearl and ivory by placing them in glycerine containing subcarbonate of potash. In order to apply this method to the dental tissues, a few experiments were tried, and as a result, it was found that not only other alkalies but also pure glycerine would produce the appearances, showing that the glycerine was the real active agent. To prepare for the experiments, freshly extracted teeth were ground and formed into thin sections, which were allowed to remain in glycerine for periods varying from one to six months. Examined with the eye, the teeth were found to be more transparent than usual. Under the microscope, the dentine bordering the pulp cavity was seen to present a fringed appearance, and was slightly laminated. Under a higher power, this was shown to be due to the dentinal tubes having lost the intertubular substance, the removal of this matrix leaving the tubes free; their course appeared interrupted at intervals by layers of membrane having a general direction parallel to the pulp. These layers looked like globular dentine. In this case, however, the globules were not solid, and the dental tubes could be seen crossing from one space to another. It is as yet too early to decide upon the significance of these appearances, but enough has been said to show the value of this new method of studying the hard tissues of the teeth.

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[1] Pearsall, in Journal British Dental Association, p. 38, 1889.
[2] Allen, in Dental Comos, p. 66, 1889.
[3] Bennett, in British Journal Dental Science, p. 1121, 1888.

TREATMENT OF POST-NASAL CATARRH.[4]

Seventy-five cases are reported, of which sixteen were cured by removing nasal obstructions. The importance of this treatment from a dental point of view, lies in the fact that the patients can use their noses to breath through. Where persons breathe through the mouth, the gums invariable become congested, recede, and the teeth become loose.

ANOMALOUS PAROTID DUCTS.[5]

There were six children in the family, three of whom had small openings just in front of the ear, from which there was a continuous discharge of saliva. On examination it was found that these openings were the outlets of the parotid glands. The other children had the openings of the glands in the normal positions. Inquiry showed that the abnormal openings were present in the cases of two cousins. All the other relations examined had normal ducts.

FUNCTIONS OF THE TONSILS.[6]

The significance of the various tonsils is in their relation to the blood-manufacturing system and to the outpour of copious secretions. The relations of the tonsils to the rest of the system can be well appreciated by comparing them with the relations of the sewage farm to the town whose refuse it makes use of, and to which it returns its elaborated products. If any of the secretions delivered to the tonsils become contaminated with irritating matters, whether generated in the system, or introduced from without, the tonsils in physiological correlation with the affected secretion show irritative changes.

STAPHYLORRAPHY.[7]

A return to this operation is recommended, instead of trusting to obturators as is usually done in this vicinity. His objections to obturators are that they require frequent removal to keep them clean, and that among the poor the expense of the apparatus prevents its use. In the same journal, Grant favors obturators, unless the operation for closing up the palate includes the introduction of new tissue by grafting between the edges of the cleft. He suggests that, if such grafting is resorted to, protection should be temporarily given to the lower surface by a plate of rubber or some other hard material.

EXCESSIVE ABSORPTION OF THE ALVEOLI A CAUSE OF NEURALGIA.[8]

The patient tried in vain to wear an artificial plate, but was unable to do so on account of the severe pain which it caused. An examination of the alveolar border of the lower jaw showed marked absorption, the inferior dental nerve coming so near the surface that the plate pressed upon it.

IMPLANTED TEETH.[9]

The results of implantation obtained by those operators who have given most attention to this new operation, are tabulated, and eighty-four per cent. reported as successful. The authorities differ as to whether the teeth become of the same color as the other teeth, and also as to the means by which the teeth become attached. On this latter point they are about equally divided between simple mechanical means, membranous attachments, and anchylosis.

DENTAL REFLEXES.[10]

Several interesting cases are reported of apparent diseases of the eyes caused by the teeth; namely, spontaneous dilation of the pupil, diagnosed as the beginning of locomotor ataxia, but which he cured by extracting a carious molar; a case of blindness, cured by extracting a tooth; asthenopia of the accommodation, cured by the extraction of two upper molars, which had been filled with gold; several cases of spontaneous movements of the eyelids in children, cured by lancing the gums or by the extraction of decayed teeth; ulcerations of the cornea, cured by lancing the gums during teething.

CARIES OF THE TEETH.[11]

The number of children reported as having been examined was 623, about equally divided as to sex. Of this number forty-eight had sound teeth. None of the children were over fifteen. The teeth examined were classified as follows:

Sound Teeth	Temporary	3225
	Permanent	7600
		10825
Carious Teeth	Temporary	1875
	Permanent	1944
	Total,	3819

This table shows that over thirty-four per cent. of the individual teeth were decayed.

The mixed saliva was also tested in each case, but no attempt was made to separately examine the saliva of the individual glands. The average of the chemical reaction between the ages of five and fifteen was 72.36% neutral, 25.64% acid, and 2% alkaline. Ottofy claims that decay is less frequent in cases of neutral than it is in cases of alkaline or acid saliva. I doubt this in cases of alkaline saliva.

I give in detail his results of examination of the saliva, as I know of no similar and extended examination.

Table Showing the Reaction of the Mixed Saliva at Various Ages.

5 years.	75 % neutral.	25 % acid.	0 % alkaline.
6 "	61 "	39 "	0 "
7 "	61 "	39 "	0 "
8 "	84 "	14 "	2 "
9 "	67 "	31 "	2 "
10 "	77 "	16 "	7 "
11 "	73 "	27 "	0 "
12 "	69 "	30 "	1 "
13 "	74 "	22 "	4 "
14 "	90 "	10 "	0 "
15 "	65 "	29 "	6 "

He finds caries more prevalent among the girls, amounting to thirty-seven per cent. at five years, being never less than twenty-four per cent., and in some instances as high as fifty per cent.; while, in boys, the maximum at any age was thirty-four per cent., and the minimum sixteen per cent. At all ages, during the eruptive stages, caries was more prevalent on an average among the girls, by five per cent., than among boys. The total average at all ages among these children was twenty-seven and a third per cent. in males, thirty-two and two-fifths per cent. among girls, and thirty per cent. in both. This indicates that among the school children of this country thirty per cent. of the teeth are decayed before the age of fifteen, and shows how widespread a disease caries has become.

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[4] Reynolds, in Boston Medical and Surgical Journal, p. 208, 1889.
[5] Crossman, in Southern Dental Journal, p. 289, 1888.
[6] Spicer, in London Lancet, p. 805, 1888.
[7] Porter, in Boston Medical and Surgical Journal, p. 21, 1889.
[8] Mitchell, in Journal British Dental Association, p. 47, 1889.
[9] Smith, in Dental Cosmos, p. 803, 1888.
[10] Galezowski, in British Journal Dental Science, p. 795, 1888.
[11] Ottofy, Cosmos, p. 15, 1889.

FILLING MATERIALS AS CONDUCTORS OF HEAT.

In cases of near approach to the pulp, the conductibility of the filling to be used should be carefully considered. Kells[12] has made a most important addition to our knowledge in this matter, through the introduction of his thermostat. This consists of a disk of zinc slightly concave and held rigidly at its edges by a hard rubber base. Through the back of the base is introduced a finely threaded screw, which almost impinges on the centre of the disk. The thermostat is placed in an electric circuit, which is broken by the want of contact between the zinc disk and the screw. To test the conductibility of the filling material, little cups are made of the different kinds to be tested, and water warmed to 140° F., is placed in them. One at a time they are placed on the zinc disk, and the time noted till the heat has expanded the zinc disk and closed the circuit, which is announced by a bell. By means of this machine he finds that gutta-percha is the only filling material which we have, that has a low power of conducting heat, and therefore that this is the only safe material to place near an almost exposed pulp. The oxyphosphates and oxychlorides are good conductors, and should never be placed near a pulp unless it is protected by a layer of gutta-percha one-sixteenth of an inch thick. No filling material at present known is so poor a conductor of heat as the natural covering of dentine and enamel.

OBTUNDING SENSITIVE DENTINE BY ELECTROLYSIS.[13]

Apply the rubber dam to the tooth, dry the cavity, soak in a six per cent. solution of cocaine in alcohol. Place the positive pole of a four-cell battery in the wet cavity, and apply the other pole to the cheek for three minutes. The writer claims that this completely destroys the sensibility of the tooth.

ELECTRICITY IN THE OPERATING-ROOM.

A writer in the *Dental Cosmos* makes the following suggestions as to the introduction of the electric current into the operating-room from the streets: The possibility of accidents demand the most careful construction of the apparatus, and the most thorough insulation of the motor for the engine and the mallet. There should be safety appliances to cut off any accidental augmentation of the current. Finally, as the current for the arc lights is more destructive than that from the Edison and similar dynamos, the current from the latter should always be taken when it is possible to obtain it.

COMBINATION FILLING.[14]

A matrix of thin German silver is to be applied to the tooth, and held firmly by suitable ligatures. Into the cavity thus made, amalgam is to be packed till the cavity is two-thirds full: then Steurers gold is packed against the amalgam till the gold ceases to lose its color, when the filling may be completed with gold foil. Dr. Clapp states that by means of this new crystal gold of Steurers, a filling can be built up out of gold and amalgam at one sitting that is better for cavities that extend under the gum than an all-gold filling. The time to make the filling is greatly reduced, and this is an important point, the filling is thought to be better than one entirely of amalgam, as this is apt to crack at the edges from mastication.

EFFECT OF NITROUS OXIDE.[15]

There is a progressive loss of carbonic acid in the gasses expired from the lungs under the inhalation of nitrous oxide. This is not associated with the accumulation of carbonic acid in the blood, and must therefore be due to diminished production in the tissues, or to defective absorption by the blood. In order that carbonic acid may be produced, free oxygen, or some substance capable of yielding it, must be present; but under nitrous oxide the free oxygen is displaced by nitrous oxide, which is not decomposed in the system; hence during the inhalation of nitrous oxide, the process of tissue metabolism and the production of free carbonic acid is in abeyance. What effect has nitrous oxide on the heart? Comparison of the pulse-trace taken from the same individual before and during the inhalation shows that during the height of anæsthesia, the number of strokes is increased; they have a greater height and greater sharpness of the initial curves and apices. Tidal wave is almost absent, while the dicrotic wave is accentuated, and farther from the apex of the trace.

NITROUS OXIDE AS AN ANÆSTHETIC.[16]

Nitrous acid has been said to produce anæsthesia in several ways. By entering the lungs and being split up into oxygen and nitrogen either in its passage through the pulmonary epithelium or in the blood or tissues through which the blood passes. In disproof of this splitting up, we have Frankland's experiments, which show that practically all the nitrous oxide can be recovered from the lungs, and also the experiments of Bert, which show that oxygen cannot produce anæsthesia; while Sanderson, Turner and others have proved that nitrogen cannot produce anæsthesia, if, therefore, nitrous oxide can produce this effect, which its constituents are incapable of producing, we may suppose it does not undergo decomposition.

Anæsthesia from nitrous oxide cannot be due to a deoxydation of the blood; for when you asphyxiate an animal by allowing him to breath into a long tube, no anæsthesia is produced, the animal remaining sensitive as long as alive. Buxton holds the view that nitrous oxide produces a specific effect due to its composition. The experiments of Bert, which have been mentioned in a former report on dentistry, seem to prove his view. Bert mixed oxygen with nitrous oxide, and thus was enabled to maintain complete anæsthesia for any length of time, a whole day, in some of his experiments.

Beside the effects I have already mentioned, there are others which may be mentioned in connection with the blood and circulation. Nitrous oxyde when it enters the blood becomes loosely associated with the hæmoglobin and myoglobin. The blood of animals under it show less oxyhæmoglobin, but as the blood exposed to the air readily gives up the nitrous oxide, the connection must be a slight one. The watery portion of the blood also absorbs the gas, but as yet there are no data which show that any changes are produced. The most important effect upon the circulation is due to its effect on the nerve centres that govern the heart. In the early stages the heart appears little affected, but later it is slowed to a slight extent. The force of each beat is increased, as before mentioned, and its regularity maintained. If the anæsthesia is pushed until respiration ceases, the heart still beats, the pulsation becoming gradually slower and at last ceasing. If artificial respiration is begun, the heart recovers its regular beating. The blood pressure in deep anæsthesia is lowered, but this is not progressive.

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[12] Southern Dental Journal, p. 111, 1888.

[13] McIlraw, in Dental Review, p. 169, 1889.

[14] Clapp, in Dental Cosmos, p. 870, 1888.

[15] Silk, in Dental Record, p. 466, 1889.

[16] Buxton, in British Journal Dental Science, p. 228, 1888.

With regard to the injurious effect upon the kidneys, a point which has been raised against the gas, Buxton claims that, as the blood pressure is lowered and the bulk of the kidneys reduced, it is difficult to believe there can be any congestion in these organs.

So far as these elaborate experiments go, nitrous oxide is the safest anæsthetic known, and when given by Bert's method, the most perfect and lasting.

TEST FOR SULPHOCYANIC ACID IN THE SALIVA.[17]

Precipitate the mucus with alcohol, reduce the volume of the saliva by heat, dilute it with water, and add a few drops of an aqueous solution of cupric sulphate. This will immediately produce a fine emerald green color.

CHEEK PLUMPER.[18]

In certain cases of excessive absorption of the alveoli it is necessary to attach to the artificial teeth bunches to distend the cheeks, to restore the original contour of the face. These cheek distenders were the invention of Dr. Allen, but as they were hard and not movable, they interfered with the expression when the face was not in repose. Wall proposes to make them movable, so that they will follow all the motions of the muscles of the cheeks. He does this by making them of light and thin material, and attaching them to the plate by means of springs.

IMPRESSIONS FOR OBTURATORS.[19]

The ordinary or Suersen method is an attachment to the plate, and extends backward into the cleft. When the impression is to be taken, this projection is covered with soft gutta-percha, and placed in the mouth, the patient being directed to swallow and talk, so that the soft gum may be molded into proper form by the muscles of the soft palate and pharynx. The difficulty met with is in adjusting the backward extension of the plate, so that it shall not be distorted by the contraction of the muscles. The invention of Shenker consists in providing a round rod with a metal shield at the end, movable so that it can be adjusted to suit the muscles before the impression is taken. The contraction of the muscles of the pharynx pushes the shield forward, and when it is in the proper position it is fixed, and the impression can be taken with certainty.

CONCLUDING NOTES.

Dr. Andrews has accomplished a great feat in photographing the germs which produce decay. He has made sections of decayed teeth, and has been able to show by photography all the appearances described by Miller in his investigation of caries.

Black has published an extremely complete monograph on the periosteum and peridental membrane which should have been mentioned in my previous report, but could not be properly noticed at that time.

The friction between those dentists who believe patents unprofessional, and those who patent all their ideas and charge the profession for them, is greater this year than ever before; and it is difficult to see where the matter will end. Great efforts have been made by the Massachusetts Dental Society under the lead of Dr. Merriam, to introduce non-patented devices to the members of the profession, and to induce the dentists to purchase their materials of houses who are not in the Dental Trust.

The year is marked by the formation of a Dental Protective Association, the object of which is to raise a fund out of which to pay the legal expenses of the members who may be sued by the great companies which are gradually patenting about all the operations performed by dentists. This matter of patent rights is becoming more serious every year. There is no remedy for the present state of things. We must wait till the professional spirit prevents dentists from taking out patents and selling them. At present the majority of dentists believe in patents, and only object to them when they are not their own, and when they feel the effects in the shape of royalties and suits at law for infringments.

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Clinical Department.

ULCER OF THE STOMACH, AND ITS COMPLICATIONS.[1]

BY I. J. CLARKE, M.D., HAVERHILL, MASS.

Patient, N. J. F., aged forty-two, office clerk. Came under my care October 20, 1883. Family history was good, and there was nothing in the patient's history to account for his disease unless it be the fact that he had formerly been intemperate. His health till within a short period prior to above date had been excellent.

Symptoms: There were the ordinary symptoms of a mild attack of indigestion. Patient complained of a pain just below sternum. The pain was believed to be gastric (gastralgia). There was distress after eating. An anti-dyspeptic mixture of pepsin, bismuth and nux vomica was prescribed. The uncomfortable symptoms increased in severity. Patient had a profuse hæmatemesis the evening after his first visit to my office; the loss of blood caused him to faint. This was followed by another hæmorrhage the next day, which much prostrated him. Five days afterwards there was a return of the hæmatemesis, which was followed by five more similar attacks; the loss of blood in all was estimated at more than four quarts. Great prostration, with loss of consciousness and general convulsions ensued. All food was witheld; hypodermic injections of ergot and stimulants were administered; cold was applied externally; Monsell's solution was given by mouth, and nourishing enemata were resorted to. Opium was also given per rectum, and the patient was kept thoroughly under its influence. Under this treatment he recovered sufficiently to be removed to the City Hospital, Boston, where he made a fair convalescence.

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[17] Therapeutic Gazette, p. 57, 1888.
[18] Wall, in Journal British Dental Association, p. 41, 1889.
[19] Shenker, in Dental Review, p. 715, 1888.

[1] Read before the Essex, North District Medical Society, January 9, 1889.

I next saw the patient June 7, 1884; and from that time occasionally until the middle of December, 1885. During this time he complained more or less of his old trouble, but there was no return of hæmorrhage, and he was able to attend to his business.

In September, 1885, a consultation was held with Dr. F. Minot, of Boston, who confirmed the diagnosis of ulcer of the stomach. Dr. Minot did not see any reason to regard the patient's condition as complicated with malignant disease. Peptonized milk was suggested and pretty large doses of bicarbonate of soda. Patient was still able for several months to attend to his business, when one day he lost consciousness and was sent to the Massachusetts General Hospital. There was no hæmatemesis, although hæmorrhage was suspected. He remained in the Massachusetts General Hospital nearly five weeks.

I saw him again June 20, 1886; he was then suffering from indigestion, pain and flatulence, also vomiting and inability to assimilate but small quantities of food, which was given often, a spoonful at a time. There was marked emaciation and loss of strength. There was considerable dysphagia, the cause of which was obscure.

Dr. Minot again saw the patient July 15th. He did not see reason to change his diagnosis, no tumor was perceptible to palpation. Dr. Minot thought the prognosis very unfavorable. Peptonized foods were continued although nothing seemed to nourish. Food was generally vomited as soon as introduced into the stomach. Nutritious enemata were resorted to for four weeks prior to death. The pain became very severe, assuming the character of the pain of peritonitis, and death occurred August 30th.

The autopsy revealed a mild general peritonitis, more particularly in the region of the stomach and pancreas. The peritoneum was adherent to the stomach and pancreas. The coats of the stomach showed acute and chronic interstitial gastritis, and five ulcers, averaging about the size of a ten cent piece, also a scirrhous cancer involving the whole stomach and head of pancreas. Two of the ulcers were situated upon the anterior and three upon the posterior wall. Two were exactly opposite each other, about one inch from the pyloric orifice, these surfaces coming closely in contact. One may possibly have been caused by the irritating pus of the other. Both seemed to be in the same stage of cicatrization. Of the five ulcers present, three were healed, and presented a peculiar pale rugous appearance; they projected above the level of the surrounding tissues. The two that were in process of repair, showed a healthy granular condition, discharging a creamy pus, and were about half cicatrized. The walls of the stomach were about half an inch in thickness, and were transformed into a scirrhous tissue which projected here and there in the form of hard nodules which so obliterated the cavity of the stomach that it would not contain more than four ounces. The character of the disease invading the head of the pancreas was the same. Large accumulations of fæcal matter were found in the transverse colon, which accumulated in great measure from the persistent flatulence.

The above can hardly be looked upon as a typical case of ulcer of the stomach. Some may see reason to think that the cancerous disease was primary, and the ulcerous secondary. Leube says that the combination of carcinoma with round ulcers of the stomach is particularly interesting, not only from a pathologico-anatomical, but also from a etiological point of view. In 160 cases Dietrich found this combination eight times; in some of the cases, cicatrices of the healed ulcers existed unconnected with the cancer; in others the carcinoma appeared to be implanted upon an old ulcer. Waldeyer speaks of quite superficial nodules with an indurated, slightly granular, ulcerated base, which were with difficulty to be distinguished from simple round ulcers, even with the aid of the microscope; and he comes to the conclusion, "that there is no pathologico-anatomical reason why a process which at first is simply ulcerative may not in time be converted into a cancerous one, if the epithelial elements of the wall of the stomach instead of passively disintegrating, take part in the proliferation of the border of the ulcer." [2]

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Reports of Societies.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-fifth Annual Meeting, held at the Pequot House, New London, Conn., July 17 and 18, 1889.

WEDNESDAY MORNING SESSION.

The Society was called to order by the President, Dr. William F. Norris, of Philadelphia.

The first paper read was

AN ANALYSIS OF NINETY CASES OF SIMPLE CHRONIC GLAUCOMA, WITH SPECIAL REFERENCE TO THE EFFECTS OF IRIDECTOMY UPON THE ACUITY OF VISION AND THE VISUAL FIELD,

by Dr. Charles Steadman Bull, New York.

Detailed histories of the ninety cases were presented and the following conclusions formulated.

In endeavoring to draw some rational conclusions from the study of ninety cases, it seems wise to begin with a quotation from Priestly Smith, to whom ophthalmologists owe so much of their knowledge of the pathogeny and pathology of glaucoma.

(1) In considering the expediency of an operation in chronic glaucoma, he says, "In every case of chronic glaucoma, the responsibility of advising an operation is a heavy one, and should on no account be undertaken without a full explanation to the patient or his friends of the almost positive certainty of blindness on the one hand and of the uncertainties which beset the operation on the other. Having regard to the age of the patient, the impossibility of great benefit, and the possibility of a painful and accelerated progress, the prudent surgeon will only operate on the express desire of the patient to secure the only possible chance of benefit, however small it may be." Armed with the preceding precaution, it seems to be our duty to operate in cases of chronic progressive glaucoma, and the earlier the better.

(2) If the disease in a given case seems to be stationary and is still in the primary stage, and if it be

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[2] Ziemssen's Cyclopædia, vol. vii, p. 236.

possible to test the vision and the visual field at short intervals, delay in operating is permissible; but a weak solution of eserine or pilocarpine should be used daily, merely as an aid in controlling the course of the disease. The examination of these patients should be at short intervals, and should invariably include tests for visual acuity and the careful examination of the visual field.

(3) If the disease exists in both eyes, but with useful vision in both eyes, the eye in which the disease is the more advanced should be operated on without delay; and the surgeon will be guided in his treatment of the fellow-eye by the result of the operation on the first eye.

(4) To insure the best result, the incision should be made well in the sclerotic, with a narrow cataract knife or a broad lance knife; and the entire iris, from one end of the incision to the other, should be carefully torn or excised from its insertion.

(5) The most carefully performed iridectomy by skilful hands is sometimes followed by rapid loss of what sight still remains, sometimes partial, but unfortunately, sometimes total.

(6) A successful result is, in the majority of cases, more likely to follow the operation if it is performed early in the course of the disease; but the maintenance of the existing degree of vision, even in these cases is not invariable.

(7) As regards the question of symmetry, it is probable that in the large majority of cases, probably as much as eighty per cent., the disease is sooner or later present in both eyes; and a careful study of the cases seems to establish the fact that there can be no specific interval of time which insures the second eye against an attack.

(8) If the patient is old and feeble, and one eye is still free from disease for a year or more after the other eye has become affected, it may be considered prudent to avoid an operation on the affected eye, as it is probable that the unaffected eye may remain free during the remainder of the patient's life.

(9) The condition of the field of vision is no constant guide either in forming a prognosis as to the progress of the disease or in deciding as to the time of operation.

(10) The acuity of vision bears no constant relation to either the success or failure of the operation.

(11) The anterior chamber is usually shallow, is occasionally entirely absent, but is often apparently normal in depth. The condition of the chamber gives no reliable hint as to the state of the vision or the visual field nor any indication as to prognosis.

(12) The appearance and motility of the iris appear to have some bearing upon the prognosis, though perhaps not to the extent believed by Nettleship. The latter states that in the cases in which the iris reacts rapidly to eserine the operation proves successful. This has not always been the experience of the reporter, but in the majority of the cases in which eserine caused rapid contraction of the pupil, the visual acuity was fairly good and the field was not seriously limited.

(13) The depth of the excavation in and the color of the optic disc seem to have no close connection with the defective vision or with the limitation of the visual field, nor did they offer any constant guide as to prognosis or to the effect of an operation upon the progress of the disease.

(14) The condition of the intra-ocular tension is a very uncertain guide in deciding the time for operating. It may be normal or increased or even diminished. It does not even seem to bear any constant relation to the degree of visual acuity or to the state of the visual field. The steady maintenance of the increased tension, however, without any diminution, almost invariably indicates the necessity for an immediate operation, and this necessity is as especially indicated if the tension is continually on the increase.

(15) The health and age of the patient exert a decided influence upon the effect of the operation. Any marked evidence of senility is distinctly unfavorable to operation.

DISCUSSION.

Dr. H. Knapp, New York: During the past 19 years I have operated on 670 cases of glaucoma, 226 of which were cases of chronic glaucoma. I think that the prognosis may be a little more favorable than has been indicated by Dr. Bull. I have had four cases in which maglignant disease followed operation for chronic glaucoma. I do not agree with the author as to the advisability of the continued use of pilocarpine or eserine in those chronic cases where operation seems doubtful. I advise its use when there are recurrent symptoms. In prognosis I am guided a great deal by the condition of the iris. My operations have been done with the lance-shaped knife. I consider it of great importance to carefully reduce the edges of the coloboma, not only by external pressure but also by the use of the blunt probe. I am also careful not to make the operation too peripheric. Peripheric wounds are more liable to cystoid scars.

IRIDECTOMY IN GLAUCOMA,

by Dr. Emil Gruening, New York.

The speaker classified the different forms of glaucoma under the following heads: (1) acute inflammatory; (2) chronic inflammatory without visible degenerative changes in the iris; (3) chronic inflammatory glaucoma with visible degenerative changes in the iris; (4) simple glaucoma; (5) intermittent glaucoma, and described cases illustrative of these different varieties.

DISCUSSION.

Dr. S. O. Richey, Washington: I do not believe simple chronic glaucoma to be entirely a local affection. I think that it is a local expression of a cause to be looked for in the nervous system. I have used eserine with satisfaction in the early stages, but support it by galvanism applied to the cervical ganglia. In some cases this will enable us to avoid operation.

Dr. Samuel Theobold, Baltimore: I have met with one case in which an attack of pronounced acute glaucoma was cut short by the use of eserine.

Dr. C. S. Bull, New York: Eserine is frequently used in too strong solution. A solution of half a grain to the ounce may cause iritis after a single instillation. I never use a stronger solution than this. I often use one as weak as one-tenth of a grain to the ounce.

Dr. B. Alexander Randall, Philadelphia: I can confirm the remarks in regard to the value of weak solutions. In one case of severe absolute glaucoma a solution of one-eighth of a grain to the ounce was entirely successful in relieving the pain. It has been used steadily for three years with no recurrence of the severe symptoms, and without the intervention of any inflammatory trouble.

Dr. S. D. Risley, Philadelphia: In experimenting with weak solutions of eserine, I have found that a distinct effect was experienced from a solution as weak as one-thirtieth of a grain to the ounce. If this was applied three times a day, it would in two days cause distinct brow-ache. I have seen benefit from weak solutions where stronger solutions failed to give relief.

Dr. Henry D. Noyes, New York: One point to which my attention was called many years ago is that in certain instances of evident glaucoma with a large amount of refractive error, it has seemed that the aggravation of the glaucomatous disease has been dependent upon the accommodative strain. In operating I have gradually withdrawn from the extremely peripheral place of incision. I prefer to come closer to the border of the cornea than some do. This involves less risk and is easier of performance.

Dr. Samuel Theobald, Baltimore: My experience tends to convince one that astigmatism and particularly astigmatism against the rule, is frequently the cause of glaucoma.

Dr. Arthur Matthewson, Brooklyn: In one case of glaucoma in which iridectomy had been done without arresting the progress of the disease a large ingestion of strychnia caused a decided improvement of vision, which continued. I have used it in other cases with good effect.

THE USE OF THE CURETTE IN ANTERIOR TRACHOMA,

by **Dr. Emil Gruening**, New York.

The speaker after referring to the various measures proposed for the relief of this condition, described an operation which he had employed in eleven eyes during the past two years. A six-per-cent. solution of cocaine was first instilled. The surface of the cornea and the vessels present were then scraped away with a gouge-shaped instrument and the vessels followed well on to the conjunctiva. The eye is then washed with boric-acid solution and warm compresses applied for four or five days. In three cases new vessels formed and the operation was repeated. The ultimate result in all the cases was highly satisfactory. In old and protracted pannus this operation may be recommended for its directness, simplicity and efficacy.

DISCUSSION.

Dr. S. D. St. John, Hartford: I have used this operation in one case with the highly gratifying result of increasing the vision from $\frac{4}{200}$ to $\frac{16}{200}$. This has since still further improved.

Dr. H. F. Hansell, of Philadelphia, read a paper on

CORNEAL ABSCESS,

describing its symptoms, and referring to the differential diagnosis between it and ulcer. He protested against the use of cocaine in abscess or other inflammatory conditions of the cornea. A few drops of strong solution will often destroy the epithelium. Instillation of eserine alternating atropine was recommended. Operative interference should be limited to the evacuation of the pus.

FURTHER OBSERVATIONS ON MALARIAL KERATITIS,

by **Dr. Charles J. Kipp**, Newark.

The author had called attention to this condition in a paper read before the Society in 1880. He had seen one hundred and twenty cases of the disease. In all there had been paroxysms of malarial fever and in ninety per cent. the corneal inflammation followed a few days after a paroxysm. In twenty-five per cent. the patients had suffered from similar trouble in previous attacks of malaria. The inflammation of the cornea occurred in the form of serpiginous ulceration, with narrow prolongations. The trouble began as a line of small grayish elevations, which soon broke down forming a furrow of ulceration. In mild cases the duration is two or three days, while in severe cases it may last several months. There is a marked tendency to recurrence in subsequent attacks of malarial fever. In a few cases he had seen a similar affection in non-malarial individuals. The treatment consists in remedies directed to the general condition and in mild cases with warm fomentations. In severe cases a one-per-cent. or two-per-cent. solution of nitrate of silver applied directly to the furrows after the use of cocaine answers well. In some very severe cases the actual cautery was employed. This arrested the progress of the disease and stopped the pain, provided the malarial trouble had previously been cured.

DISCUSSION.

Dr. Henry D. Noyes, New York: During the past fifteen or twenty years, I have met with cases of superficial keratitis due to malaria. It is rare to find the deeper tissues invaded. I am led to suspect a malarial origin in cases where there is exaggerated tenderness of the supra-orbital nerve and distinct anæsthesia of the surface of the cornea. The form of ulcerative keratitis which has been described I regard as of mycotic origin and have cured it by scraping thoroughly the lines of infiltration.

Dr. T. Y. Sutphen, Newark: I have seen cases similar to those described by Dr. Kipp in patients suffering with malaria and where there has been no distinct chill; the individuals have resided in malarious districts.

Dr. John Green, St. Louis: I have seen many cases in which malarial fever was followed by superficial keratitis or keratitis modified by neglect or improper treatment. I have not met with the form described by Dr. Kipp.

Dr. Emil Gruening, New York: I have seen this form of ulcerative keratitis but I have associated it with the teeth. These patients have had tartar on the teeth and have been in the habit of moistening the lips with saliva. I think, therefore, that the source of infection is in the mouth.

Dr. Samuel Theobald, Baltimore: I have also seen for many years this keratitis associated with malarial trouble. These cases do not always show ulceration of the cornea. I have in a general way regarded this condition as analogous to herpes zoster. I have once or twice seen iritis associated with the keratitis following malaria. In one case of malaria I have seen this keratitis with herpes zoster of the temple.

IRRIGATION OF THE ANTERIOR CHAMBER,

by **Dr. J. A. Lippincott**, Pittsburgh.

This procedure is useful for the removal of débris in cataract extraction and of clotted or liquid blood. In order to accomplish this successfully it is necessary to have an apparatus which can be readily made and kept aseptic; which will always be ready for use; which can be easily handled and the movement controlled with one hand; whose ejecting force is capable of being easily regulated; and which is free from liability of forcing air bubbles into the anterior chamber. As fulfilling these requirements he exhibited an apparatus consisting of a small metal receptacle with which was connected a rubber tube ending in a metal nozzle, the flow of liquid being controlled by a short piston in a rubber handle through which the rubber tube passed. The ejecting force can be varied by elevating or lowering the receptacle.

Dr. Gruening, of New York, exhibited a small flask devised by von Graefe for the same purpose.

Dr. David Webster, of New York, exhibited

TWO SPECIMENS OF SWORDFISHES' EYES.

Dr. Henry D. Noyes, New York, exhibited a

SPECTACLE FRAME

in which the nose-piece of the eye-glass was combined with the ordinary spectacle frame.

ENUCLEATION OF THE EYE IN PAN-OPHTHALMITIS,

by **Dr. Henry D. Noyes**, New York.

There has been reported by various observers thirty or forty deaths following enucleation, almost all from meningitis, about one-half of the fatal cases have occurred after enucleation during acute suppurative panophthalmitis. At the New York Eye and Ear Infirmary there has been no deaths from this cause, when no additional operation in the orbit, such as the removal of tumors, etc., have been done. The number of enucleations, from 1868 to 1888, was 1,164; the number of eviscerations, 17. Pan-ophthalmitis existed is 14 per cent. of the cases. It seems fair to conclude that while a small risk to life is incurred by enucleation of the eye, the supposed increased risk by the existence of suppurative pan-ophthalmitis as not so far justified by the facts as to bar its performance in this condition.

(*To be continued.*)

BOSTON MEDICO-PSYCHOLOGICAL SOCIETY.

PHILIP COOMBS KNAPP, M.D., SECRETARY.

January 17, 1889, **Dr. Cowles** in the chair.

Dr. J. B. Ayer read a paper on

CEREBRAL SYMPTOMS, CONNECTED WITH PHTHISIS.[1]

Dr. H. R. Stedman said that the paper was an interesting study of the affinities between tuberculosis and mental disturbance, as viewed from the standpoint of the tubercular symptoms. The affinity was particularly marked in heredity. Cases of hereditary insanity were often seen in phthisical families. In children the mental trouble was more likely to be delirium.

Dr. Boland thought the mental trouble rather a coincidence, from anæmia, œdema, etc., as we see it in cardiac disease.

Dr. Fisher said that the relation of phthisis and insanity was important, and most writers think it an intimate one from an hereditary point of view. Phthisis usually has the effect of producing nervous diseases and insanity in the second generation. Phthisical insanity was a term used by several writers, especially Skae; but most of Skae's terms were convenient clinically, though incorrect scientifically. He had used the term himself, applying it to cases where advanced phthisis was the sole discoverable cause of the mental condition. The only characteristic is a prolonged and rather active delirium, with or without hallucinations. The condition varies with the physical health. A boy of seventeen, with a phthisical heredity and tuberculosis of both lungs, emaciated, and in a hopeless condition, became so excited and actively delirious as to be sent to the Boston Lunatic Hospital. He had various relapses; but as his physical condition improved, his mental trouble got well. Fatigue, would however, bring on a relapse. Another patient, who had some joint disease and phthisis, had two attacks of delirium before her death. Both had hallucinations of sight and hearing. For such cases phthisical insanity was not a bad term.

Dr. Moulton said that many cases of insanity had a phthisical heredity. It is an important element in causation, and it is not to be lost sight of in prevention. He used the term, which seemed as good as any for certain cases. Many insane patients develop phthisis, which is attended with a clearing up of their mental symptoms.

Dr. E. P. Elliot thought it impossible to rely much on asylum statistics, for a diagnosis from etiology is now out of fashion, and the etiology is always vague. Nevertheless, there was much phthisis in the asylums. There were two sorts of cases: one, where phthisis is developed in the chronic insane, the insanity not being modified by phthisis; the other, where mental trouble comes on after phthisis. There is some similarity between them. Delirium is not common, but they are often chronic cases of vague and not well-systematized delusions of persecution. These are usually termed phthisical insanity. It is useless to set this apart, as it is not confined to phthisis, but it is seen in any patient with debilitating disease, cancer, cirrhosis, or alcoholism.

Dr. Cowles said that phthisical insanity always seemed a faulty term, showing the unsatisfactory nature of the etiology of insanity. If there is a direct etiological relation between phthisis and insanity, why is there so little insanity with so much phthisis? There are two forms in which the etiology is traced. One by heredity, which is not direct. Phthisical parents have defective offspring, but they are not always insane. Phthisical persons have a weak and unstable heredity. Such cases are prone to mental disturbance with physical debility, which gives a reason for the association of insanity with phthisis. Being defective, the patient has phthisis. We ought to see more insanity among the phthisical than we do. Phthisis and insanity in a single person shows the unsatisfactory character of the etiology of all forms of insanity. If there were a relation, it ought to be in a characteristic form. Insanity, on the whole, is of an asthenic type. There were only two cases at the McLean Asylum. One lady with advanced phthisis, was melancholy, depressed, tearful, agitated and slightly suicidal. She had an exacerbation of the phthisis with fever, and in it got better mentally. At first there was a poor brain nutrition, but the fever caused cerebral congestion, and thus improved the nutrition. Another lady with mild melancholia and phthisis, grew worse, had hectic, and got better mentally. Toward the close she showed considerable mental activity, painted in water-colors and had the spes phthisica. It was hardly correct to use the term phthisical insanity, except to show that phthisis co-exists, for there is so much phthisis and so little insanity.

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[1] See page 128 of the Journal.

Dr. Ayer said that his percentage of mental disturbances was large as compared with ordinary experience. That was perhaps because at the Channing Home the patients were constantly associated with the matron and the attendants, and there was an excellent opportunity to study slight mental changes.

NEW HAMPSHIRE MEDICAL SOCIETY.

Report of the Ninety-ninth Annual Session held at Concord, N. H., June 17 and 18, 1889.

Dr. A. P. Chesley, of Concord, read a paper on

PHYSICAL CULTURE.

Dr. M. W. Russell, of Concord, made a

REPORT ON SURGERY.

After giving three cases of punctured wounds, where the general treatment was free incision to the bottom of the wound, and tobacco and flaxseed poultices applied to the wound, he said: The members of this Society who attended the lectures of the late Dr. Dixi Crosby will remember the importance which he attached to freely incising to the bottom all punctured wounds, in order to prevent tetanus. He claimed excellent results from this mode of treatment. In treating these cases, I introduce the knife a little to one side of the wound and carry it as deep or a little deeper than the instrument penetrated, and then cut outwards freely. I should do this even at the risk of dividing the plantar or palmar arch, if the injury was in the neighborhood of these vessels; as I firmly believe that the advantages of the operation infinitely outweigh the damages of this accident. I have great confidence in the tobacco poultice in these cases. It seems to act as a sedative, removing the irritation of the peripheral nerves.

Another case, of "a slight injury to the distal extremity of the finger of a healthy person," was followed at the end of twenty-four hours by pain and by tonic contraction of all the fingers of the injured hand. Pain more or less severe, and swelling of the hand, were symptoms which characterized the next four days; but there was so little inflammation at the seat of the injury that a free incision healed firmly by first intention. On the fifth and sixth days the pain was much less, and the swelling diminished? Then, suddenly, without apparent cause, the pain became intense, and mortification ensued within fourteen hours. What produced the obstruction to the arterial circulation which resulted in gangrene? In what way did the slight wound of the distal end of the finger cause suppuration in the hand? Were all the symptoms the result of injury to a nerve?

A male patient was admitted to the hospital January 21, 1889. About three weeks previous to his admission he was struck upon the dorsal aspect of the ring finger of the left hand by the sharp edge of a hatchet, which inflicted a flesh wound only. This was followed by inflammation and extensive swelling, and later by suppuration in the hand and finger. Previous to his admission, the back of the hand had been freely incised, and pus had discharged freely. At the time of his admission a large pocket of pus in the palm of his hand was opened. At this time the original wound was not healed, and its edges were swollen, excited and ragged. The whole hand was badly swollen and had an erysipelatous blush. January 23d, the finger was amputated at the metacarpo-phalangeal articulation. The first phalanx was entirely denuded of periosteum, and so softened as to easily break in pieces. The bone gave no evidence that it was injured by the blow. After the operation the swelling subsided rapidly, but suppuration kept up for two weeks. The wound healed as readily as could be expected, and the patient was discharged well, February 10, 1889. This patient was a robust and apparently healthy man, and the wound was comparatively a small one made by a sharp instrument. It was such a wound as we should expect to heal fully in a week. Instead of this, necrosis of the bone set in and abscess of the hand resulted.

The importance of the early removal of cancerous growths is now acknowleged by a larger part of the medical profession. It is most probable, if the fact has not been positively demonstrated, that the spread of the disease to other parts and the formation of accessory foci is due to the carrying of granules detached from the parent cell to surrounding or even distant tissues. I believe that all tumors, the nature of which is at all in doubt, should be removed at once, if they are in a position which permits their removal, and further that the operation should be thorough and radical. I think it is a fact that tumors which are at the beginning free from any taint of malignancy, may at a later period become the seat of a malignant growth. It is not consistent with our knowledge of carcinoma to suppose that these growths are cancerous at the beginning. It is much more probable that they furnish a structure peculiarly adapted to the development of cancerous tissue. It is an important question whether the early removal of these tumors might not have prevented entirely the development of cancer in the patient.

Dr. J. J. Berry, of Portsmouth: The method of treating punctured wounds, as described in the paper, I should consider a very effective and proper one. If I had reason to believe, in a given case, that the wound contained septic or other foreign material, or that much internal laceration existed, I should follow the methods advocated in this paper. In other cases, however, I should feel inclined to wait a little before enlarging the wound and increasing the area of granulating surface.

Dr. G. P. Conn, of Concord, read a paper on the

DISPOSAL OF GARBAGE.

The disposal of garbage in our small towns and cities is not a question of special importance, but in populous places the problem of what shall be done with the waste from the household is found to be of importance second to none other. Fortunately, in New Hampshire we have but few towns and cities so populous or so crowded as to require the attention given to places reckoning their population by hundreds of thousands. But the crowding of our summer hotels and camp-grounds, unless properly guarded and protected against unsanitary conditions, cannot but become a source of unhealthfulness, probably of infectious disease; and it is to this that I desire to call the attention of the physician. Many of these places have fairly outgrown the expectations of their projectors, and therefore little or no thought has been taken of what to do with the drainage, garbage or waste products, and at none of them has there been any adequate provision made for the disposal of the waste and garbage incident to such crowds.

It is apparent that this problem is growing year after year in New Hampshire; and, as all of us have under our care families who spend days, weeks or months at such resorts, we should warn them of the care necessary to protect their health.

I would be glad if I could bring before you some definite plan that would be inexpensive, but entirely satisfactory in its manner of dealing with the disposal of garbage and other waste matter. But while experts are examining into the merits of various methods, no one has, as yet, solved the problem.

To the profession is granted the high privilege of being teacher and adviser, and our power for good and for evil is very extensive. In matters like this, whenever the public seriously demand reform, the work is, in some way, accomplished. When the people of a town or city are a unit upon any question there is no trouble in bringing about the necessary means to complete the work. So it will be in the future disposal of garbage; and it behooves the profession to be leaders in public opinion, rather than to follow in the wake of others. We should encourage the public in making the best use of our present means and to hope for something better within a reasonable period.

Dr. Child: I understand that near Boston there has been a furnace built, and men go round and gather up every piece of pie, scrap of biscuit, crust of bread, etc., and put it into this furnace and thoroughly dry it. I do not know the exact process, but we can readily imagine it. After being thoroughly dried, it is placed in flour barrels and sent into the country for hens' food, etc. It makes a perfectly healthy food, so far as I can see. I believe this will be one way of disposing of garbage.

Dr. Robert Burns, of Plymouth, read a paper on

THE USE OF ANTISEPTICS BY COUNTRY SURGEONS.

The surgeon of the city, with all his expensive appliances and machinery and skilled assistance, may find the aseptic method of treating wounds practicable; but the country practitioner, who must forego those aids, and who finds his patients oftentimes in anything but aseptic surroundings, must resort to other and simpler methods.

All my surgical instruments and dressings are carried in one small hand-bag. I have carbolic acid, tablets of corrosive sublimate and iodoform. Needles, knife-blades and other small instruments are kept in a 1 : 60 carbolic-glycerine solution. After using and cleansing, they are put back into this solution, and thus are always ready for immediate use. Other large instruments are put into a 1 : 40 carbolic solution some time before needing them. My bag contains silk on a reel, and drainage-tubing, both in a 1 : 4000 solution of corrosive sublimate. Sterilized sponges are carried in a 1 : 1000 corrosive-sublimate solution, and suitable pieces of oiled silk are put in the same, some time before using.

After the flesh adjacent to the wound has been thoroughly washed, both skin and raw surface are bathed in a corrosive-sublimate solution, the strength varying between 1 : 1000 and 1 : 5000, in inverse proportion to the extent of the raw surface. After the incisions are completed, the cut surfaces are washed for a considerable length of time in a 1 : 4000 corrosive-sublimate solution, hot enough to check bleeding, to blanch tissue, and to render the parts thoroughly aseptic.

For ligature I use silk, and cut the ends short. If the wound is a large one and necessitates the use of a drainage-tube, I do not think that it makes much difference whether or no the ligatures are cut short. But if the wound be small, if there be no drainage-tube, or if it be early removed, I consider that the long ends of the ligatures prevent absolute healing in a short space of time. These short silk ligatures either become absorbed or encapsuled. They give me no trouble, and I get healing by first intention through the full extent of the wound, which is not closed until every particle of oozing blood has ceased. For healing, I depend largely on the most careful and accurate approximation of the parts.

After the wound is closed, and thoroughly washed with a 1 : 4000 corrosive solution, iodoform is used freely, as wounds seem to heal more kindly with it than without it. After this a piece of sterilized oiled silk large enough to cover the wound is applied. This is used for two purposes: to prevent the sticking of the dressings, and to keep the plasters which cannot be rendered aseptic from contact with the wound. Over this is placed several layers of sublimate or carbolic gauze, then a large piece of oiled silk to cover the whole, which is bandaged in the ordinary way. Subsequent dressings I do, if possible, myself, and make them as few and far between as may be. On redressing, the wound is generally found to be so clean that the usual washing is simply a process of dampening with an antiseptic solution.

Since I began the constant and systematic use of antiseptics, I have seen most cases heal without a drop of pus. In simple amputation I have come to expect healing by first intention, except around the drainage-tube, and solid healing by from twenty-one to twenty-eight days after operation. As a rule I greatly prefer the action of corrosive sublimate to that of carbolic acid as an antiseptic. But if I know of the existence of albuminuria, or suspect any latent tendency to disease or congestion of the kidneys I am very careful to avoid it.

It will be seen that my method is exceedingly simple, so simple that it would hardly be a matter of interest except for the fact that its very simplicity makes it practicable, and this especially adapts it to the unassisted country surgeon. It is now something over two years since I have seen a touch of surgical fever in my own practice, and in uncomplicated surgical cases, I have rarely seen a temperature above 100°. I now get healing of large cut surfaces by first intention as a rule, formerly it was the exception.

Dr. W. B. Porter, of Walpole, read a paper on

PNEUMONIA: ITS MORTALITY AND THERAPEUTICS.

For patients in the sthenic condition, the first remedy given by the highest German, French and American authorities is the use of cold-water compresses over the chest, or packing the whole body in cold packs. With patients of asthenic diatheses, I use hot-water compresses saturated with turpentine. In both classes of patients, if the tongue is coated, indicating some constitutional disturbance, I use mild aperients of some kind to act upon the hepatic and other secretory vessels. I often use a pill from Dr. Whitbeck's formula, as follows, with the very best results:

Podophyllin	1-4 grain.
Aloin	1-6 "
Capsicum	1-10 "
Nux vomica	1-10 "
Extract belladonna	1-10 "
Oleum tiglii	1-20 "

I give the pill once every three hours until the bowels move. If a periodicity occurs in the fever, I give a few grains of quinine at short intervals.

In our next visit, we find the second stage developing. The physical signs are all much worse, increased engorgement, vesicular murmur destroyed, loud and full bronchial respiration, mucus râles, crepitation, high temperature, rapid and tremulous pulse, respiration forty per minute, with dyspnœa and marked bilious complications. I resort to calomel. I lay out four or five powders from ten to fifteen grains, with five to ten grains of Dover or Tully powder, and order the nurse to give one every four hours. I repeat until I get the specific effect upon the liver and bowels.

At this stage, I change the wet compresses for counter irritation, then apply a warm poultice over the irritated surface, still using the febrifuge spoken of before, and in some cases, using aconite instead of digitalis, which might be unsafe to use on account of cardiac conditions. Mucilaginous drinks, together with expectorants, are required to moisten the tissues, and empty the bronchial cells of their purulent deposit. If the patient is suffering from prostration, stimulants and tonics are required.

I am not in favor of the use of antipyretics in large doses. I use them in small doses to quiet nervous excitement. In vigorous, full-blooded persons, with a temperature of 105°, pulse 120, lungs engorged, intense pain, great dyspnœa, threatened suffocation, I would open a vein in the arm or temporal artery, and should collateral œdema occur in portions of the lungs not congested, endangering life, I would bleed. Then if the pressure of blood caused brain symptoms, coma, and transient paralysis, I would use the lancet to prevent brain lesions and sudden death.

Dr. Thos. Hiland, of Concord: I believe that less dosing and more taking care of your patient will give you a better result in pneumonia than to try to dose him every hour or two hours. No doubt Dr. Porter's cases do well under his treatment: but his cases do well or not in spite of a good deal of the treatment. I do not care who has charge of a patient of ten, fourteen, fifteen, or sixteen years of age, if you will give him half a chance, he will get well of ordinary pneumonia; but the old, the feeble, the young child, the person who has been on a debauch, these are apt to die; and there is no use in dosing them to death.

Dr. M. C. Lathrop, of Dover: I have never in all my practice, heard of a case where bleeding has been resorted to in pneumonia. There may be cases where I should do it myself but I have never done it.

Dr. William Child, of New Hampton, read a paper on

THE USE AND ABUSE OF NARCOTICS AND ALCOHOLICS,

which was written in the humorous vein so characteristic of the author. In closing, he said: I have presented this theme to direct your attention to what we cannot ignore. We must aid in advancing these questions of reform, not by denunciation, intrigues, and harangues; but by a common-sense examination and discussion, holding to the proper use but restraining the abuse of any and all good gifts from the Creator. I am sure that a higher and better education will bring about the needed reform. I cannot see that we should demand the annihilation of narcotics and alcoholics.

Dr. D. S. Adams, of Manchester: The medicinal use of alcohol, I fully believe in. We cannot come more fairly to a decision as to when to use it, than to look over "Pepper's System of Medicine." This is written by American authorities, and the general opinion therein contained would be the American idea. In looking over that work, I find that alcohol is recommended in twenty-nine different diseases only. I was a little surprised to find that in twenty-two of these diseases, it was recommended for almost the same symptom or condition of the system (depression of the heart's action).

Dr. E. W. Cushing, of Boston, addressed the Society on the subject of the

DIAGNOSIS OF PELVIC TUMORS.

Recent Literature.

An Elementary Treatise on Human Anatomy. By Joseph Leidy, M.D., LL.D., etc. Second edition, rewritten, with four hundred and ninety-five Illustrations. Philadelphia: J. B. Lippincott Company. 1889.

This second edition of Professor Leidy's well-known work is to all intents and purposes a new book by the leader of American anatomists. The learned author implies in his preface that it is not meant to be of the same scope as the great English anatomies. It is an elementary treatise, and we gather that it is essentially a report of Dr. Leidy's course at the University of Pennsylvania. This surmise adds greatly to the interest with which we review the book. From the fact that the treatise is an elementary one, it follows that many matters of detail must be omitted, and to omit judiciously is one of the most important attributes of a teacher. We find also that the author has departed from the usual order of presenting the different divisions of the subject, and that he has accepted some modifications of the established nomenclature.

As to the order of the work, the microscopic anatomy is scattered throughout the book in a way that mars the unity of treatment of that branch. Thus the minute structure of bone comes at the beginning, while that of cartilage comes with the so-called connective tissues, just before the muscular system. Surely bone is in structure one of this group, and should not be artificially separated from the rest. Many of the illustrations of the tissues are decidedly diagrammatic, and rather suggestive of black-board sketches. We think the author has shown good judgment in the amount of space given to histology. He has given what is absolutely essential for a course of lectures on anatomy, and, from this point of view, we praise omissions and summary descriptions which could not be permitted in a treatise on histology.

The bones and joints are taken together, an excellent plan in our opinion; then comes the muscular system; then the alimentary apparatus; which is followed by the vascular system; then comes the other viscera; and finally the nervous system and the organs of special sense. There are obvious reasons why the method of English anatomists in putting the vessels and nerves before the viscera should be abandoned. It is, to say the least, unsatisfactory to describe the arteries of the duodenum to students still in happy ignorance of the shape and position of that difficult organ. Therefore, we see good reasons why the alimentary apparatus should precede the vessels and nerves, but we do not see why all the other viscera should not do so likewise.

The descriptions of the bones are strong, clear and concise, not overburdened with details. In some of the bones of the skull, especially the temporal, the author allows himself freer play, and the result is admirable. The account of the sphenoidal spongy bones is the only one we call to mind which is at once comprehensive and clear. We regret that we cannot speak with equal praise, or indeed with praise at all, of the treatment of the joints. It is wanting both in accuracy and in thoroughness. To define rotation as "the motion made by a bone when it rolls on its axis" and to add, for an illustration, "as in the movements of the radius upon the ulna," is misleading. The following account of the movements of the ribs is most unsatisfactory: "The chief movement of the thorax, as in breathing, consists in partial rotation of the ribs on their axis, up and down, where they articulate with the vertebræ, facilitated by somewhat similar motion in the costo-sternal articulations. In the movement, the ribs are alternately raised and depressed from their fore part." We doubt if the student will understand what is meant by the axis of the rib, and would submit, moreover, that the motion of the longer ribs on an anterio-posterior axis is a secondary factor of importance, to say nothing of the free movement of the last two ribs. We are told that, "in the ordinary opening and closing of the mouth, the condyles of the lower jaw rotate on their long axis within the glenoid fossa." One has only to put one's finger on the head of the jaw, and open the mouth, to find that the former moves forward and downward; but it would stay in place if it rotated on its axis.

The section devoted to muscles is very good, though now and then we wish that a little more had been said of their actions. This is the natural place to discuss the changes in nomenclature which Professor Leidy had adopted, for these changes are more striking in the muscular system than elsewhere. As he states in the preface, he has not attempted a radical change, which he justly believes would be more confusing than profitable, but has tried to use simple names, and to change them as far as possible into English. We think he has been very successful; but we believe he would have been still more so had he used out-and-out English words instead of hybrid Latin and English composites. As an example, he has simplified the *extensor ossis metacarpi pollicis*, the *extensor primi internodii pollicis* and *the extensor secundi internodii pollicis* into the "first, second and third pollical extensors" respectively, which is a decided gain; but we submit that it would have been far better to have called them the "first, second and third extensors of the thumb." The *peroneus longus* becomes the "long peroneal," but by a strange inconsistency the *tibialis anticus* is the "anterior tibialis," instead of the "anterior tibial." Worst of all, is the "terete," which had much better have been the "round" pronator. These blemishes appear to be owing to the author not having sufficiently adhered to the wise plan he had proposed. A change which seems to us unfortunate is to turn the *lobus Spigelii* of the liver into the "caudate lobe," as the latter term is usually applied to what is here called the isthmus.

We must pass on more rapidly. We are glad to find the muscles of the tongue, the palate and the eye described in connection with these organs. The vascular system calls for no special notice. The treatment of the brain is very satisfactory. The veteran teacher of anatomy has shown the result of his experience in giving just enough, and in given it well. The same may be said of the chapters on the organs of sense.

The illustrations are of varying merit, but in the main hardly as good as the book deserves. The bones of the carpus and tarsus. as well as the ossicles of the ear, should be larger, and the same may be said of the illustrations of the convolutions, which would gain much by greater size. We must remark, by the way, that it is to be regretted that one of the brains chosen to show the convolutions should present decidedly uncommon features.

The book, in spite of some shortcomings, is an admirable one for the purpose the distinguished author had in view. It is, to be sure, less complete than the ambitious and interested student would wish, but it is just the thing for the great mass of students. It is clear; it is, with some exceptions, sufficiently accurate; and it is of convenient size, with good type and paper.

T. D.

Φυσιολογικαὶ Πραγματέιαι ὑπὸ τοῦ τῆς συνόλου ἰατρικῆς διδάκτορος ἐπιτίμου ταύτης καθηγητοῦ διαφορῶν ἐπιστημόνων τε και φιλολόγων, ἑταιρίων τε καὶ σολλόγων ἡμεδαπῶν τε καὶ ἀλλοδαπῶν ἐπιτίμου μελους ἢ προεδρου, της ἀυτου Α. μεγαλειότητος τοῦ Σουλτάνου ἀρχιάτρου, κ. τ. λ. Σπυριδωνος τοῦ Μαυρογενους.

Εν Παρισιοις, *ἐκ τῆς τυπογραφιας, "ο ἀστήρ."*

The universality of medical and physiological science receives a new exemplification when we take up a book like this, founded on researches of French and German physiologists, written by a Turk, published in the Greek language, and printed at Paris. The volume in hand is one of over 317 pages, and is written by Dr. Maurogenos, (a name which seems from its composition to imply a still furthur extension of the cosmopolitan make-up, already referred to in the book), the physician-in-chief to the Sultan. It treats of several subjects: first, of the differences between the sexes, as to size, the appearance of the tissues and the blood, the strength, development and longevity, the performance of functions, mental activity, etc. The closing sentence only of this section reveals an occidental conservatism and a mournful lack of responsiveness to the social advancement of the western world, when he says, with a warm exclamation, *Πρὸς Διός!* "let men be men and women be women!" A section on life and soul, and their relations to each other follows with considerations of a physiological and psychological nature, and the last half of the book is occupied with observations upon sleep, wakefulness, and on the phenomena of sleep, dreams, somnambulism, etc.

— The tooth-pick mills of Maine have mostly shut down, says the *Druggist Circular*, on account of overproduction and inability to dispose of their stock. An important outlet for the lumber product seems to be thus cut off.

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THE UNICITY OF BRIGHT'S DISEASE.[1] — II.

IN 1870, Klebs of Prague, showed that in scarlatinous nephritis the lesions begin and predominate in the Malpighian glomerules. This notion being seized upon and given extension by other pathologists, the conception became gradually formulated, and is coming to be more and more verified, that glomerulitis is the initial lesion of all the nephrites with albuminuria, whatever may be the infectious, toxic, or other cause of these nephrites. The unicist doctrine of Bright's disease is based on this notion.

In 1879, appeared the important memoir of Bamberger.[2] According to his researches, the microscope always shows an interstitial hyperplasia in connection with the parenchymatous inflammation of the tubuli. The connective tissue hyperplasia is not, it is true, generalized, as in the small red kidney, but localized in spots here and there, with thickening of the interstitial tissue and multiplication of the nuclei. Bamberger does not believe that pathological histology justifies the distinction between the large white kidney and the small red kidney. Klebs had shown that an interstitial glomerulitis, with round-cell proliferation and obliteration of the vascular tuft, is the starting-point of lesions which end finally in parenchymatous degeneration. Bamberger's histological researches and his clinical observations point to the same conclusions: the two distinct types of the disease may exist, but mixed forms are frequent in all degrees, and are often accompanied with amyloid degeneration. He has seen cases where the symptoms — insidious onset, frequent micturition, etc. — had led him to diagnosticate during life a granular kidney, and where the autopsy revealed the lesions of chronic parenchymatous nephritis. Again, he had seen other cases whose history and whose course were those of parenchymatous nephritis, yet the patient lived many years, and the autopsy showed the small contracted kidney.

From Bamberger's experience, then, it would appear that no more than histology, can clinical observation enable one absolutely to distinguish the two forms, the one from the other, and the small red kidney might well be what Bright and Frerichs thought it was — the last term of a process not differing essentially from that which leads to the formation of a tubular or parenchymatous nephritis.

Weigert's valuable memoir on Bright's disease also appeared in 1879.[3] The capital point which he endeavors to enforce is that it is impossible to maintain the histological differences which characterize the traditional scheme of the large white kidney and the small red kidney. It is a mistake to say that in the large white kidney the tubuli are alone altered, that there is no connective tissue proliferation, or that, if this exists, it is accessory and little marked. It is a mistake to assert that in interstitial nephritis, the intertubular spaces, enlarged and infiltrated with nuclei, circumscribe normal epitheliums. As well in the contracted kidney as in the white kidney, the alterations pertain both to the canaliculi and to the connective tissue. Even in the acute forms, the accumulation of round cells in the intertubular spaces, in masses more or less extensive, and the atrophy in places of the canaliculi, are the rule. The lighter the renal affection, the less marked are these interstitial lesions; the more violent the inflammation, the more extensive the connective tissue proliferation. In the chronic forms of the large white kidney, not only are masses of embryonal cells met with in the interstitial tissues, as many writers have noticed, but there is organization and thickening. Bowman's capsules are transformed into fibroid tissue, and their glomeruli have undergone different degrees of degeneration, and the arteries have suffered degenerative changes. The differences then, which the kidneys in Bright's disease present, from the large white kidney to the small red kidney, have nothing about them which is essential; it is only a question of degree. It is the acuteness, the extent, the profundity of the alterations rather than their histological characters in themselves, which create the variable aspects of the organs. The existence of amyloid degeneration changes nothing as to the nature of the process, which is that of an inflammation with tendency toward atrophy. Nor do the lesions differ more in the small white kidney and the small red kidney. If, as has been said, the granulations are larger in the former, it is because there is more normal tissue left, and the atrophy is less pronounced. The small red kidney represents only a more advanced degree of the atrophic process than the small white kidney.

If the lesions are the same, why the difference of coloration between the white and red kidneys? Weigert attributes the yellowish white color of the kidneys to fatty degeneration of the epitheliums and the more or less general anæmia of the organ. The steatosis is due either to the poison itself which has caused the nephritis, and which acts directly on the cell, or to the insufficient afflux of oxygen or of blood necessary for the nutrition of the epithelium, by reason of the impairment of the local circulation. As for this impairment of the circulation, it depends on local and general causes. The local causes are the alterations of the walls of the blood-vessels (as in amyloid infiltration), the destruction of the glomeruli, the accumulation of cells in the intertubular tissue, lastly, the interstitial œdema, inflammatory or dropsical, which gives to the cortical substance of the large white kidney a sort of aqueous consistency.

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[1] Continued from page 96 of the Journal.

[2] Volkmann's Sammlung Klin. Vortrage, 1879, p. 1533. We have in this exposition closely followed the admirable summary of Lecorché and Talamon (Traite d'Albuminurie, etc.).

[3] Weigert. Volkmann's Sammlung, 1879, Nos. 162, 163. We have followed the citations of Lecorché and Talamon.

To these local conditions, which unite to impede and slow the blood current so as to render the kidney almost exsanguinated, is added a more general cause — the lowering of the arterial tension, and the failure of the heart to undergo hypertrophy. In the chronic forms with extremely slow evolution, where the heart has time to hypertrophy, this hypertrophy compensates the effects of the local impediments which oppose the capillary circulation, and remedies the renal anæmia; whence the red coloration of the small atrophied kidney. According to Weigert, then, the small white kidney is distinguished from the small red kidney, solely by the anæmia which accompanies the interstitial inflammatory process. When the local circulatory troubles are but little pronounced, and develop slowly, it is the small red kidney which we observe.

As for the relations which exist between the epithelial lesions and the connective tissue proliferation, Weigert does not admit the notion of a primary interstitial inflammation compressing and producing atrophy of the canaliculi. The epithelium is the part first diseased; its atrophy or its destruction is the consequence of a nutrition insufficient by reason of the local impairment of the circulation, whether this impairment be due to alteration of the vessels of the glomeruli, to arterio-sclerosis, or to amyloid degeneration of the small arteries. This epithelial degeneration may exist alone for a longer or shorter time; but in virtue of this general law, which is as true for the kidneys as for all other organs, to wit: that *wherever the epithelium or the parenchyma of an organ is destroyed, connective tissue tends to take the place of the elements which have perished*, it is not long before nuclei and round connective tissue-cells make their appearance around the altered canaliculi, and the process completes itself in the progressive substitution of this tissue of new formation for the elements of the parenchyma destroyed.

To sum up, according to the unicist view: Histologically there are no essential differences between the small red kidney and the large mottled or white kidney. The partisans of dualism overlook the intermediate forms, the large red kidney and the small, white granular kidney. Weigert does not pretend that the large white kidney may be transformed into the small red kidney; he says only that between the two extreme forms there exist mixed forms presenting anatomical characters common to both types, and resembling more or less the one or the other type. The distinction between the two forms is an affair of degree and not of species, and when one attempts to trace a definite boundary line between them, this is found to be impossible.

Lecorché and Talamon believe that we must look to etiology for an explanation of the diversity of evolution of the disease and its ever-changing aspects, the agencies provocative of Bright's disease being multiple. They ask: "what rôle have these agents in the development of the renal lesions? Have they a special influence on the direction of the histological process, and do they suffice to explain the deviations?" Here the appeal is made to experimentation, which shows "that whatever may be the cause of the albuminuria, the primary and fundamental lesion is always an alteration of the glomeruli. Rapidly, moreover, and sometimes simultaneously, the other elements of the kidney undergo alteration: blood-vessels, connective tissue, and tubular cells," in short, the interstitial inflammation is always secondary to the epithelial lesions. This, at least, is the result of an investigation of all nephrites of experimental (toxic) origin; and pathological causes, it is believed, cannot act differently from agents of experimentation from the point of view of their primary action. Both classes of causes lead to one of two evolutive varieties of lesions: either the glomerulo-tubulitis is rapid, acute, more or less generalized, or it is slow, chronic, more or less limited. The type of the first variety is the glomerulo-nephritis produced by cantharides-poisoning in large doses; the type of the second is the nephritis consecutive to lead-poisoning in small long-continued doses.

The large white kidney and the small white kidney are nephrites arrested in their evolution, the one at a period quite near its onset, the other at a much later period. Neither the generalized fatty degeneration of the white kidneys, nor the amyloid infiltration of the arteries (causes of the anæmia and the pale color of these organs) are the direct consequences of the primary process of which the kidney is the seat; they are lesions superadded, and this addition is in etiological relation with the general state of the subject in whom the nephritis is developed. It has for its result — in producing a rapid and general disorganization of the renal filter, incompatible with life — an arrest of the natural evolution of the nephritis, and as it is not a consequence of this evolution but a complication, it may surprise the kidney at all periods of its atrophic inflammation. This is why we may find at the autopsy, white kidneys of all dimensions.

The more natural and uninterrupted the evolution, the more the secondary and final lesions of connective tissue sclerosis predominate.

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THE DEATH PENALTY BY ELECTRICITY.

Mr. W. Bourke Cockran, counsel for William Hemmler, who some time since was condemned to death by electricity, in accordance with the provisions of the new law regulating capital punishment in New

York, has raised the objection that the law is unconstitutional, in that the constitution of the State expressly provides that no criminal shall be put to death by means that are "cruel or unusual." Judge Day, of Cayuga County, before whom the argument was made, appointed Mr. Tracy C. Becker, a Buffalo lawyer, as referee to take testimony in the case, and a large number of witnesses including Drs. Alfred L. Loomis and A. D. Rockwell, and Thomas Edison have been examined, while additional experiments have also been made at Mr. Edison's works at Menlo Park. A great deal of conflicting and not a little irrelevent testimony has been offered and received. No decision has as yet been reached in the case; but there is probably little real reason to doubt that a criminal can be deprived of life by means of electricity safely, quickly, and, if not agreeably, at least comfortably and humanely.

There seems to be an idea among the managers of electrical light and other electrical companies that it is not well to have the death penalty associated with electricity — just as some physicians object to its being associated with subcutaneous injections of morphia — and hence the tender zeal for Hemmler's legal rights.

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MEDICAL NOTES.

— A "Congress of Hypnotism" is to be held in Paris. August 8th to 12th.

— Mrs. Mary E. Hanchett, who died recently at Chittenango, N. Y., is said to have been the second woman graduate of an American medical college. She received the degree of doctor of medicine from the Albany Medical College in 1848.

— The sixty-second meeting of German naturalists and physicians will be held at Heidelberg from September 17th to September 23d. One whole day will be devoted to excursions in the neighborhood, and on the evening of September 23d the Castle of Heidelberg will be brilliantly illuminated.

— A correspondent of the *Democrat* of New Orleans, writes that he has been treated for a bite of a mad dog at a Pasteur Institute in the city of Mexico. The institution in question is maintained by the Mexican government, and no charge is made for treatment.

— An attempt at blackmail was recently made against Mr. Malcolm Morris, of London, by a blackmailer named Grandy and a prostitute co-conspirator. They charged Mr. Morris with having, after immoral relations with the female prisoner, broken a promise of marriage made to her, but they were met by Mr. Morris handing them over to the police. It was then ascertained that this was not by any means the first speculation of this sort by the pair, and, notwithstanding the plea of their lawyer, that they had simply mistaken Mr. Morris for some other person, they were "sent up" for five years and eighteen months respectively.

— The *Philadelphia Inquirer* has been re-examining the character of the Schuylkill River, the source of Philadelphia's water-supply, and finds it to be very much contaminated almost all the way from the coal mines to the Fairmount Water Works. It describes it as a huge sewer draining an area inhabited by 250,000 people, before its waters are taken into pipes which supply 1,000,000 persons.

— Mr. Lawson Tait, in an article upon the "Pathological Importance of the Broad Ligament," in the current number of the *Edinburgh Medical Journal*, draws attention to a discovery which he has made which cannot fail to be read with interest in these days. In two churchyards in England; namely, at Romsey, in Hampshire, and at Bunhill Fields, in London, tombstones may be seen, each of which is inscribed with a note descriptive of a detail of treatment that had been adopted during the last illness of the person deceased. These women were presumably sufferers from cystic disease of the uterine adnexa. In the Romsey instance it is recorded that Mary Dawkins "fell asleep" in 1826, aged ninety, after having been tapped for dropsy forty-six times. In the Bunhill Fields case it is said that Dame Mary Page died in 1728, and that she was tapped sixty-six times in sixty-seven months, that two hundred and forty gallons of water were taken away, and that she never repined at her lot or ever feared the operation. Nothing could better show the difference between the treatment then and now than those mortuary clinical records.

— Tcheng-Ki-Tong, a high military mandarin, says the *London Medical Recorder*, has been edifying the world with some remarkable illustrations of the esteem in which native physicians are held in China. One of them having advertised that he had an infallible remedy for curvature of the spine, a hunchback applied to him and asked if he could straighten his back. The doctor undertook to do so, and placed the unfortunate patient on his back on a flat board. He then placed a similar board on his chest and abdomen and loaded it with heavy weights and stones. The result of this novel orthopedic surgery was that the patient was straightened out so effectually that he died on the spot. The quack claimed his fees on the ground that he had kept his promise; the bargain was that he should straighten his patient's back, but nothing had been said about his life! In China, it appears the distinction between physicians and surgeons is more sharply defined than with us, and every man is expected to stick to his own branch of the profession. A rich merchant was struck by an arrow which remained fixed in the wound. The principal surgeon of the place was sent for, and after insisting on pocketing his fee in advance cut off the projecting end of the arrow, leaving the point buried in the patient's body. On being asked to extract it, he said that medical etiquette would not allow him to trespass on a brother practitioner's province; the arrow being inside the body the case was clearly one for a physician! An old

Chinaman gave the following practical advice as to how to find the most eminent doctor in a strange place: "Count the number of ghosts crouching about the doctor's doorsteps; the one most in vogue has always the largest number."

— The Faculty of the College of Physicians and Surgeons of Baltimore held a meeting lately to fill the vacancies created by the deaths of Profs. John S. Lynch and Oscar J. Coskery and the retirement of Prof. A. B. Arnold, who has removed to San Francisco. Prof. Thos. S. Latimer was transferred to the chair of principles and practice of medicine and clinical medicine; Prof. Chas. F. Bevan to the chair of principles and practice of surgery, and clinical surgery; Prof. J. W. Chambers to the chair of operative and clinical surgery, and Prof. George H. Rohé to the chair of obstetrics and hygiene. Prof. Thos. Opie will continue as professor of diseases of women and dean of the faculty. To fill vacancies created by these transfers new professors were elected as follows: Prof. Henry Sewell, of the University of Michigan, to the professorship of physiology; Dr. George J. Preston to the professorship of anatomy, with the diseases of the nervous system as a clinical branch of instruction. Dr. N. G. Keirle was elected as lecturer on legal medicine, in addition to his demonstrations in pathology; Dr. George Thomas as lecturer on diseases of the throat and chest; Dr. G. A. Liebig. Jr., of Johns Hopkins University, lecturer on medical electricity, and Dr. J. H. Branham, demonstrator of anatomy. Drs. L. F. Ankrim, Frank C. Bressler and F. G. Moyer were appointed assistant demonstrators, and Dr. R. G. Davis, prosector of anatomy. Professor Sewell, who comes here from the University of Michigan, is an old Baltimorean, and was for several years demonstrator of biology in Johns Hopkins University. All the other appointees are residents of the city. As an evidence of esteem on the part of his colleagues, Professor Arnold was elected emeritus professor of clinical medicine on his retirement.

BOSTON AND NEW ENGLAND.

— A new cottage hospital is to be built at Quincy, Mass., similar in design to that already existing at Newton.

— The United States Hay Fever Association will hold its sixteenth Annual meeting on the 27th of August, at Bethlehem, N. H.

— Lawrence is to have a new hospital, $10,000 towards the necessary funds for the first building having been provided by Miss Helen C. Bradlee, of Boston, who had previously given $4,000 to the institution.

— "Naphtha habit" among the female employés of rubber-factories is said to be increasing. The inhalation of naphtha-fumes produces a peculiarly agreeable inebriation. Naphtha is used to clean rubber, and is kept in large boilers, to the valve of which the female employés obtain access, and breathe the fumes. The habit was introduced from Germany, and is reported to be chiefly found in the New England States.

— The trustees of the Vermont State Insane Asylum for the insane have decided to build only the south wing of the new building at the present time. The wing will be 384 feet long with an extreme depth of 152 feet and will contain 33 beds in several dormitories and 42 single rooms, making accommodations for 75 patients. It is hoped that the foundation can be completed this fall. For the construction of the south wing there is available $85,000 the remaining $15,000 of the appropriation having been expended on the purchase of land. Completed, the building will probably cost not far from $250,000, with the central administration building, which will be 192 by 64 feet in size, and the north wing. It is calculated that the entire structure will accommodate 400 patients.

NEW YORK.

— Dr. Walter De Forest Day, who has ably filled the position of Sanitary Superintendent of the Health Department since 1873, has been compelled to resign on account of ill health, and Dr. W. A. Ewing has been appointed to the place. Dr. Ewing is well qualified to succeed Dr. Day, having had many years' experience in the department. From 1870 to 1873 he served on the vaccinnating corps and then was appointed assistant sanitary inspector. In 1876 he was promoted to be full sanitary inspector and he served in this capacity for ten years, when he resigued.

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Miscellany.

DELIRIUM IN JAUNDICE.

In the *Illustrated Medical News*, May, 1889, page 149, Mr. Mallam records the case of a married woman aged forty-eight years, who was attacked with pain in abdomen on February 26, 1887. For two days she was kept under morphia, then bromide of potassium and chloral were given. There was much pain over the liver, which was increased in size, and there was pain over the right scapula: slight jaundice came on and the tongue became dry and red. A few days later the jaundice became more marked and she complained of severe headache: delirium also set in. There was no bile in the fæces, and the urine was the color of mahogany. The symptoms grew worse and it was evident that there was obstruction of the common gall-duct. On March 28th, Mr. Reeves was called in, but he did not think it a good case for operating, but on April 5th he was going to make an incision to explore the abdomen, when some bile was noticed in the stools and the operation was postponed. No more bile, however, was passed after this, and there was no improvement in the patient's condition. The delirium still persisted, but on the evening of April 15th she said she felt something go in her head, and her mind very soon became clear, after being more or less delirious for six weeks. On April 23d bile reappeared in the motions, and the patient made a quick recovery. This case is interesting in many ways: First, the long period of delirium caused great anxiety; and, secondly, it shows the value of placing some faith in waiting for nature to assert herself, instead of trusting to the risk of an operation. — *London Medical Recorder.*

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TENTH INTERNATIONAL MEDICAL CONGRESS AT BERLIN, 1890.

Bureau: Berlin NW., Karlstrasse 19.
July 8, 1889.

We, the undersigned, do hereby give notice, that, according to the resolution passed at the Washington meeting September 9, 1887, the Tenth International Medical Congress will be held in Berlin.

The Congress will be opened on the 4th and closed on the 9th day of August, 1890.

Detailed information as to the order of the proceedings will be issued after the meeting of the delegates of the German Medical Faculties and Medical Societies at Heidelberg on the 17th of September in the current year.

Meanwhile, we should feel sincerely obliged if you would kindly make this communication known among your medical circles, and add in the same time our cordial invitation to the Congress.

Von Bergmann,
Virchow,
Waldeyer.

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PREVALENCE OF VENEREAL DISEASES IN THE BRITISH ARMY DURING 1888.

On the motion of Mr. Cavendish Bentinck, M.P., says the *Lancet*, a return was prepared showing (1) the ratio of admissions into hospital and of constantly sick in hospital per 1,000 of strength of troops serving in the United Kingdom during the year 1888; (2) the ratio of admissions into hospital for primary venereal sores and gonorrhœa per 1,000 of strength of the troops at certain large stations in the United Kingdom (formerly under the provisions of the Contagious Diseases Acts) during the year 1888. From this it appears that the ratio per 1,000 of primary syphilis was 93.2, that of secondary syphilis 40.2, and of gonorrhœa 91.1 respectively, making a total ratio of 224.6 per 1,000 of admissions for venereal disease during the year. The ratios of men constantly sick from these diseases were — primary syphilis 8.20, secondary syphilis, 3.92, and gonorrhœa, 6.06 respectively, or a total of 18.19 per 1,000.

Turning to the second part of the return, we find that the ratio of primary sores and gonorrhœa in the districts formerly under the Contagious Diseases Acts varied considerably. The total ratio was 99 per 1,000 of primary venereal sores; 85 per 1,000 of gonorrhœa. The highest ratios are those of Portsmouth, where that of primary sores was 170, and of gonorrhœa 132 per 1,000. The next highest were those of Devonport and Plymouth; primary sores 134, gonorrhœa 109. At Windsor the ratios were 101 and 90. At Shorncliffe and Colchester the ratio of primary sores was the same, 97; the ratio of gonorrhœa was in the former place 56, in the latter 107. At Winchester, primary sores were in the ratio of 39, and gonorrhœa 73; at Canterbury, 87 and 79; in Cork, 68 and 98; at the Curragh, 55 and 57. At Maidstone there were no primary sores; gonorrhœa was at the ratio of 46 per 1,000.

It has been often said that statistics can be made to prove anything, but this cannot be said of such returns as these, which are simply a summary of facts which cannot be gainsaid. It is a serious reflection, remarks our contemporary, that out of every 1000 admissions into hospital last year, 225, or more than one-fourth were for venereal diseases. It is still more serious to realize the fact that since the Acts were repealed the ratios have much increased, being in fact, double and treble those of former years when the Acts were in force, and diseased prostitutes were sent to hospital till they were cured, instead of being permitted, as they now are, to spread these diseases broadcast.

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MORPHINE-VASELINE AS A LOCAL APPLICATION IN CANCER.

Morphine combined with vaseline forms one of the best possible sedative applications in cases of external malignant disease, in which there is ulcerative breach of surface with continuous pain, says the writer of *The Asclepiad.* The mode of prescribing the preparation runs as follows: —

Vaseline, pure	ʒj
Chloroform	ʒij
Morphine gr.	iv.

Mix thoroughly, and make into an ointment.

By using the chloroform a larger quantity of morphine can be introduced than if the alkaloid were used alone, the distribution through the mass being more complete. The chloroform, in the proportions named, causes, as a rule, no irritation, but acts rather as a sedative. Chloroform also is a powerful antiseptic, and as such is a good remedy in the class of case under consideration.

Morphine-vaseline is most conveniently applied thinly spread over a piece of fine lint or soft linen. It is easily removable without injury to the surface upon which it is applied, and it may, therefore, be used even on surfaces from which the danger of hæmorrhage is foreseen. The dressing may be renewed twice in the course of twenty-four hours.

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DRAINAGE IN GANGRENE OF THE LUNG.

The *London Medical Recorder*, July 20th, quotes from the *Rivista Clinica*, of May, preceding, the report for a case by Malagola, in which a gangrenous lung was incised and drained successfully. A patient was admitted with intermittent fever, symptoms of gangrene of the lung supervening. As the patient was getting worse and no treatment was of any avail, intrapulmonary injections of various antiseptics were tried. The patient's state, however, became daily worse, and Dr. Moutalti determined to introduce a drainage-tube into the lung. Dr. Malagola made the incision in the intercostal space immediately under the right nipple. The drainage-tube, two millimètres in diameter, was introduced for five centimèters, and every three hours it was washed out with a five per cent. solution of carbolic acid. As this caused violent cough and vomiting, sublimate solution ($\frac{1}{2}$ per 1000) was substituted. This was well borne and caused but little cough. The improvement was immediate, all the severe respiratory and circulatory phenomena diminished rapidly, and the general health of the patient rapidly gained. The drainage-tube after the fourth day showed a tendency to be expelled; it was gradually shortened and taken out finally on the nineteenth day. The patient was admitted on June 29th, and left the hospital quite well on September 15th. There was distinct falling in of the chest-wall on the operated side between the clavicle and nipple.

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THE VENOM OF SNAKES.

The venom of the rattlesnake has been frequently made the subject of study, and, while its action as a poison has been generally conceded, some writers have endeavored to prove its efficacy as a drug. Surg. L. A. Waddell, M.B., as we learn from the *Lancet*, has recently been availing himself of his opportunities as a deputy sanitary commissioner in Bengal to determine a point around which it would seem that much uncertainty existed, — the curious question of the effect of serpent venom on the serpents themselves. In a paper he has published he quotes the contradictory conclusions arrived at by previous experimenters, and endeavors to show that, from the accounts of the experiments, it by no means followed that death, when it occurred, was the result of auto-toxic action. Accordingly, he felt that the question was still open, and proceeded to some very interesting investigations, conducted under different conditions of temperature and season, verifying his results by control experiments upon other animals and by post-mortem examination of the snakes he employed. In every case the fresh venom was injected into the cobra with an ordinary hypodermic syringe; the serpents operated upon were all healthy, and had recently been caught; the snakes were kept under observation from nine to fifteen days subsequently, and were then killed. The experiments generally confirm and extend the principle formulated by Fontana in 1765, that the venom is neither a poison to the snake itself nor to those of its own species. This immunity is not to be explained upon the mere fact of the animal being cold blooded, or upon the anatomical conformation of ophidians, since most, if not all, of the non-venomous snakes are susceptible to venom. Surgeon Waddell suggests that it may result from a toleration established through frequent imbibition of the venom in the modified or attenuated form which it assumes when mixed with salivary and gastric juices and absorbed through the alimentary canal, and in support of this hypothesis he mentions the popular belief that certain snake-charmers, by a process of inoculation with venom, gain protection against the bite of a particular species of venomous snake. If this hypothesis can be verified by further experiments, it will go far towards affording indications for combating the action of the venom on man.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 27, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	904	496	38.61	11.88	30.03	1.10	3.96
Philadelphia	1,010,245	471	245	18.84	8.19	10.71	3.99	1.68
Chicago	830,000	489	294	37.20	6.80	30.60	1.20	2.40
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	191	116	39.22	8.48	35.51	.53	.53
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	238	114	34.06	10.92	25.20	1.68	4.20
New Orleans	250,000	169	65	17.70	6.49	7.67	—	1.77
Cincinnati	225,000	111	—	29.70	9.01	13.50	5.40	3.60
Washington	225,000	97	45	26.78	11.33	18.57	5.15	—
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	59	24	18.59	16.94	15.21	—	—
Portland	40,000	20	9	35.00	20.00	35.00	—	—
Worcester	78,292	37	18	59.40	—	56.70	—	—
Lowell	71,518	42	26	45.22	4.76	38.08	—	7.14
Cambridge	65,552	32	16	40.69	12.52	28.17	3.13	6.26
Fall River	62,647	31	21	48.45	—	45.22	3.23	—
Lynn	53,334	21	—	19.04	—	—	—	9.52
Springfield	40,731	26	15	46.20	7.70	42.35	—	—
Lawrence	40,619	38	18	39.45	7.89	26.32	—	—
New Bedford	37,253	28	19	57.12	10.71	53.55	3.57	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	23	13	26.10	8.70	26.10	—	—
Brockton	28,813	8	4	25.00	25.00	25.00	—	—
Chelsea	28,167	16	8	56.05	18.75	56.05	—	—
Haverhill	26,058	11	4	45.45	—	27.29	9.09	9.09
Taunton	25,170	16	9	50 00	18.75	50.00	—	—
Gloucester	24,263	8	1	12.50	37.50	—	—	—
Newton	21,553	4	2	—	—	—	—	—
Malden	19,774	11	7	45.45	—	36 36	—	9.09
Fitchburg	17,534	4	0	—	25 00	—	—	—
Waltham	17,332	6	4	66.66	16.66	66.66	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	4	3	75.00	—	50.00	25.00	—
Quincy	13,728	6	5	33.33	16.66	33.33	—	—

Deaths reported 3031: under five years of age 1601; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 1049, consumption 299, acute lung diseases 146, diarrhœal diseases 802, diphtheria and croup 86, typhoid fever 58, whooping-cough 29, malarial fever 23, measles 21, scarlet fever 15, cerebro-spinal meningitis 11, erysipelas 4. From whooping-cough New York 12, Boston 5, Philadelphia 4, Baltimore, Washington and Lynn 2 each, Chicago 1. From malarial fever, New Orleans 12, New York 4, Philadelphia 3, Baltimore and Charleston 2 each. From measles, New York 6, Chicago and Washington 6, each, Boston and New Orleans 2 each, Cambridge 1. From scarlet fever, New York 6, Philadelphia and Chicago 3 each, Baltimore, Cincinnati and Lawrence 1 each. From cerebro-spinal meningitis, New York and Chicago, 3 each, Cincinnati 2, Washington, Worcester and Springfield, 1 each. From erysipelas, Chicago 3, New York 1.

In the 28 greater towns of England and Wales with an estimated population of 9,555,406, for the week ending July 20th, the death-rate was 21.0. Deaths reported 3844: infants under one year of age 1514; acute diseases of the respiratory organs (London) 141, diarrhœa 708, measles 102, whooping-cough 86, scarlet fever 58, diphtheria 36, fever 28.

The death-rates ranged from 12.0 in Brighton to 38 1 in Portsmouth; Birmingham 24.3; Bradford 19.3; Halifax 16.7; Hull 18.6; Leeds 28.5; Leicester 26.0; Liverpool 29.2; London 18 7; Manchester 29.9; Nottingham 18.2; Sheffield 20.4; Sunderland 26.8.

In Edinburgh 15.8; Glasgow 21.9; Dublin 22.8.

The meteorological record for the week ending July 27, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, July 27, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...21	29.86	73.0	82.0	66.0	72	62	67.0	N W.	N.W.	12	6	C.	C.		.0
Monday, ..22	29.95	68.0	71.0	63.0	72	90	81.0	N.E.	E.	11	6	C.	F.		.0
Tuesday,..23	29.77	70 0	79.0	65.0	90	81	86.0	S.W.	S.W.	10	8	O.	C.	2.55	.20
Wednes. ..24	29.89	66.0	76.0	60.0	65	63	64.0	N.W.	N.	10	5	C.	C.	0.45	T.
Thursday, 25	30.06	67.0	76.0	57.0	49	67	58.0	N.W.	S.W.	9	12	C.	C.		.0
Friday,....26	30.15	66.0	71.0	60.0	63	87	75.0	N.E.	E.	6	5	C.	F.		.0
Saturday,.27	29.96	63.0	64.0	61.9	100	100	100.0	N.E.	N.	19	12	R.	R.	14.30	1.75
Mean for Week.	29.95		74.0	62.0			76.0							18.10	1.95

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 27, 1889, TO AUGUST 2, 1889.

S. O. 174, Headquarters of the Army, Adjutant General's Office, Washington, July 30, 1889. By direction of the Secretary of War, so much of Par. 1, S. O 159, July 12, 1889, A. G. O., as directs Captain **Louis Brechemin**, assistant surgeon, to return to his station at the close of the encampment of the Illinois National Guard, is amended to direct him to report in person, not later than August 20, 1889, at Fort Robinson, Nebraska, for duty at that place.

Leave of absence for ten days is granted Captain **William R. Hall**, assistant surgeon. Par. 5, S. O. 80, Headquarters Department of Dakota, July 27, 1889.

The leave of absence for two weeks granted Captain **Samuel Q. Robinson**, assistant surgeon, U. S. A., by Par. 11, S. O. 165, from these Headquarters, is hereby extended ten days. Par. 8, S. O. 172, Headquarters Division of the Atlantic, July 30, 1889.

The extension of leave of absence granted First Lieutenant **Robert R. Ball**, assistant surgeon, in S. O. 167, July 22, 1889, from this office, is further extended ten days. Par. 23, S. O. 169, A. G. O., Washington, July 24, 1889.

By Par. 9, S. O. 176, A. G. O., August 1, 1889, the leave of absence granted in S O. 140, A G. O., June 18, to First Lieutenant H. S. T. Harris, is further extended two months.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U S. NAVY FOR THE WEEK ENDING AUGUST 3, 1889.

P. H. **Bryant**, assistant surgeon, ordered to temporary duty on Iron Clads, Richmond, Va.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING AUGUST 3, 1889.

Hutton, W. H. H., surgeon. When relieved at Mobile, Ala., to assume command of the Service at Baltimore, Md. July 23, 1889.

Purviance, George, surgeon. When relieved at Baltimore, Md., to assume command of the Service at Philadelphia, Pa. Jaly 24, 1889.

Gassaway, J M., surgeon. Ordered to New Orleans, La., for temporary duty. August 2, 1889.

Goldsborough, C. B., surgeon. Granted leave of absence for thirty days. July 29, 1889.

Vaughan, G. T., assistant surgeon. Ordered to Norfolk, Va., revoked; to proceed to Cairo, Ill., for temporary duty. August 1, 1889.

Groenervelt, J. F., assistant surgeon. Relieved from duty at Gulf Quarantine Station; ordered to Mobile, Ala., for temporary duty. August 3, 1889.

SOCIETY NOTICE.

French Congress of Surgery.—The Fourth Session of the French Congress of Surgery will be held from the 14th to the 20th of October next, at Paris, in the main amphitheatre of the *Ecole de Médécine*, under the presidency of M. le Baron Larrey. Opening Session, Monday, October 14th, at two o'clock.

The following questions are submitted to the consideration of the Congress:

(1) Results, immediate and remote, of operations practised for local tuberculosis.

(2) Surgical treatment of peritonitis.

(3) Treatment of aneurism of the extremities.

Dr. S. Pozzi, *Secretary-General*,
10 Place Vendome.

DEATH.

Henry S. Otis, M.D., of Hartford, Conn., died August 4, 1889.

BOOKS AND PAMPHLETS RECEIVED.

Plaies et Ligature de la Veine Fémorale. Par M. Maubrac, Aide-major. Paris, 1889.

Circulation Veineuse de la Racine de la Cuisse. Par le Dr. Maubrac, Médecin Aide-major. Bordeaux, 1888.

Seventeenth Annual Announcement of the Physio-Medical College of Indianapolis, Indiana. Session of 1888-90.

Forty-Eighth Annual Announcement of the St. Louis Medical College, Collegiate Year, 1889-90, and Catalogue for 1888-89.

On the Diagnosis of Pregnancy in the Early Months. By Llewellyn Eliot, M.D., of Washington, D. C. Reprint. Chicago, 1889.

Transactions of the South Carolina Medical Association. Thirty-ninth Annual Session, Charleston, S. C., April 23 and 24, 1889.

Original Articles.

ON SURGICAL TREATMENT OF GANGRENOUS HERNIA, WITH REPORT OF FOUR CASES.[1]

BY MAURICE H. RICHARDSON, M.D.,
Surgeon to the Massachusetts General Hospital; Assistant Professor of Anatomy in the Harvard Medical School.

During the past few years a great deal has been said upon this subject. Hitherto, gangrene of the intestine following prolonged strangulation has been treated by leaving the process to nature, by forming an artificial anus, or by immediate resection and return of the sutured gut to the abdominal cavity. All these methods have been advocated and followed during the past ten years. The object of surgical interference in these cases is, first, to relieve obstruction by providing an outlet for the intestinal contents; and second, to restore the continuity of the bowel. The chief question to be considered, is whether we shall do the palliative operation, and make an artificial anus, or whether we shall immediately excise the gangrenous portion of the bowel. The literature of the last three years contains many valuable contributions to this subject. McCosh[2] publishes a successful case of immediate resection and gives an excellent *résumé* of the subject, with a carefully prepared table which includes all the cases published up to the present time. In this paper the opinions of prominent surgeons are quoted for and against primary excision, that of the writer being rather in favor of its immediate performance.

Klaussner, in an elaborate article, concludes:[3] "In all cases of strangulated gangrenous hernia one should form an artificial anus, if the patient is run down, so that a long operation (one to one and a half hours) would be borne with difficulty. It is also the preferable operation for the practising physician, who is often compelled to operate under the most unfavorable circumstances or even wholly without assistance. Therefore, primary resection seems suited only to those who have a certain power of resistance against a longer operation and narcotization, as in the case of gangrene quickly following acute strangulation. So that, to put the matter in a few words, the formation of an artificial anus is slower but surer as regards recovery; unfortunately, however, it soon puts a patient into a most miserable condition; while primary resection, on the other hand, an ideal operation, is a more risky performance, but in cases of success gives perfect health in a few weeks."

Graefe, Reichel, Bergmann, all favor the formation of an artificial anus, with a view to secondary resection. Rydgier, Bausu, Roggenban, Riedel, and Kocher favor primary resection.

In regard to the operation of excision of gangrenous intestine, Klaussner says that the most important thing is to make the incisions in healthy gut; so that it is better to remove a couple of centimetres of healthy gut than to run the risk of subsequent sloughing.

Haenel [4] reports five cases of gangrenous hernia in which an artificial anus was formed. Three of these died before any attempt was made to get rid of the artificial anus — one from collapse, one from inanition, and the third from general peritonitis. In attempting to get rid of the artificial anus in the other two, and in two cases sent in from outside, success followed the three cases in which Dupuytren's method was followed, but death from fæcal peritonitis occurred in the fourth case, in which resection was performed. Haenel speaks very decidedly in favor of the formation of an artificial anus in gangrenous hernia, and all the more willingly gives preference to this procedure, rather than resection, because in the latest literature (since Reichel's statistics) he found ten cases of death in sixteen cases of primary resection; and of the six cases that recovered, two had fæcal fistula for a while. As regards getting rid of artificial anus, Haenel mentions forty-three cases of secondary circular resection, sixteen fatal, twenty-five recoveries, and two with permanent fistulæ. Hence he favored the Dupuytren method of operating wherever it is possible to do so.

Coppons[5] says: "(1) Simple enterotomy followed by the formation of an artificial anus, ought to constitute the preferable operation in gangrenous hernia. (2) Intestinal resection, more perilous, ought to be reserved for absolutely special cases, and considered as an exceptional method."

Mazzoni preferred primary resection for gangrenous hernia. Out of twenty cases thus treated in Italy, twelve were successful.

Wright, G. A.,[6] says: "Perhaps the wisest course would be to merely open the bowel at the time, and should the obstruction continue and the symptoms persist, to adopt the plan of resection a day or two later, in the meantime taking measures to render the parts as aseptic as possible."

Since the appearance of McCosh's tables, Dawborn[7] publishes a successful case of immediate resection of the intestine for gangrene. He performed immediate resection for three reasons: (1) Patient in excellent condition; (2) part of gut involved undoubtedly part of the jejunum, and hence nutrition with an artificial anus would not be well maintained; (3) the patient's bowel above the strangulation could not contain much fæces, as a thorough movement had occurred a little more than a day previously. Consequently, great pressure from retained gut-contents would not be brought to bear against any intestinal sutures. $12\frac{2}{3}$ inches removed. Czerny and Lembert sutures. Whole operation two and three-quarter hours. Actual suturing of gut, nearly one and a half hours. Thinks that Abbe's catgut rings (an improvement on Senn's plates) will shorten the time very much.

Gerster[6] had four cases of gangrenous hernia; all died. He says: "All the patients upon whom necrosed gut was found died either of collapse, shortly after completion of the operation, or of peritonitis due to infection extending from the place of strangulation. On one of them resection of the necrosed part of the gut was practised, with subsequent suture. The patient died of peritonitis. Immediate resection of the gut has little to commend it. The dangers of the infection of the peritoneum are almost insurmountable, the comprehensive preparations required for enterorrhaphy are usually not made, and, the work being extemporized, generally lacks exactitude. In addition to this, the general condition of the patient is commonly so bad, that undue prolongation of anæsthesia would be very dangerous. Therefore, in these cases, the establishment of an artificial anus is the only thing to do."

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[1] Read before the American Surgical Association, May 15, 1889.

[2] New York Medical Journal, March 16, 1889, p. 281.

[3] Ferdinand Klaussner Munchner med. Wochenschrift, January 29, 1889, and February 5, 1889. Ueber die Behandlung Gangränöser Hernien.

[4] "Zur Kasuistik der gangränösen Hernien und der Anus praternaturalis," Archiv f. klin. Chirurgie, Bd. xxxvi, s. 393-420.

[5] Bull Méd. Par., 1888, 11, 1659-1662.

[6] Lancet, March 30, 1889, p. 617.

[7] Medical Record, April 20, 1889, pp. 428-430.

[8] Aseptic and Antiseptic Surgery, p. 122.

Charles K. Briddon[9] reports a case of strangulated femoral hernia with gangrene of the intestine. He performed the operation of resection and suture. Operation lasted one and a half hours. Patient failed gradually and died the next day. The post-mortem showed no signs of peritonitis, and there was quite firm union of intestine at the point of suturing.

Walter Pye[10] referred to a case of gangrenous intestine in which he had established an artificial anus. During exertion the open bowel slipped into the abdomen and caused the death of the patient from peritonitis.

Stewart (quoted in *Lancet*) says that in twenty herniotomies he has seen, gangrenous gut had been found in two instances, and in both the bowel was opened and left *in situ*, both patients dying early from septicæmia. It was this adverse experience which led him to prefer excision of the intestine when the next case presented itself to him, which was done with success.

Fleming, J. C.[11] Male, aged forty-eight. Inguinal herniotomy performed; bowel gangrenous; laid open and slightly stitched to the external wound. Did well after the operation. A month later noted that he was distinctly emaciating and in low spirits, and also suffering extremely from the irritation of the fæces continually pouring out of the artificial anus, this irritation even preventing him from sleeping. Operation. An incision was made through the skin round the projecting end of the bowel, and about a quarter of an inch from it, and was prolonged upward. By putting the bowel on the stretch by means of ligature already applied, it was easily dissected free, and a portion pulled down with the mesentery. By following this the lower end of the bowel was found; triangle of mesentery removed three inches each way. Freshly cut edges of the gut brought together. Lembert sutures. Good recovery.

Bank, W. M.[12] Six cases of gangrenous gut; laid gut open, but did not interfere with stricture or anything else; three died and three recovered. Is strongly of the opinion that the stricture should be left alone.

Weill.[13] Artificial anus formed; 70 cm. intestine excised. Eleven weeks later operations for artificial anus; recovery. 12 and 15 cm. excised from ends of intestine; nearly one metre excised in all. Umbilical. In his own experience had, from 1873–79, fifteen cases of gangrenous hernia; thirteen died and two were left with fæcal fistulæ: a mortality of eighty-seven per cent.

In 1884, Reichel[14] collected all the published cases of circular resection of the intestine; fifty-six for gangrenous hernia; twenty-four recoveries, twenty-nine deaths; three fæcal fistulæ: a mortality of fifty-two per cent.

In a personal communication, Dr. E. H. Bradford, of Boston, Surgeon to the Boston City and Children's Hospital, expressed himself as favoring resection in gangrenous hernia, where the condition of the patient is good enough to justify the additional risk. With his permission I have availed myself of the following cases:

The first case was that of an old woman with a strangulated hernia of ten days' standing. She was in bad condition. The gangrenous gut was excised and the bowel sewed partly with the Lembert and partly with a continuous stitch. She died of shock the next day. No autopsy was allowed.

The second case was also hernia with gangrene. Excision and suture was performed. The patient died at the end of a week, because too much of the intestinal wall was turned in, leaving a lumen not larger than a pencil. Dr. Bradford feels confident that she would have got well if this had not been done.

A third case of gangrenous hernia was treated by the formation of artificial anus. The patient recovered well from the operation, but died later from inanition. The part opened proved to be the jejunum.

My experience in gangrenous hernia is derived from the following cases:

Case I. A young woman with right femoral hernia of a week's standing. There was a large swelling in the upper part of the right thigh, extending downward and inward. Constitutional symptoms severe. A large incision was made down into the sac, which contained fæcal matter and pieces of gangrenous bowel that had become almost entirely disorganized. The ring was divided sufficiently to allow fæcal matter to escape, so that an artificial anus was established. She died of shock in twenty-four hours.

In this case it is quite evident that nothing could have been done beyond opening freely the bowel and trusting to the formation of an artificial anus. The condition of the patient was so poor that nothing beyond the most speedy operation could be thought of.

Case II. Susan H. T., age sixty-five, married. Entered Massachusetts General Hospital, September 13, 1886. Five years ago operated upon for radical cure of hernia by injection. Had complete relief until yesterday, when she was taken with violent vomiting and pain. The old hernia was enlarged, and very tense, about the size of a goose-egg. Operation by Dr. Richardson. Incision through skin and sac of hernia, disclosing a loop of intestine very dark in color. The ring was divided and the hernia reduced. Pillars of ring sewed together and wound closed; drainage from the bottom.

September 14th. Very uncomfortable; vomiting.

September 16th. Still vomiting. Abdomen much distended. Enema. Small dejection and much wind. No relief of distention.

September 17th. Delirious; becoming weaker. Second operation.

Original incision extended and peritoneum opened. The loop of intestine in hernial sac found constricted, although above the ring. It was dark and gangrenous, and gas could be squeezed from it through numerous small perforations. The constricting band was cut and the coil of intestine withdrawn. The perforated and gangrenous portion of intestine and the mesentery connected with it was carefully excised, the incision being made well within the healthy gut. The two free ends of intestine were sewed with fine silk, by the interrupted Lembert method. The mesentery was sewed with a continuous suture. She died at 11.45 P. M. that evening, September 17th. Wound opened and

[9] New York Medical Journal, March 9, 1889, p. 255-257.

[10] Lancet, 188[illegible], vol. i, p. [illegible].

[11] Lancet, 1887, p. 521.

[12] Medical Times and Gazette, London, 1885, vol. 1, p. 567.

[13] Prager med. Wochenschr., 16 Marz, 1887, 81, 89, 98.

[14] Deutsch. Zeitschrift für Chir., Bd. xix.

specimen removed. The gut was already well glued up. Death from shock. No general peritonitis.

Case III. Dr. Broderick, of Charlestown, in whose practice this case occurred, has sent the following history: Catherine Corcoran, aged forty-two. Has had several children. Noticed a swelling in umbilical region a number of years ago, which gradually increased in size. At times she would have severe pain in that region which the attending physician called wind colic. I saw her for the first time on the night of October 19, 1888. She had been in bed two days, with pain in umbilical region, vomiting, thirst, and constipation. Temperature 98.6°; pulse 80. At the umbilicus was a hard tumor, the size of fist, slightly tender on pressure and dull on percussion, and very red in color. I saw her again October 20th, at night. Temperature 99°; pulse 84; constant vomiting, and no movement from bowels for four days. Swelling at umbilicus more tender, somewhat softer and dusky red in color. I saw her a third time, October 21st, morning. Continual vomiting; pain at umbilicus severe and constant; bowels not moved. Umbilical swelling has a softer feeling and a sense of fluctuation. Temperature 99°; pulse 86. I saw her again Monday, October 22d, morning. Temperature 99.8°; pulse 88. Constant vomiting if anything enters the stomach. Bowels have not discharged anything for six days. Constant pain in umbilicus; fluctuation in swelling. When I first saw the patient my diagnosis was probable strangulated hernia, and I advised her to enter the hospital, but she refused. Treatment, morphine subcutaneously. Ice to suck. Milk and water to drink. Poultice to tumor. The first day ordered enema, but no fæcal discharge, and on third visit ordered another, with same result. I did not desire to try taxis.

Hospital Records.— "Catharine Corcoran, age forty-two. Monday, October 22, 1888. General health fairly good. For six years has had a rupture at naval, and has been troubled with it for the past four months more than usual. Bunch at umbilicus from time to time grows larger and painful, and she vomits. By lying down and taking hot drinks she recovers. After this present attack, no relief followed her usual treatment. Friday morning, October 19th, she was seized with a severe pain in umbilical region and began to vomit. Vomiting continued incessantly up to time of admission to hospital, the following Monday — three days. No sleep; no passage of flatus or fæces; abdomen very painful, tender and distended; tumor as large as two fists at umbilicus; skin over it tense, red, and in places darkly discolored, hot and œdematous; expression anxious; respiration rapid and shallow; pulse, small, thick and thready, almost imperceptible; temperature 100.5°."

Operation, 5 p. m., by electric light; under ether. Incision five inches in length, made over tumor in the median line. On opening sac small intestine found to be gangrenous. Color dark green; odor putrid and fæcal; surface shreddy. The whole sac and its contents were first thoroughly irrigated with warm solution of corrosive sublimate, 1: 5000. The ring was so tight that it was impossible to get anything through it, and the occlusion was complete. The opening was freely incised and healthy bowel drawn out. Up to this time the woman's condition had constantly improved under the anæsthetic. I believed it to be quite as easy to resect this gut and sew the ends as to make an artificial anus, and the danger of infecting the peritoneal cavity equal in both operations. I decided to perform enterorrhaphy. The living bowel was divided with scissors well beyond the line of demarcation, and the healthy ends held by the fingers of an assistant. The healthy mesenteric border was ligated with silk and left. The joint was made by a single row of Lembert sutures, and twenty-minutes were taken to apply them. Fine silk was used, threaded in round needles. The mesenteric border remained as a small puckered bunch under the line of suture. The whole joint was very satisfactory.

During the operation the parts were repeatedly irrigated with corrosive solution, and great care was taken to keep the contents of the sac out of the abdominal cavity. The bowel was then replaced, and the ring sewed up with interrupted silk sutures. Sac drained. The condition of the patient was good during the entire operation. The vomiting ceased immediately and never returned. There was a large dejection on the third day; marked diminution of distension; temperature normal. The sac discharged freely for some time. For the first few days it was distinctly fæcal in odor. Her temperature never reached 101°, except the evening after the operation, when it was 101.8° Discharged well, December 17th. In perfect health ever since.

Case IV. Dr. Colony, of Fitchburg, sends the following history of this case:

"I was first called to see the patient, Mrs. Jos. A. H., on March 11th. She is a strong, muscular woman, weighing more than two hundred pounds, and accustomed to do the hardest kind of work, and with the exception of the disease to be described, always in robust health. For the past fifteen or twenty years, an umbilical hernia has been developing, which has at last attained an enormous size, of irregular shape, and at times nearly twelve inches in diameter, heretofore partially reducible. Previously to the present attack, the patient had from time to time suffered from what she described as severe colic pains, but usually passing off without medical assistance. Had been sick several days when, Monday, March 11, 1889, upon my first visit, she was suffering from severe abdominal pains, radiating from the lower portion of the sac, which was tender, red and inflamed. Nausea and vomiting occurred, and there was obstruction of the bowels. Pulse 90; temperature 100°. On Tuesday and Wednesday the local inflammatory symptoms increased, involving an area of nearly five inches in diameter. The general symptoms were not much changed. There was a rise in temperature, 102°, and pulse 95. On Thursday, 14th, the integuments covering a large portion of the sac had become dark colored and presented a gangrenous appearance. On Friday there was an escape of fluid and sloughing. A very offensive discharge occurred, which increased for several days. On Tuesday, March 19th, in consultation with Drs. Thompson and Spring, an investigation was made without ether, and the two ends of the bowel, of what portion we were not sure, were easily located in the sloughing mass. At this date the whole sac presented a dark appearance, and no line of demarcation could be made out.

"Toward the end of the second week the local inflammatory symptoms began to improve, and a not very thick slough of the integuments began to take place. This favorable change has continued to the present time, until the integumentary portion of the sac has gradually closed up around the ends of the bowel. A small portion of the bowel has sloughed off. The ends of the bowel each discharged partially digested fæcal matter. The general health of the patient has improved since the end of the second week, until at the present time she is able to take all the nourishment she requires, and as much as her attendants. She is also able to be about her room."

I saw this case on Friday, May 2d, with Dr. Colony. The patient looked in very robust health, and was evidently in first-class condition. There was a large irreducible umbilical hernia, covered with thin skin, through which the peristaltic movements of the small intestines could easily be seen. At the lower border of the hernia there were two conical projecting masses at the apex of which crater-like openings discharged gas and fæcal matter. Though small and constricted these openings gave free exit to the intestinal contents. The skin of the abdomen was intensely inflamed. The lower margin of the tumor ended in a deep sulcus, lined with granulations which was very difficult to keep clean. It was hard to say just what part of the small intestine had sloughed, but it was quite evident that it was removed from the stomach, not only from the character of the fæcal matter discharged but also from the rapid improvement in nutrition and general condition. The constant attendance of two sisters was necessary, and she was unable, of course, to be of any service in the care of her house, husband, and seven boys. Her life at present is not worth living.

I report this case not only because it shows the terrible condition to be expected in favorable cases of artificial anus, but it adds one more case to the list of recoveries following the establishment of artificial anus, by nature or otherwise. She has now to run the risk of a secondary operation.

(To be continued.)

THE CHEMISTRY OF ARSENIC.[1]

BY WILLIAM B. HILLS, M.D.,
Assistant Professor of Chemistry in Harvard Medical School.

Arsenic, although one of the rarer elements, is in small quantities very widely distributed. It is found native but more commonly in combination with certain metals, notably iron, cobalt and nickel, and with sulphur. The most important arsenical ores are arsenical iron, $Fe\ As_2$; arsenical pyrites or mispickel, $Fe_2\ As_2\ S_2$; realgar, $As_2\ S_2$; orpiment, $As_2\ S_3$; arsenical nickel, $Ni_2\ As_2$, and tin-white cobalt, which is composed essentially of arsenic and cobalt. Less frequently arsenious oxide and salts of arsenic acid are met with. The most abundant of these ores is mispickel, and it is from this chiefly that arsenic and its compounds are prepared on the large scale as a principal product. Large quantities are, however, obtained as a secondary product in the working of the ores of tin, copper, cobalt and nickel. The ores of arsenic are found in various parts of the world, but are especially abundant in certain European localities, as Styria, Silesia, the Hartz mountains, and in Cornwall and Devonshire in England.

Arsenic in small quantities occurs in many minerals other than those above mentioned. It is found, for example, in most specimens of iron pyrites; consequently it is a common impurity in sulphuric acid and in numerous chemical and pharmaceutical products in the preparation of which this acid is employed. The ores of bismuth frequently contain arsenic; as a result, the pharmaceutical preparations of bismuth are likely to be arsenical, unless the metal from which they are prepared is first purified, or exceptional care taken to eliminate arsenic in their preparation. The ores of zinc are usually arsenical; consequently metallic zinc, which is employed in the most important test for arsenic may contain more or less arsenic as an impurity.

The wide distribution of arsenic is of great importance in its relations to medico-legal investigations involving a question of arsenical poisoning.

(1) Since certain reagents employed in analytical work are liable to contamination with arsenic, it is the duty of the chemist, who is called upon to make an examination of the organs of the body, or of other material in a case of suspected arsenical poisoning, to ascertain that all the reagents and apparatus used in his investigations are entirely free from arsenic. For this purpose, a blank experiment, using the same reagents in essentially the same amounts, and the same apparatus, must be carried on side by side with the examination of the organs or substances under investigation. Among the reagents employed in an analysis for arsenic, sulphuric and hydrochloric acids and metallic zinc are especially liable to contain arsenic as an impurity; while sodium carbonate and potassium chlorate have occasionally been found arsenical. Glass and the glaze of porcelain may also contain arsenic, which may be communicated to certain reagents, especially the fixed alkaline hydrates. While there is no difficulty at the present time in obtaining reagents free from arsenic, yet the chemist should personally test the purity of these; and a failure to do so is properly sufficient ground for the rejection of the chemical evidence.

(2) Owing to the occasional presence of arsenic in pharmaceutical preparations, it is important, in medico-legal investigations involving the question of arsenical poisoning, that such medicines as have been administered just prior to and during the sickness of the individual supposed to have been poisoned, be submitted to the chemist for analysis, that he may be able to say, if possible, that the arsenic found in the organs or excreta could not have had its origin in such medicines. This procedure is especially necessary in cases in which subnitrate of bismuth has been administered. This preparation formerly contained, as a rule, more or less arsenic; sometimes a considerable quantity. Consequently the arsenical impurity in bismuth is invariably urged by the defence, provided bismuth has been administered, in explanation of the arsenic found. As now prepared it rarely contains more than the faintest trace of arsenic. Yet a failure to submit for analysis any sample actually administered might aid in defeating the ends of justice. Solution of ferric chloride may also be mentioned as a medicinal preparation in which an appreciable amount of arsenic may be found.

(3) On account of the wide distribution of arsenic in small quantities, traces of arsenic are occasionally found in the body in cases in which death has not been the result of poisoning. Such traces may have their origin in drugs administered during life (either arsenical preparations as Fowler's Solution, or medicines containing arsenic as an impurity), or more frequently

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[1] Read before the Massachusetts Medico-Legal Society, October 3, 1888.

perhaps in the dust given off from arsenical papers or fabrics. The possibility of the latter origin of arsenic found in the organs is usually urged by the defence, even in cases in which the amount of arsenic recovered from the organs is large. In the majority of cases the quantity of arsenic found, if any, is sufficiently large to justify the opinion that it could not have had its origin in the manner suggested: and a similar opinion is warranted in case arsenic or any of its compounds is found in the stomach or intestines in the solid state. But the detection of mere traces of absorbed arsenic is by no means necessarily indicative of arsenical poison. In the case of Madame Laffarge, Orfila obtained from the body a quantity of arsenic estimated to be about the one hundred and thirtieth part of a grain. The woman was convicted. No importance whatever would be attached at the present day to the detection of this amount of arsenic in the body.

COMPOUNDS OF MEDICO-LEGAL IMPORTANCE.

In addition to metallic arsenic, the following compounds of arsenic possess more or less medico-legal importance: Arsenious oxide, called also arsenious anhydride, arsenious acid, white arsenic and arsenic: the arsenites of sodium and potassium; the aceto-arsenite of copper (Paris green, Schweinfurth green); the arseniates of sodium and potassium; arseniuretted hydrogen; the yellow sulphide of arsenic or orpiment, and the red sulphide or realgar.[2]

Metallic Arsenic.—The metallic arsenic occurring in commerce is either native arsenic or more commonly the artificial product obtained by heating arsenical iron or arsenical pyrites in a closed vessel. It is also prepared by subliming a mixture of arsenious oxide and charcoal, and may be obtained from the sulphides by heating these with a mixture of charcoal and an alkaline carbonate or potassium cyanide. It is a very brittle crystalline substance, of a steel-grey color, specific gravity about 5.75. It has a bright metallic lustre, and conducts electricity readily. Hence, although in all its chemical relations a non-metallic element, it is usually called *metallic* arsenic, to distinguish it from *white* arsenic to which the term "arsenic" is popularly applied. It undergoes no marked change in dry air at the ordinary temperature, but in moist air, especially if in the finely divided state, it absorbs oxygen with considerable rapidity and is converted to arsenious oxide; and it is probable that it is poisonous only in so far as it becomes oxidized either by exposure to the air or by contact with the fluids of the stomach and intestines. One of the substances known as fly-paper is such a mixture of arsenic and arsenious oxide, containing, it is said, from four to eleven per cent. of the latter substance. Metallic arsenic is readily volatilized, and the vapor in contact with air emits a peculiar garlic-like odor. Heated in air it takes fire and burns with a livid blue flame and evolution of dense white vapors of arsenious oxide. Its combustion is attended with the peculiar odor referred to. If pure it is insoluble in water; but when the oxidized product is boiled with water, arsenious oxide is dissolved, and may be detected by appropriate tests applied to the solution. The best solvent is concentrated nitric acid, which oxidizes it to arsenic acid. Metallic arsenic is used chiefly for the purpose of hardening lead in the manufacture of shot.

Analysis.[3] Heated in a narrow reduction tube metallic arsenic is converted to a vapor, which recondenses as a sublimate in the upper and cool part of the tube. The lower part of this sublimate presents an iron-grey appearance, and the upper part a dark-brown color, gradually fading to a grey ring in which octahedral crystals of arsenious oxide may usually be detected. Very thin sublimates have a light-brown color. An arsenical sublimate is distinguished from sublimates produced by other volatile metals as follows: (1) It is soluble in sodium hypochlorite (Labarraque's Solution). (2) If the lower part of the tube is cut off, and the sublimate heated while the tube is held in an inclined position, the arsenic is volatilized, and oxidized to arsenious oxide, which condenses in the form of octahedral crystals in the upper and cool part of the tube. This oxidation of arsenic is attended with the characteristic garlicky odor.

If arsenic is dissolved, by the aid of heat, in strong nitric acid, and the solution evaporated to dryness, a white residue of arsenic acid is obtained. This is soluble in water, and the solution thus obtained responds to the tests for arsenic acid; or the solution may be saturated with sulphur dioxide, the excess of this gas removed by heat, and the solution then tested for arsenious acid.

Arsenious Oxide. — This is called also arsenious anhydride, arsenious acid, and popularly white arsenic, flour of arsenic, arsenic and ratsbane. It is the substance usually meant when arsenic is spoken of. Medico-legally the most important of the compounds of arsenic. It is occasionally found native, and is formed artificially whenever metallic arsenic is volatilized in contact with the air. The ore from which it is obtained as the principal product is usually arsenical pyrites. It is also obtained as a bye-product in the roasting of arsenical ores of copper, tin, cobalt and nickel. The ores are roasted in furnaces, and the vapors of white arsenic conducted into large chambers in which they are condensed. The crude product is refined by subsequent resublimations. It is manufactured chiefly in the mining districts of Germany, and in Cornwall and Devonshire in England.

Arsenious oxide is a white solid, occurring in two crystalline forms and in the amorphous state. The amorphous, known also as vitreous or glassy arsenic, is formed when the vapor condenses on a surface whose temperature is but little below the volatilizing point of the oxide, so that before solidifying it passes through the semi-fluid state. It is colorless and transparent when first prepared, but gradually changes into an opaque porcelain-like mass. This change has been attributed to the passage from the amorphous to the crystalline state.

The *octahedral* variety is produced by sublimation when the vapor is cooled rapidly, so that it solidifies at once without passing through the semi-fluid state; also when hot saturated solutions are allowed to cool.

Right rhombic prisms, isomorphous with native oxide of antimony, are occasionally obtained by sublimation; also when a boiling saturated solution of the oxide in potassium hydrate is allowed to cool (Pasteur).

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[2] Poisoning, resulting from the domestic use of arsenic, for example from paper-hangings, glazed paper, fabrics, etc., has been recently treated in a thorough manner by Edward S. Wood, M.D., in the Report of the Massachusetts State Board of Health, Lunacy and Charity. The consideration of this subject is therefore omitted in this paper.

[3] Only such tests are described in this paper as may readily be applied by the physician to solids suspected to be arsenic or one of its compounds. Works on toxicology may be consulted for a description of wet tests for arsenic, and for information regarding the systematic examination of organic liquids or solids for arsenic.

As met with in commerce, powdered arsenic examined microscopically is sometimes found to consist wholly of amorphous fragments of varying size, being prepared by grinding the large masses. At other times it consists chiefly of octahedral crystals varying in size from $\frac{1}{250}$ to $\frac{1}{3000}$ of an inch in diameter, usually containing at the same time more or less fine dust and fragments produced by the breaking up of the crystals in the grinding process to which the crystalline arsenic is subjected before it is put on the market. Hence the microscopical character of the powder *may* enable one to say with tolerable certainty that a certain sample was not derived from a certain source. The factors which we may avail ourselves of in such a comparison of samples, are the crystalline or non-crystalline character of the powder, the prevailing size of the crystals or fragments, the proportion of crystals to amorphous matter, to some extent perhaps the lustre and markings of the crystals, and the presence or absence of foreign matters (the presence of charcoal, for instance, suggesting "Rough on Rats"). Microscopical examination does not, however, enable one to say that a given sample was derived from a given source; though we may say that one sample resembles another, and *may* have been originally a part of it. It should be borne in mind in comparing different samples that the characters of the substance may be materially modified by immersion in a liquid, as the contents of the stomach and articles of food and drink (smaller fragments dissolved, crystals rounded off, etc.).

White arsenic is practically destitute of taste, though at times a sweet, rough, astringent or metallic taste has been described. Its specific gravity is about 3.7, that of the vitreous variety apparently a little higher than that of the octahedral. It volatilizes at about 200° C. The vapor is colorless and odorless and condenses again on a cool surface in the form of octahedral crystals. The solubility of white arsenic in water varies with the conditions. It is, other things being equal, more soluble in hot water than in cold. The solubility, according to Wormley, depends chiefly upon the following circumstances: (1) The physical state of the oxide; (2) the relative proportions of the oxido and water present; (3) the time they have been in contact; (4) the temperature of the mixture; (5) if the mixture has been boiled, the length of time the boiling was continued; (6) the time that has elapsed since the mixture was heated. Wormley's experiments show that one part of the oxide may be dissolved in from 6.72 to 810 parts of water. The vitreous is usually considered to be more soluble than the crystalline variety; but Wormley finds that while under one set of conditions this may be true, under another the reverse may be true. Most experiments show that the solubility is more or less diminished by the presence of organic matter; but probably all liquids which are used as foods or beverages, such as milk, tea, coffee, wines and other alcoholic liquors, may hold in solution, in the quantity in which they would ordinarily be taken into the stomach, a poisonous dose of arsenic. Very large quantities may be held in suspension in thick or mucilaginous liquids, and thus taken into the system unperceived.

White arsenic, although quite heavy, has the peculiar property of floating on water in part, whether the arsenic is added to the water or the reverse. The floating particles frequently unite to form spheres enclosing a bubble of air and persistently refuse to mix with the water. Frequently the portion which sinks presents the same spherical appearance which may persist for a long time, and which is so characteristic as to attract attention. Arsenic will thus float on water for months even if the liquid is occasionally agitated.

White arsenic is more soluble in water acidulated with hydrochloric acid than in water alone. It is very soluble in the fixed alkaline hydrates, less soluble in ammonium hydrate. By nitric acid it is dissolved and oxidized to arsenic acid. White arsenic is used largely for the preparation of other compounds of arsenic, as a mordant, as an antiseptic, to some extent in medicine, for the extermination of vermin, and for other minor purposes. Among vermin exterminators, "Rough on Rats" is a mixture of white arsenic and charcoal; the "Buffalo Carpet Bug Annihilator" contains white arsenic as its poisonous ingredient. Some fly-waters are solutions of this substance or alkaline arsenites in water sweetened with sugar.

Analysis.—The recognition of solid arsenious oxide presents no difficulties. Its crystalline form (octahedra or modifications of octahedra) is very characteristic. Heated on charcoal in the reducing blowpipe flame it is volatilized in the form of white vapors, with the emission of a garlic-like odor. In this experiment, the oxide is first reduced by the carbon to metallic arsenic, which is in turn reoxidized in the air to arsenious oxide. Heated in a reduction tube it volatilizes without fusing, and recondenses in the cool part of the tube in the form of octahedral crystals, or crystals which are modifications of octahedra. Other white powders furnish crystalline sublimates, but most of these melt before volatilizing, and none of them condense in octahedral crystals. The reduction test for arsenic is one of the most valuable tests and is thus performed. Place a bit of arsenious oxide in the closed end of a narrow reduction tube, and a little distance above this place a piece of recently ignited charcoal. First heat the charcoal to redness, and then the oxide, keeping the charcoal at the same time hot. The oxide is volatilized and in passing over the hot charcoal loses its oxygen and is deposited in the cool part of the tube above as a sublimate of metallic arsenic, the characters of which have been described. This reduction may also be effected by a dry mixture of sodium carbonate and potassium cyanide, or by potassium ferrocyanide which has been previously dried at 100° C.

Pure aqueous solutions of arsenious oxide have a feebly acid reaction. If a drop of such a solution is allowed to evaporate spontaneously on a glass slide, the oxide is left in the form of octahedral crystals. The residue thus obtained by evaporation may be tested as above described. The most important tests for arsenious acid in solution are the following: (1) the ammonio-silver nitrate test; (2) the ammonio-copper sulphate test; (3) the sulphuretted hydrogen test; (4) Reinsch's test; (5) Marsh's test. Most of these tests require a skill in manipulation possessed only by the trained chemist, and all of them are subject to certain fallacies which can be avoided only by a thorough knowledge of the chemical properties not only of the compounds of arsenic, but of those of certain other elements. A satisfactory description of them cannot therefore be given in this paper. Of the tests mentioned. Marsh's test is the most important as well as the most delicate; while Reinsch's test is the only one applicable in the presence of organic matter. In the performance of the latter test it is important to remember that both metallic copper and hydrochloric acid frequently contain traces of arsenic. The purity of these reagents should therefore be first determined.

Arsenites. — These are compounds of arsenious acid with metals. The alkaline arsenites are at times sources of poisoning. Potassium arsenite which is used in medicine under the name of "Fowler's Solution" is the most important of these. Both potassium and sodium arsenites are used considerably in solution and in the form of a soap by taxidermists. They are white, non-volatile, very soluble compounds, and respond to all the reactions for arsenious acid, with the exception of the sublimation test, and to those for the constituent metals. Fowler's Solution is further characterized by its odor and color.

Aceto-arsenite of copper (Paris green or Schweinfurth green), is used largely as a pigment, and for the purpose of killing the potato-bug. Owing to the ease with which it can be obtained, it has given rise to numerous cases of accidental and suicidal poisoning. It is characterized by a vivid-green color when pure, a paler green when adulterated, as is frequently the case, with chalk or gypsum. Heated in a closed tube it furnishes a sublimate composed of octahedral crystals of arsenious oxide, while a black residue (cupric oxide) remains behind. It is insoluble in water, but wholly soluble, if pure, in ammonium hydrate with formation of a deep blue solution. If this solution is allowed to stand till the excess of ammonia has escaped, and a drop or two of a solution of silver nitrate is then added, a yellow precipitate of silver arsenite is obtained. On systematic analysis it affords the reactions for copper and arsenic.

(To be continued.)

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REPORT ON FOODS, DRUGS AND THEIR ADULTERATIONS.

BY BENNETT F. DAVENPORT, M.D.

SOJA.

M. Lecerf[1] calls attention to the nutritive value of soja hispida seeds as exceeding lean beef. As a flour it is rich in albuminoids, while containing only about three and one-quarter per cent. of starchy and sugary matter. It could well, therefore, be used in bread for diabetics. This has been found to remain fresh for five days. M. Petit has shown that the seeds contain a purgative which should be removed before grinding. According to M. R. Blondel, it does not at all contain any true starch.

COAL–TAR COLORS IN FOODS.

Dr. Weyl[2] has made important investigations as to the relation between chemical constitution and physiological actions, which are of great interest in relation to the use of coal-tar colors in food. Of the "nitroso" colors he finds "naphthol-green, B" to be harmless to dogs in fifteen to thirty grain doses daily for a fortnight. Of the "nitro" colors he finds "dinitrocresol or artificial saffron" to be likewise harmless; while Martin's yellow, which is well tolerated by rabbits, will, in small doses, kill medium-sized dogs. A sulpho acid, however, of the Martin's yellow, known as "naphthol yellow, S," is harmless in four times as large doses. The "nitro" compound, picric acid, has long been known to be poisonous. Of amantias there are two commercial brands. That from the Berlin aniline factory appears not to be poisonous to rabbits, while that from Basle has proved very injurious to men. Dr. Weyl has not yet found any of the "azo" coloring compounds to be poisonous, while three "saffranin" preparations were all so.

Cazeneuve[3] reports that he finds the following coal-tar colors not injurious to health: roccellin or soluble red, the sodium salt of the sulphonic acid of rosaniline; a purple-red diazo-compound (Bordeaux red, B); Ponceau, R; orange, 1; yellow, N. S.; ordinary induline; Coupier's blue; acid green; and a soluble yellow sodium salt, the full technical name for which, as well as for the other ten colors mentioned, necessary for their perfect identification, must be sought in the original article. He finds the sodium salts of sulphonic acids are not poisonous, as a rule; while the nitro compounds are. Methylene blue he finds is injurious.

BENZOIC ACID AS A FOOD PRESERVATIVE.

The consultative committee of public hygiene in France, have reported, through M. Pouchet,[4] that benzoic acid should not be allowed to be used as a preservative in foods. The reason was that, as an antiseptic, it would interfere with normal digestion. The use of any antiseptic or antifermentative is irrational, from the point of view of nutrition.

COCOANUT AS A VERMIFUGE.[5]

The cocoanut has been used as a vermifuge for centuries in India, being considered equally efficient for expelling the flat worm as male-fern oil, kouso, pomegranate root or turpentine; being, moreover, as pleasant to the taste as they are offensive.

KERATINIZED PILLS.

The residue left after testing such tissues as horn or feather quills successively with ether, alcohol, water, and diluted acids, is known as keratin. This substance, which is insoluble in the gastric juice, is dissolved by the alkaline bile in the small intestines. It has therefore been recommended by Unna and Beierdorf[6] as a coating for pills, which it is desirable for any reason should not act until they have passed the stomach, an object sometimes of great importance.

THIOCAMP,

a compound of sulphur dioxide with camphor, is commended by Dr. J. E. Reynolds, of Dublin, as a disinfectant, it being a convenient form of liquified sulphurous-acid gas obtainable without the use of pressure. The fluid can be stored at ordinary temperature in bottles without pressure; yet, when exposed in a thin layer to the air, it gradually liberates 308 times its own volume of the acid gas. This compound has long been known as a chemical, having been described years ago by H. Schulze.[7]

MORPHINE VASELINE.

Dr. Richardson,[8] in a late number of his journal, recommends a mixture of four grains morphine to the ounce of vaseline as a sedative application in cases of external malignant disease in which there is ulceration with continuous pain. A little chloroform aids the mechanical mixing; it is best applied spread on lint.

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[1] Jour. de Pharm. et de Chemic., xviii, p. 537.

[2] Bericht, Deutsch. Chem. Gesell., xxi, 2191.

[3] Ann. d' Hygiene, 1887, 18, 1.

[4] Pharm. Jour. et Transt., xix, p. 312.

[5] Pharm. Jour. et Transt., xix, p. 346.

[6] Jour. de Pharm. de Chemie, xix, p. 386.

[7] Pharm. Zeitung, 1889, p. 416.

[8] Asclepiad, p. 147.

MILK SUGAR AS A DIURETIC.

M. G. Sée[9] lately called the attention of the French Academy of Medicine to the powerful diuretic action of milk sugar. He attributes to this the like action of whole milk or its whey.

CAPSICUM COLOR.

Dr. Sauerman[10] has reported to the Physiological Society of Berlin, that a non-pungent coloring matter, obtainable from capsicum, when fed to young canary birds before they had moulted, had a marked effect in heightening the color of their feathers.

FRAUDULENT MERCURIAL OINTMENT AND LAUDANUM.

The Pennsylvania Pharmaceutical Association committee[11] on adulterations, have reported finding some blue ointment composed merely of lard, colored with Prussian blue. Of 77 samples of laudanum collected from all parts of the State, as well as New York City and Baltimore, but four were of full officinal strength; nine more were near enough to fall within the limits of reasonable error; while five failed to yield any weighable amount of morphine. The remaining fifty-nine samples were all classed as bad. Nearly all of the poor samples were either the bottled preparation from country stores or from manufacturers who supply that trade.

Forty-two samples of laudanum collected by the State Drug-Examiner of New Jersey,[12] were found upon analysis in thirty-four cases, to fall below the legal standard.

COMPOSITION AND IDENTIFICATION OF THE NATURAL DISTILLED SPIRITS.

M. X. Rocques,[13] of the *Laboratoire Municipale de Paris*, has reported a scheme for the identification of the natural distilled spirits, among which he includes the brandies from grapes, apples, pears, and other small fruits; also rum and whiskey. He distills nine successive fractions of one-tenth each, using Lebel and Henninger column, and subjects them each to the action of a series of five reagents. In these reactions he claims a notable difference between the natural and artificial product is shown in all cases, and in his report gives the details of his results.

COVERING THE SENSE OF TASTE FOR BITTER AND SWEET.

B. Berthold[14] reports that directly after chewing the leaves of gymnema sylvestre, a strong woody shrub from an asclepiadea found in Assam, on the Coromandel coast, and in Africa, the sense of taste for bitters and sweets is lost for one to two hours, but only for these two effects. Sugar then tastes like sand, and quinine pills like chalk. The leaves themselves, taste at first bitter and then slightly acid. The Hindoos have long used the bark as an antidote against snake-bite.

BORIC ACID A NORMAL CONSTITUENT OF WINE.

Dr. Baumert,[15] of Halle, reports that he finds boric acid to be always present in natural wines grown in any of the wine producing countries of Europe, as well as in those of California.

TEA ADULTERATIONS FOR THE AMERICAN MARKET.

Consul Crowell,[16] of Amoy, reports that a large portion of the Amoy oolong tea is poorly cultivated, picked and dried; that it is dirty and adulterated, and was called "stuff," in the last year's report of the Amoy Commissioner of Customs, who added that it "was alone wanted in America." This last, the consul says, is true; for nearly the entire crop of Amoy oolongs — bad and unfit often for use as they are — are annually marketed in the United States, and, he thinks, the American public ought to be warned and protected against this so-called tea.

INGLUVIN.

Dr. A. Gawalowski[17] reports that he finds ingluvin originating from a New York firm to consist simply of three parts table salt with 97 parts of a crude pepsin containing starch.

HEAVY CALCINED MAGNESIA.

An American house[18] has reported that an English brand of heavy calcined magnesia, sold in competition with theirs, has, upon analysis, been found to consist simply of hydrated gypsum.

FUMIGATING PASTILS FOR FLIES AND MOSQUITOES.

Vomacka[19] commends a mixture of 100 parts each of coarsely powdered thyme leaves, lavender flowers and Dalmatian insect powder, with 90 of saltpetre, 9 of potash chlorate, 20 of gum tragacanth, and sufficient water to make into a mass. This forms an efficient and pleasant pastil for killing such insects.

WHALE EXTRACT.

A new food preparation has been introduced into Europe under the name of whale extract. This, from its cheapness is likely to become more widely known. It has, by the analysis of Dr. Otto Schweissinger,[20] of Dresden, the following composition here shown in connection with an average commercial meat extract:

	Whale.	Meat.
Water	23.23 %	23.01 %
Organic Matter, including Nitrogenous	59.07	60.00
Nitrogenous	4.12	7.44
Mineral Matter, including Salt	17.79	17.18
Phosphoric Acid	5.30	

ALUM BAKING-POWDERS.

Prof. J. W. Mallett, of the University of Virginia, has come to the following conclusions from his experiments with 27 samples of 17 brands of alum baking-powders: (1) These powders, as found in retail trade, give off very different proportions of carbolic acid gas, and therefore require to be used in different proportions with the same quantity of flour, some of the inferior powders in largely increased amount, to produce the requisite porosity in bread. (2) In these powders there is generally present an excess of the alkaline ingredient, but this excess varies in amount; and there is sometimes found, on the contrary, an excess of acid material. (3) On moistening with water, these powders, even when containing an excess of alkaline material, yield small quantities of aluminum and calcium in a soluble condition. (4) As a consequence of the common employment of calcium acid phosphate along with alum in the manufacture of baking-powders, these, after use in bread, leave at any rate most of their aluminium in the form of phosphate. When alum alone is used, the phosphate is replaced by hydroxide. (5) The temperature to which the interior of bread is exposed in baking does not exceed 212° F. (6) At the temperature of 212° F., neither the water of combination of aluminum hydroxide, nor the whole of the associated water of either this or the phosphate, is removed in baking bread containing these substances as residues from baking-powder. (7) In doses not very greatly exceeding such quantities as may be derived from bread as commonly used, aluminum hydroxide and phosphate produce, or produced in experiments upon myself, an inhibitory effect upon gastric digestion. (8) This effect is probably a consequence of the fact that a part of the aluminum unites with the acid of the gastric juice, and is taken up into solution, while at the same time the remainder of the aluminum hydroxide or phosphate throws down in insoluble form the organic substances constituting the peptic ferment. (9) Partial precipitation in insoluble form of some of the organic matter of food may probably also be brought about by the presence of the aluminum compounds in question. (10) From the general nature of the results obtained, the conclusion may fairly be deduced, that, not only alum itself, but the residues which its use in baking-powder leaves in bread, cannot be viewed as harmless, but must be ranked as objectionable, and should be avoided when the object aimed at is the production of wholesome bread.

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[9] Med. Pr. Circ., June 26, p. 669.
[10] Nature, June 20, p. 192.
[11] Am. Jour. Pharm., 1889, p. 337.
[12] Report of 1888.
[13] Bull. Soc. Chimique, I, 157.
[14] Centr Med. Wiss., 1888, p. 160.
[15] Berichte Deutsch. Chem. Gesell, 1888, p. 3290.
[16] United States Consular Report, April, 1889, p. 589.
[17] Pharm. Zeitung, xxxiii, p. 522.
[18] Amer. Pharm. Jour., 1889, p. 121.
[19] Druggists' Circular, 1889, p. 20.
[20] Pharm. Centralb., xxx, p. 96.

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Clinical Department.

A CASE OF PARTIAL PLACENTA PRÆVIA IN A MULTIPARA.[1]

RECURRENT HÆMORRHAGE BETWEEN THE SEVENTH AND EIGHTH MONTH. DELIVERY BY MANUAL DILATATION.

BY A. D. SINCLAIR, M.D.

Mrs. ——, about forty-two years of age, a multipara, had painless hæmorrhage about seven months and a half after pregnancy. The bleeding recurred again and again for two weeks but whether profuse or not I did not ascertain. She then called her family physician who tamponed the vagina during five consecutive days. He found the cervix very rigid and the os uteri small until the fifth day, when the cervix softened. At this time I was called on to aid in the case. The patient showed the loss of blood and was nervous. The vagina was largely dilated by the sponge tampons, and the cervix could be easily dilated, manually. Forced delivery was advised. The womb was readily entered and the child turned and extracted by the feet in about fifteen minutes. The placenta was found freed from the uterine wall on the left side to the extent of about two inches, but its upper segment was unnaturally adherent to the uterine wall. The placenta was smaller, thinner and more feeble than ordinary, contraction and retraction normal. The uterine cavity was thoroughly cleansed with warm water containing 1 to 3000 corrosive sublimate, the patient cared for in every way and made comfortable. Three days later she was reported to have had a decided chill with rise of temperature and pulse. She was given a uterine douche by her physician, and two grains of quinine in pill every hour, with the result that the temperature and pulse both fell and in a day or two were normal, and did not rise again. She made a good recovery. The infant, a feeble thing, lived three or four days.

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A CASE OF PUERPERAL ECLAMPSIA.[1]

BY T. J BRODERICK, M.D.

Mrs. M. W., thirty years of age, primipara, has enjoyed health up to her present illness. Married, June 27, 1888; and menstruated, July 6, 1888, for the last time. Her father is alive, her mother died twenty-seven years ago from some difficulty during child-birth. Mrs. W. went along in pregnancy comfortably, to within two weeks of her delivery, at which time her present illness began. During this time she noticed her eyelids and feet swollen; headache troubled her; nausea, vomiting, and loss of appetite.

On Sunday, March 24th, she ate her supper, and retired at 10 P. M. She did not sleep, and at 12 P. M. pains were present in her abdomen, which she ascribed to the food she had eaten. At 1 o'clock Monday morning she suddenly became unconscious, foamed at the mouth, eyelids opened, eyes stared, limbs stiffened. She became conscious in about half an hour, but did not feel well.

The pains in the abdomen continuing, with occasional nausea and vomiting and headache, I was sent for, and saw her for the first time, Monday the 25th, at 4.30 A. M. She was in bed, and complained of pains in her abdomen, headache, nausea and vomiting. Her eyelids and feet were œdematous, the right foot more so than left. Pulse 84. Uterus enlarged to about eight months' pregnancy, with contractions causing the pains in abdomen. Fœtal heart-sounds heard on the right side of abdomen, and one hundred and thirty-eight beats to the minute. I requested her to move to the opposite side of the bed to make a vaginal examination. She raised herself on her elbow, but suddenly fell back unconscious, on the bed. Her eyelids closed, then opened, eyes fixed, limbs stiffened, respiration ceased, soon followed by twitching of muscles of the face, moving the arms and legs, stertorous respiration and slight frothy saliva at mouth, and gradual return of consciousness in an hour. Then followed a second convulsion, severer than the first. I saw, during the tonic period marked cyanosis and swelling of face, absence of respiration, slow and irregular pulse, followed by the chronic stage with loud, stertorous and irregular respiration, rapid and feeble pulse, frothy saliva at mouth, and convulsive twitching of muscles of face and extremities. From this time she remained unconscious. A third convulsion followed in one hour, and a fourth in two hours after, or at 9 A. M., having had five convulsions in nine hours.

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[1] Read before the Obstetrical Society of Boston, April 13, 1889.

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At this time Dr. Forster was asked to see her in consultation. She was in bed, unconscious, breathing normally, skin perspiring freely, lips red and face swollen, pulse 84–92, and temperature 99° half an hour before. No urine or fæces passed. Delivery by internal version was decided as the proper course to pursue, but as the patient was comfortable at the time, delay was counselled for a time. At 11.30 A. M., a sixth convulsion occurred, not so severe as the previous three, and at 1.45 P. M., a seventh followed; after which I drew off urine (in amount about two ounces), with blood, and about one-half per cent. of albumen present. Then, at consultation, it was deemed advisable to empty uterus as soon as possible. From 2.30 P. M. to 4 P. M. she had two slight convulsions. At 4.45 P. M. or seventeen hours after the first convulsion, version was begun, Dr. Forster, Dearborn and Broderick present. During dilatation of vagina a slight convulsion occurred, and the hand entered the vagina in twenty minutes. During dilatation of os the membranes were accidentally ruptured. Before complete dilatation of os pulsation could be felt in chord but it was slow and irregular. When the hand entered the uterine cavity in one and three-quarters hours no pulsation was present. The position of child was verified as O. R. A. The left leg was seized, the child turned and head expelled in two hours from the commencement of dilatation of vagina. The placenta was expelled in ten minutes with slight hæmorrhage. The pulse varied from 120 to 135 per minute during version. Fifteen minutes after delivery the pulse dropped to 108 per minute. Within the next two hours, two slight convulsions occurred. At 10 P. M., or three hours after delivery, a severe hæmorrhage occurred. Pulse 135, and for a time absent from wrist; lips and face pale; limbs cool; tossing arms and body about the bed, and sighing. The hæmorrhage ceased and in one hour the pulse was 120, and patient quiet in bed.

At 6 A. M., Tuesday 26th, pulse 92, temperature 98.5°; no urine passed since 2 P. M. the previous day. At 10 A. M. I drew off her urine; specific gravity 1014, slightly acid, albumen about one-third per cent. She remained semi-conscious during the day. At 6 P. M., Tuesday, temperature 99°, pulse 94. Comfortable Tuesday night and conscious Wednesday morning with temperature 99.5°, pulse 100. Urinated voluntarily, passing nine ounces; specific gravity 1011, pale in color, albumen present. Œdema of eyelids and feet disappearing, and on the seventh day entirely absent. The highest temperature 101° was on the evening of the fourth and morning of the fifth day. The highest pulse after hæmorrhages was at the same time, 115–112. On the 14th day temperature and pulse normal, and have continued so to the present time. The last twenty-four hours the urine in amount is thirty-five ounces, color pale, specific gravity 1016, reaction slightly acid, albumen about one-sixth to one-eighth per cent.

Diagnosis.— Puerperal eclampsia, caused by uræmic poisoning from acute Bright's disease.

Prognosis.— Mother alive, child dead.

Treatment.— When first seen and diagnosis made, I gave her a quarter of a grain of morphine subcutaneously, and followed it with a warm, moist air-bath and within half an hour her body and limbs were perspiring freely. Three-fourths of an hour after the morphine I administered ether, and kept her under the influence of it with occasional intermission, till after delivery; two and one-half hours after commencing anæsthesia I gave her twenty-five grains of chloral by rectum, and in one hour repeated it. After expulsion of child, a subcutaneous injection of ergot, and expulsion of placenta by pressure on uterus. When post-partum hæmorrhage occurred, she received thirty minims of fluid extract of ergot subcutaneously and thirty minims of ether and firm pressure on the uterus and warmth to extremities. The after-treatment was rest in bed, milk diet and water freely.

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A CASE OF PUERPERAL ECLAMPSIA AT THE SIXTH MONTH, TERMINATING FATALLY.[1]

BY DAVID A. COLLINS, M.D.

Mrs. C., primipara, aged twenty-four, in January last noticed a slight swelling about the feet and ankles which gradually extended up both legs, involving eventually the abdomen, arms, hands and face, there being a slight puffiness of the lower eyelids. As this state of affairs occasioned no unpleasant symptoms, it was allowed to pass unheeded until about the first of March, when she began to complain of severe headaches, nausea and vomiting, for which on the 11th of March she consulted her family physician, Dr. E. N. Whittier, who examined her urine and found it to contain about three-quarters per cent. of albumen.

The next morning, the 12th, at 5. A. M. the first convulsion occurred. I arrived at 7 A. M. and found Dr. E. J. Forster in attendance. He had placed her under ether, she having had three convulsions in the two hours. A hot-air bath was applied and Dr. Whittier was sent for. In the meantime I relieved Dr. Forster for two hours during which time she had three convulsions. At 10 A. M. Dr. Whittier arrived, and the induction of labor was begun by manual manipulations. At the end of two and one-half hours the os was dilated sufficiently to admit the hand, when the membranes were ruptured and a foot brought down. The trunk was delivered without much difficulty, but it was found that the cervix had contracted quite firmly about the neck, for which manual dilatation was again tried with but little success. The traction on the trunk caused a tearing of the neck, which continued to tear until it was necessary to completely sever the body from the head. The forceps were now applied to the head, but were ultimately abandoned through fear of lacerating the cervix; and it was decided to do craniotomy, which was performed by Dr. Forster, he perforating the head through the mouth, and delivering with the cranioclast. The placenta was expressed ten minutes after. A bi-chloride douche (1-3000) was given and antiseptic pads applied. It was now 1.30 P. M., just three and one-half hours since the induction of labor was begun. At 2 P. M. the next convulsion occurred, and the ether was again applied, and a subcutaneous injection of morphia (gr. ¼) was given. At 3 P. M. she had another convulsion, and at 3.30, the injection of morphia was repeated and the hot-air bath was given with little effect. At 4 P. M. a subcutaneous injection of brandy was given. The next convulsion occurred at 5 P. M., from which time up to 10 P. M., she had four very violent spasms. At 11 P. M. the catheter was passed and eight ounces of urine were drawn.

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[1] Read, by invitation, before the Obstetrical Society of Boston, April 13, 1889.

March 13th. First convulsion at 3 A. M., followed by another at 7.30 A. M. At 8 A. M. the hot-air bath was applied, and she was given an injection of ten minims each of digitalis and brandy, which was repeated at 10.25 A. M. At 10.30, Dr. W. L. Richardson arrived, and ordered one-sixth of a grain of pilocarpine, which was given at 10.55 A. M. (I would state here that our reason for not giving pilocarpine earlier was the fear of producing profuse salivation while we were obliged to keep our patient in a state of complete anæsthesia.) This was tried, but as she reached a semi-conscious state she was seized with another convulsion. The axillary temperature at noon was 106.2°, pulse 150, respiration 20; at 3 P. M. it was 105.2°, pulse 142, and respiration 26. The catheter was passed at 5 P. M. and four ounces of urine drawn which contained about three-quarters per cent. of albumen. At 5.30, the bi-chloride douche (1-3000) was given. Lochia good. At 5.40, repeated the injection of pilocarpine. Temperature at 6 P. M. 104.2°, pulse 150, respiration 20. The next convulsion occurred at 8.30. At 9 P. M. temperature 106, pulse 160, respiration 26. At 11 P. M. the last convulsion occurred. At 12 temperature 108°, pulse 155, respiration 35.

March 14th. Catheter passed at 1 A. M. (no urine in the bladder) after which time the patient began to fail. The ether was discontinued at 3 A. M. Temperature at that hour 105.2°, pulse 150, respiration 30. At 6 A. M. the temperature was 104.2°, pulse 160, respiration 24; at 9 A. M. temperature 106, pulse 170, respiration 32. The brandy and digitalis injection was given at 10.30. and repeated at 11.15 A. M. Temperature at noon 105°, pulse 164, respiration 28. At 3 P. M. she was given another injection of brandy and digitalis, the temperature now being 107.8°, pulse 168, respiration 30. At 3.30 P. M. an injection of brandy was given. About 4 P. M. she vomited, the material having a highly urinous odor. At 6.45, another injection of brandy was given. At 9 P. M. the temperature was 107°, pulse 170, respiration 24. After this hour she began to sink quite rapidly until 10 P. M., when she died, just sixty-five hours since the commencement of the convulsions, of which she had nineteen, seven being ante-partum and twelve post-partum.

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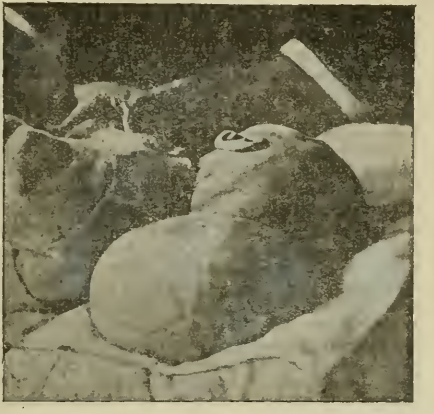
A CASE OF HYDRENCEPHALOCELE.[1]

BY HORACE E. MARION, M.D.

Male child, sixty days. At birth, January 28th, there was a tumor, pediculated, from over site of posterior fontanelle, as large as the child's head. At birth the face presented, chin under the pubes. Labor rapid, without complications, as was the convalescence of mother. Infant was tended on a pillow placed on a thin piece of board the size of pillow, and fed from a bottle, it being so difficult for mother to hold child to breast; besides, it was not believed that the child would live, so thin was the wall of the tumor in many places. It was translucent over every part, and so heavy that the child could not move its head at all, but was obliged to lay as placed. The forehead was markedly retreating.

The head and tumor grew, but the body and limbs did not. He was shown at Massachusetts General Hospital, when three and one-half weeks old. At the age of five weeks, I aspirated, removing about two-thirds of a pint of clear fluid, as clear and limpid as water. The whole tumor collapsed, except in the upper portion, which was translucent and was supposed to be another cyst or compartment. The puncture was at the pedicle, directed into the tumor. From the aspirations I felt comparatively certain that it contained nothing but fluid and perhaps some gelatinous material. The irregular contour of the posterior fontanelle could easily be made out.



It would have been better to have tried to have evacuated the whole tumor. I did not persist, as I thought I had sufficiently demonstrated its character, and beside I wished to produce as little shock as possible. Within twenty-four hours the tumor had completely refilled.

From this time the child grew more and more of a care. The body and limbs seemed to emaciate. There was a constant mucus discharge from the nose. In one place on the tumor there was a scab from which there was more or less oozing.

The parents, of their own accord, said they were willing that I should try anything for the child's relief, even to complete removal. As there was nothing but a protracted death to look forward to, if left alone, it was decided to attempt its removal. The parents were told that there were many chances against the child's going through an operation.

Dr. R. R. Andrews kindly and very artistically photographed the baby. Dr. M. H. Richardson kindly assisted, and gave me the advantage of his rare tact in such doubtful operations.

Making a snip with the scissors over one of the places that seemed but the merest film, it proved to be gelatinous, and a much deeper cut had to be made. The contents of the tumor were evacuated; it was made up of several separate compartments or cysts, which had to be evacuated separately. At the pedicle there was more resistance than in the gelatinous portion above. This proved to be brain substance, a small portion of which was removed in cutting off the redundant skin. The flaps were hurriedly stitched together over the brain substance, the child looking from the first as if it would be impossible to finish the operation. Indeed, I was indebted to Dr. Richardson for much timely help.

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[1] Read by invitation, before the Obstetrical Society, of Boston, April 13, 1889.

The wound was dressed with antiseptic cotton, and the child given to its mother; it died about half an hour after the operation.

No further examination of child's head was allowed.

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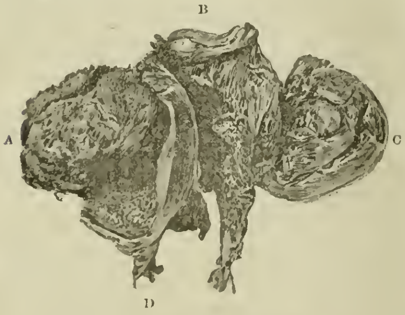
TUBAL PREGNANCY: OPERATION, RECOVERY.[1]

BY GEORGE HAVEN, M.D.

Mrs. M. consulted me on March 27, 1889, and gave the following history. Is thirty-one years old; has been married for ten years, and is the mother of five children, the youngest being now seventeen months old. She remained in bed for five days after her last confinement, and felt perfectly well and strong. Thirteen months after the birth of the child, she menstruated for the first time, the flow lasting for three weeks. She now felt much pain in lower abdomen and back, and was compelled to remain in bed from one to three days each week; had very little appetite, and vomited almost constantly. Nine weeks later she had one or two labor pains and passed a mass about the size of a pear. She now grew rapidly worse, having much more pain, and rarely leaving her bed. Says that when the pain came on, her abdomen was very tense, that her knees were flexed upon it, and that the slightest weight gave her great pain. The bowels were constipated, and when a movement was produced, the pain was excruciating; vomited constantly. Morphia was given in solution, a teaspoonful of the mixture being taken p. r. n.



A, Mass in tube. B, Broad ligament. C, Ovary. D, Uterine end of tube.

She looked pale and anxious; abdominal wall lax; examination painful; Douglas's fossa was filled by a mass of uncertain shape, which extended towards the right side; the uterus was pushed forward, felt large, but was freely movable. Laporatomy advised. She was asked to see Dr. C. M. Green, who also advised an operation.

On April 5th she went to a private hospital, and on the 6th I opened her abdomen. Dr. Green was kind enough to be present, Drs. Reynolds, Lovett and Sears assisting. The peritoneum was thickened by old inflammation. The mass was easily felt on the right side, and was adherent to the sides of the pelvis, with adhesions running in all directions. It seemed at first an almost hopeless task to free it; but after much tearing, it was brought outside of the abdomen. The larger adhesions were tied and cut; the tube, ovary, and broad ligament were all removed together. The tissues were very friable, and it was only by tying very lightly that the ligatures were prevented from cutting. The abdominal cavity was washed out with warm water, and the wound closed with seven silver sutures. A drainage-tube was inserted, but was removed on the second day.

The patient left the hospital on the twentieth day after the operation. The temperature was never over 100°, and the highest pulse was 90. I have seen her twice since she left. She looks like a different woman, and says she feels perfectly well. Dr. H. H. Sears kindly examined the specimen for me, and says, "The most interesting part of your specimen; namely, the mass in the tube, showed at place of insertion, under the microscope, the presence of chorionic villi, thereby settling the diagnosis of tubal pregnancy."

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Reports of Societies.

AMERICAN OPHTHALMOLOGICAL SOCIETY.[1]

AFTERNOON SESSION.

THE TREATMENT OF CARIES AND NECROSIS OF THE ORBIT,

by Dr. H. Knapp, of New York.

The upper wall of the orbit is the most frequent seat of disease and here its consequences are most dangerous. In every case of caries and necrosis of the orbit the condition of the neighboring cavities and especially the nose should be carefully investigated. Foci of suppuration should be freely opened, the cavity thoroughly cleansed and drainage established. This can be well accomplished by small silver tubes provided with flanges. Rough bone should be scraped away with a sharp spoon, necrosed portions of bone should be removed as soon as they become loose or when they can be detached without injury to adjacent tissues. The eye-ball should be protected and if there is insufficient closure of the lids, a plastic operation should not be postponed until the cornea becomes ulcerated from exposure.

MULTIPLE CYSTS OF THE IRIS OCCURRING IN BOTH EYES,

by Dr. H. W. Williams, Boston.

The subject was a girl nine years of age. In the right eye there was a projection resembling a large cyst extending from the upper margin of the pupil. A similar growth projected from the temporal border. At the inner part there were two small pedunculated growths. All were of the color of the iris. In the left eye, two somewhat oval cysts filled the pupillary space. Through the square opening left in each pupil there was a little oblique vision.

SARCOMA OF THE OPTIC NERVE.

by Dr. T. Y. Sutphen, of Newark.

The patient was ten years of age. The tumor involved the left orbit and was of two years' duration.

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[1] Reported by invitation, to the Obstetrical Society of Boston, April 13, 1889.

[1] Concluded from page 137 of the Journal.

It was of a mushroom shape and sprang from the optic nerve. It size was 6 in. by 5¼ in., and 2 in. thick. It was readily removed with curved scissors. As much as possible of the nerve was removed.

EXTENSIVE VASCULAR GROWTH IN THE VITREOUS.

by Dr. George C. Harlan, Philadelphia.

The patient a woman, fifty years of age, presented herself November 29, 1888, on account of disturbance of vision. Examination of the right eye, showed the fundus to be slightly hazy, with small dull white spots about the macula, the remains of old hæmorrhages but no recent exudation. The disc was obscured by a delicate network of vessels. Otherwise there was no opacity. There was no stroma. Up to March 2, 1889, there had been several retinal hæmorrhages, but there had been nochange in the vascular membrane. Vision had been reduced to $\frac{20}{70}$.

EXTRACTION FROM THE VITREOUS OF PIECES OF STEEL BY THE MAGNET.

by Dr. O. F. Wadsworth, Boston.

The author described two cases in which the piece of steel was removed by passing an electro-magnet into the vitreous through an opening in the sclera. In the second case, the operation was followed some weeks later by a separation of the retina beginning at a point opposite that at which the puncture was made.

CORNEAL TRANSPLANTATION.

by Dr. J. O. Tansley, of New York.

The speaker reported a case in which he had done this operation for opacity of the cornea. At the first operation the opacity was not removed to its full depth and although the cornea cleared to a certain extent, the result was not satisfactory. The operation was therefore repeated, but without any improvement in vision. In both operations there was primary union of the graft and in neither was there any inflammatory reaction.

DISCUSSION.

Dr. L. Webster Fox, Philadelphia: I have performed the same operation in the case of opacity of the cornea where the patient could just distinguish light from darkness. The graft healed readily without inflammatory reaction, and the patient obtained useful vision and could almost count fingers.

AN ANALYSIS OF SOME OF THE OCULAR SYMPTOMS OBSERVED IN SO-CALLED GENERAL PARESIS.

by Dr. Charles A. Oliver, Philadelphia.

These observations were made on twenty well-marked cases of general paralysis of the insane. The study was limited to subjects in the so-called second stage of the disease, where the psychical symptoms had become of such a character as to necessitate control and where motor and sensory derangement had become more or less manifest. Care was taken that each subject was seemingly free from any extraneous general disease or local disorder, and the entire study was limited to the male sex so as to escape any conflicting and complicating changes that might appear in connection with the many diseases peculiar to the female sex. Thirty observations were made resulting in the following summary:

(1) The sensory changes herein described, which have been limited to unequal optic nerve degeneration, decrease of retinal circulation, with subnormal direct and eccentric vision for both form and color, distinctly show lowered sensory response.

(2) The motor symptoms, consisting in unequal and feeble movement of the irides, causing inequality and irregularity of pupillary areas, the peculiar form of ataxic nystagmus, the slight loss of ciliary tone, all express want of proper muscle action, — true paresis.

(3) The peculiarly local conditions shown in the fundus, such as the pigment massings, the crescents of absorption, the disturbed and granular condition of the choroid, etc., all indicate wear and tear of an abused and irritated organ.

(4) Therefore, these observations upon the ocular apparatus, which were most probably made during the second stage of the disease known as general paralysis of the insane, show not only local changes, but distinctly demonstrate that the series of sensory motor disturbances found, are but the peripheral expressions of one of the many indices of gradual loss of neural strength and power in this disease.

Dr. George C. Harlan, of Philadelphia, reported a case of

HYSTERICAL BLINDNESS

of ten years' duration in a male twenty-two years of age.

Dr. Samuel B. St. John, of Hartford, described

A CASE OF HEMIANOPSIA WITH PECULIAR CEREBRAL SYMPTOMS.

Dr. B. Alexander Randall, read a paper on

SIMPLE TESTS OF THE OCULAR MUSCLE.

Dr. T. Y. Sutphen, of Newark, N. J., reported

A CASE OF DOUBLE PURULENT CHOROIDITIS RESULTING FROM MENINGITIS.

February 23, 1887, was called in consultation to see G. W. B., a robust farmer, aged thirty-nine years. He had always been healthy, with the exception of an occasional "bilious headache." Never had any specific trouble. The history was that on February 9th, he came in at noon perspiring very freely. That evening he suffered with intense headache. The next morning he was apparently well, but at breakfast had a violent chill with aching of the whole body, this was followed by high fever. Leaving the breakfast-table was the last that the man remembered for three months. From this time the patient rolled and tossed in bed without decided delirium, but being in a stupid condition and easily restrained. Questions were answered only after frequent repetition and the replies ran into complete incoherence. On the third day of the illness the body became quite rigid with the head thrown backwards. On the fourth day, the left hand and forearm became swollen and the right eye inflamed, the left eye became inflamed on the tenth day. Later the left foot became swollen. The swelling of the hand and foot lasted about a week and then subsided. The fever then became less violent and the general condition improved but the mental sluggishness remained. There was no paralysis, no convulsions, no vomiting. At the end of the third week he had a slight chill and another after he was out of bed.

At present the man is apparently in good health. He has lost none of his functions, and his mind is perfectly clear. When first seen by the writer the eyes were in the following condition: No swelling of the lids; moderate pericorneal injection; cornea clear; anterior chamber normal in depth; irides slightly discolored; pupils moderately dilated, with a yellowish reflex from the anterior portion of the vitreous. There was no perception of light; no tenderness on pressure, but a marked lessening of the tension of the globe. Three days later, the anterior chamber in each eye was obliterated by pressure from behind the lens; the eyeballs being harder than normal. One week later, the anterior chamber was again restored and tension had again fallen much below the normal. From that time there was progressive atrophy of both eyes until now there is left only the greatly shrunken globes, with of course, absolute blindness.

In this case there must have been an extension of the intra-cranial inflammation along the sheath of the nerves and not a forcing of the products of inflammation forwards, as sufficient pressure within the cranium to produce this must evidently have become apparent by more or less paralysis.

The case is reported simply as a clinical contribution to this somewhat rare and obscure trouble which is certain to be met with in the course of practice.

THURSDAY — MORNING SESSION.

CONTRIBUTIONS TO THE SUBJECT OF TUMORS OF THE ORBIT AND NEIGHBORING CAVITIES,

by **Dr. C. S. Bull**, New York.

Case I was an adenoma sarcoma of the lachrymal gland. It was operated on two years ago. There has been no return.

Case II was one of abscess of the ethmoid cells, frontal sinus and orbit in a male aged forty-six years. It was opened, washed out and drained. There was perfect healing.

Case III was tumor of the maxillary antrum, nasal fossa, ethmoid cells, orbit and cranial cavity. The eye was enucleated and the maxillary antrum cleaned out. A large opening was found through the orbit into the anterior fossa of the skull and through this the tumor extended. The evening following the operation the patient became comatose and died the next morning.

DISCUSSION.

Dr. H. Knapp, New York: The report of these cases shows the necessity of early operation in all cases of tumors of the orbit or near the orbit.

Dr. B. A. Reeve, Canada: In a number of these cases of empyema of the frontal sinus, I have found hypertrophy of the middle turbinated bone. This is a point of importance in etiology and prophylaxis.

CASE OF DOUBLE CHOKED DISC DUE TO INTRACRANIAL TUMOR, WITH AUTOPSY,

by **Dr. C. S. Bull**, New York.

The patient, a young married woman, twenty-three years of age, was seen June 30, 1888. In February, 1888, had a miscarriage and was quite ill for a couple of weeks. There was dull headache at vertex. This became more severe. During April, there were occasional attacks of diplopia. During May there was failing vision. When examined, $V = \frac{18}{xx}$ in each eye. Accommodation was normal. There was no peripheral limitation of the field of vision either for form or color. There was an irregular negative scotoma for all colors. There was marked exudative neuro-retinitis with hemorrhages in both eyes. Urine proved normal on examination. The only symptoms of intracranial disease were the lesions of the optic nerve and the headache at the vertex. The diagnosis was intracranial tumor at the base of the brain. Vision rapidly failed, and by September 25th there was no perception of light. The mental faculties gradually became impaired. Right hemianæsthesia came on. The patient died May 5, 1889. Autopsy showed a tumor involving the corpora quadrigemina and extending to the anterior crura of the cerebellum. The growth appeared to be a glio-sarcoma.

Dr. O. F. Wadsworth, Boston, reported a case of torticollis cured by

TENOTOMY OF THE EXTERNAL RECTUS.

PARTIAL TENOTOMIES IN CASES OF NEURASTHENIA WITH INSUFFICIENCY OF THE OCULAR MUSCLES,

by **Dr. Myles Standish**, Boston.

The author reported five cases in which he had performed this operation on account of constant headache, inability to use the eyes and neurasthenic symptoms. In all but one there was marked and prompt relief of the local and general symptoms by the operation. Cases requiring operation are comparatively few.

NOTES ON SOME VAGARIES OF ACCOMMODATION,

by **Dr. David Coggin**, Salem.

One case was of hypermetropic astigmatism passing into myopia. A case of recurrent spasm of accommodation was also reported. The third case was one of temporary anomaly of sight occurring daily. In the morning could see well, but in the afternoon could not recognize objects across the street. Double vision also occurred. The disturbance is gradually disappearing.

EFFECT UPON THE ACCOMMODATION OF A PATIENT'S EYE CAUSED BY LOOKING INTO A MIRROR SET OBLIQUELY IN THE ROOM DURING OPHTHALMOSCOPIC EXAMINATION,

by **Dr. E. E. Holt**, Portland.

Directing the patient to look with one eye into a mirror set obliquely while the other was examined with the ophthalmoscope an element of ease was found in making the examination and of comfort and steadiness on the part of the patient never experienced before. The eye fatigues quickly in looking at a single object. Looking into the oblique mirror gives the impression of gazing into the distance. A notable change in the pupil will be observed when the patient is directed to look at an object at the distance of the mirror and when he is directed to look at objects reflected from it.

PARALYSIS OF THE SPHINCTER IRIDIS,

by **Dr. O. F. Wadsworth**, Boston.

A case was reported of paralysis of the sphincter iridis, without affection of the accommodation, lasting several months and following the instillation of homatropine in both eyes.

DISCUSSION.

Dr. Samuel Theobald, Baltimore: In all such cases it is important to exclude malingering. It would be possible for the patient by the use of a weak solution to keep up the mydriasis without affecting the accommodation.

Dr. Samuel D. Risley, Philadelphia: Another practical explanation of such cases is the use of a pipette previously used for a solution of a mydriatic, for a solution which contains no mydriatic.

Dr. **John Green**, St. Louis, presented a series of

GEOMETRICAL CONSTRUCTIONS ILLUSTRATING CERTAIN CASES OF OBLIQUE PENCILS REFRACTED AT CYLINDRICAL AND SPHERICAL SURFACES.

Dr. John Green also read a paper on

SOME OF THE STEREOSCOPIC ALTERATIONS EVOKED BY UNEQUAL GLASSES PLACED BEFORE THE TWO EYES.

Dr. **Samuel Theobald**, Baltimore, presented a paper on

THE EMPLOYMENT OF OLEATE OF VERATRIA TO FACILITATE THE DETERMINATION OF ERRORS OF REFRACTION.

A mydriatic affords valuable aid in myopia and in hypermetropia, but in astigmatism its use is not so satisfactory. In astigmatism he had found great help from the use of a 10 per cent. oleate of veratria to the temple and forehead once a day for three or four days. This seems to exert a quieting effect upon the ciliary muscle, and especially of the radiating fibres, and lessens the tendency to asymetrical accommodation. The following rule was formulated in regard to the correction of astigmatism. When the astigmatism is according to the rule, we need correct only that which is readily made manifest. On the other hand, in astigmatism against the rule, we are warranted in correcting fully every part of the defect which can be rendered manifest.

THE INEFFICIENCY OF HYDROBROMATE OF HOMATROPINE IN CONTROLLING THE ACCOMMODATION FOR THE PURPOSE OF FITTING GLASSES,

by Dr. **E. E. Holt**, Portland.

The experience of the writer was that this drug could not be relied upon. He reported one case in which the latent hypermetropia revealed by three per cent. solution of hydrobromate of homatropine was just one-half of that revealed by one per cent. solution of atropia.

DISCUSSION.

Dr. **Edward Jackson**, Philadelphia: I have found homatropine entirely satisfactory when used properly. The instillations must be repeated at short intervals, five or ten minutes, and three or four instillations practised. The effect rapidly passes off, and the examination must be made within one or two hours. I have followed the use of homatropine by another mydriatic without alteration in the result.

AMETROPIA AS DETERMINED UNDER COMPLETE MYDRIASIS,

by Dr. **Edward Jackson**, Philadelphia.

He had examined 4,000 eyes under complete paralysis, and presented the following table of his results. These were compared with results obtained by another observer without mydriasis.

	With Mydriasis.	Without Mydriasis.
Compound hyperopic astigmatism	40 %	9½ %
" myopic "	9	11
Simple hyperopic "	6	16½
" myopic "	2	24
Mixed astigmatism	6½	2
Hyperopia	31	10
Myopia	4	9½
Emmetropia	1½	17½

Dr. **Jackson** also presented a paper on

ACCURACY IN THE PRESCRIPTION OF PRISMS.

Dr. **W. S. Dennett**, New York, read a paper in which he suggested a

NEW UNIT OF ANGULAR MEASUREMENT FOR PRISMATIC GLASSES.

Dr. **George C. Harlan**, of Philadelphia, exhibited

PERISCOPIC–CYLINDRICAL AND SPHERO–CYLINDRICAL LENSES.

Dr. **W. F. Mittendorf**, New York, presented

A CASE OF AMBLYOPIA DUE TO CHLORAL HYDRATE.

The object was to put on record a case of toxic amblyopia, due to chloral hydrate. The patient had for six months been in the habit of taking 40–60 grains of the drug at night to induce sleep. Suspension of the drug relieved the amblyopia.

EXECUTIVE SESSION.

Officers for ensuing year: *President*, Dr. Hasket Derby, Boston; *Vice-President*, Dr. George C. Harlan, Philadelphia; *Secretary and Treasurer*, Dr. Samuel B. St. John, Hartford; *Corresponding Secretary*, Dr. J. S. Trout, Brooklyn; *Delegate to the Executive Committee of the Congress of American Physicians and Surgeons*, Dr. John Green, St. Louis; *Alternate*, Dr. D. B. St. John Roosa, New York.

The following were elected to membership: Dr. Carl Koller, New York; R A. Reese, Toronto, Can.; Dr. David Harrower, Jr., Worcester, Mass.; and Dr. Geo. E. de Schweinitz, Philadelphia.

The Society then adjourned to meet at the Hotel Kaaterskill, the third Wednesday of July, 1890.

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MEETING OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

April 13, 1889, the President, Dr. **J. P. Reynolds**, in the chair.

Dr. **D. A. Collins** read, by invitation,

A CASE OF PUERPERAL ECLAMPSIA AT THE SIXTH MONTH, TERMINATING FATALLY.[1]

Dr. **T. J. Broderick** read, by invitation,

A CASE OF PUERPERAL ECLAMPSIA.[2]

Dr. **Sinclair** spoke of the great importance of thoroughly dilating and tiring out the muscles of the cervix. If turning is attempted before this is accomplished great difficulty is encountered in the delivery of the after-coming head, and lacerations of the cervix occur. There is a great temptation to turn as soon as the hand has entered the uterus, and before the cervix is thoroughly dilated. The longest time he had spent in dilating the cervix was four hours, the shortest five minutes. He thought the average time needed was about an hour to an hour and a quarter.

Dr. **Richardson** thought that two hours was about the average time needed for this procedure.

Dr. **Foster** had found the dilatation of the cervix to be more readily accomplished in cases of placenta prævia than in eclampsia.

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[1] See page 158 of the Journal.

[2] See page 157 of the Journal.

Dr. Sinclair said that this depended on the amount of hæmorrhage. If this had been profuse, the tissues were relaxed and the cervix was easily dilated.

Dr. Whittier remarked that in Dr. Collins's case three men alternated in dilating the cervix.

Dr. Richardson placed great reliance in cases of eclampsia, on pilocarpine given energetically in doses of one-sixth to one-quarter of a grain, and repeated in half an hour if necessary. The hot-air bath was employed at the same time. He was not afraid of salivation, and had never seen any bad effects from the use of pilocarpine. As soon as profuse diaphoresis occurred the prognosis at once changes and becomes favorable, unless there is chronic disease of the kidneys; and he asked whether any one had seen any dangerous effects from pilocarpine.

Morphia, he now believed, might retard the action of the kidneys, therefore should not be used. Ether need not be used continuously; but at the first sign of a convulsion it should be given to mitigate, if not to prevent, the convulsion. Immediate delivery should, of course, be resorted to. He had noticed that post-partum hæmorrhage was common in uræmic convulsions, and this seems to be nature's way of blood-letting. Cases in which this occurs generally do better than the others. The two cases reported were cases in point.

Dr. J. P. Reynolds had come to the conclusion, from the study of a considerable number of cases, that no good effect could be obtained from the intermittent use of ether in comparison with the continuous use of the same. As he had never seen convulsions recur when the ether was given continuously, he should always prefer this method; and he asked the question whether continuous etherization did not always prevent the recurrence of convulsions.

Dr. Sinclair agreed that ether should, in these cases, be given continuously. Before the days of pilocarpine, calomel and jalap were depended on.

Dr. C. E. Steadman spoke of a patient to whom pilocarpine produced such extreme salivation that he was afraid she would choke to death, the patient being under ether. No effect was produced on the skin, although a hot-air bath was given at the same time.

Dr. E. Reynolds wished to lay stress on the importance of immediate delivery, as every fresh eclamptic seizure was an element of danger. The prophylaxis he considered also of great importance. Cases are common where there is marked œdema, headache, vomiting, concentrated urine with albumen and casts, and where convulsions seem imminent. He had had marked success in the treatment of these cases, even if they were seen for the first time only a few days before confinement. He relied for treatment on free catharsis together with the use of the tinct. ferri chloridi. He referred to a case reported by him a year ago treated successfully by Epsom salts.

Dr. Sinclair spoke of a case he had seen in consultation, and advised immediate delivery. This was refused for twenty-four hours, during which the patient had twenty-seven convulsions. At the end of this time she was delivered artificially, and she died nine hours later.

The President, in summing up, assumed that the Society would admit the following facts:

(1) That there is nothing to be gained by waiting in cases of puerperal eclampsia.

(2) That the continuous administration of ether has not been known to allow the reappearance of convulsions.

(3) That slow manual dilation and emptying of the uterus is repeatedly successful.

Dr. G. Haven, present by invitation, showed a

SPECIMEN OF TUBAL PREGNANCY

he had removed by laparotomy, and gave a report of the case.[3]

Dr. Green, who had seen the case with Dr Haven, said that no previous diagnosis of tubal pregnancy had been made, and that the reason for the operation was the severe pain and continued vomiting, together with the presence of the tumor.

The President asked the Society whether a nursing woman, whose menses return at the first or second month, is more likely to become pregnant than one who does not menstruate.

Dr. Richardson replied that, as soon as she menstruates, she is liable to become pregnant. He was surprised to find from a German author, that, in an analysis of some one thousand cases, menstruation returns in the majority of nursing women at the third or fourth month; and his own inquiries in this direction confirmed this statement, and he thought that the majority of women conceive again while nursing.

Dr. Green wished to confirm these observations, and added that among the lower classes there are many who have not menstruated for years, pregnancies coming at such frequent intervals.

Dr. Sinclair reported

A CASE OF PARTIAL PLACENTA PRÆVIA IN A MULTIPARA; RECURRENT HÆMORRHAGE BETWEEN THE SEVENTH AND EIGHTH MONTH; DELIVERY BY MANUAL DILATION.[4]

Dr. H. E. Marion, reported by invitation,

A CASE OF HYDRENCEPHALOCELE, AND SHOWED PHOTOGRAPHS.[5]

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SEMI-ANNUAL MEETING OF THE WHITE MOUNTAIN MEDICAL SOCIETY.

L. W. HANSON, M.D., SECRETARY, *pro tem.*

The Semi-annual Meeting of the White Mountain Medical Society was held in the old chapel of Dartmouth College, at Hanover, N. H., August 1st and 2d. The Connecticut River and White River Medical Societies both met at the same time and place, by invitation of the White Mountain Society. Upon invitation, several members of the faculty of Dartmouth Medical College, which is now in session, kindly consented to take leading parts, and speak upon subjects pertaining to their respective specialties. This was a new departure for this Society, but proved very gratifying and beneficial to all present.

The meeting was called to order at 3 o'clock, P. M., August 1st, by the President, Dr. George W. McGregor, of Littleton, N. H., who invited the presidents of the visiting societies, Professor Frost and

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[3] See page 160 of the Journal.

[4] See page 157 of the Journal.

[5] See page 159 of the Journal.

Dr. Wood, to seats upon the platform. The Secretary, Dr. C. R. Gibson, being absent, Dr. L. W. Hanson, of Bradford, Vt., was appointed Secretary, *pro tem.*

Professor Connor, of Cincinnati, Ohio, spoke on

THE RADICAL CURE OF HERNIA,

giving a brief history of the various operations proposed, and the present most approved plan of operating.

Professor Webster, of New York, followed with remarks upon

ACUTE GLAUCOMA,

intended to assist the general practitioner in the diagnosis and preliminary treatment of this disease.

Professor Hooper, of Boston, then gave an address on

MODERN SURGICAL METHODS OF TREATING OBSTRUCTIVE DISEASES OF THE NOSE AND NASO-PHARYNX.

At the Evening Session Prof. Paul F. Mundé, of New York, spoke on

SYMPTOMS AND TREATMENT OF FIBROIDS OF THE UTERUS,

in a very plain and practical manner.

Professor Field, of Newton, Mass., read an essay on

SULPHONAL,

giving his experience with the drug.

The Society then adjourned until Friday morning, August 2d, at nine o'clock, when Professor Parish, of Philadelphia, spoke upon

ANTISEPTIC OBSTETRICS,

which elicited a lively discussion.

Professor Cowles, of Somerville, Mass., closed, speaking on the

MECHANISM OF INSANITY.

All the papers and addresses were able and of a practical character; and all present felt that the meeting had been a great success, and one that no member of the societies represented could afford to miss. The thanks of the societies are due Professors Frost and Smith, of Hanover, for their kind offices in arranging for the meeting and the pleasure of the members. A similar meeting is hoped for next year.

Recent Literature.

Diseases of Women. By Dr. F. H. Davenport. Octavo, 311 pages. Philadelphia: Lea Bros. & Co.

This book has two objects: in the first place, to give the student clearly, but with considerable detail, the elementary principles of the methods of examination, and the simpler forms of treatment of the most common diseases of the pelvic organs; and in the second place, to help the general practitioner to understand and treat the gynecological cases which he meets with in the course of his every-day practice. It does not consider the operative part of gynecology, neither does the author intend it to be anything more than the most elementary treatise on the subject.

It is written in a most pleasing style and the reader will find it difficult to put it aside until he has perused every page. We recognize the work of Dr. H. P. Quincy in many of the illustrations; and the clearness and accuracy of this part of the book greatly enhance its value. We do not remember to have seen elsewhere so good a description and perfect illustration of the Sims position.

We have never before seen any exact rules given for the measurement of the vagina for the adaptation of uterine supports; which are here clearly set forth, more particularly in regard to the posterior malpositions. It is our opinion that many of the more elaborate treatise on gynecology would do well to incorporate this chapter in their future editions.

Every gynecological student would do well to preface his course of study by reading this book, and every general practitioner should possess it, if alone for the chapter treating of uterine displacements, the fittings of pessaries, their introduction and care.

The classification of some of the subjects into chapters of symptoms, as amenorrhœa, dysmenorrhœa and menorrhagia, is entirely admissable in this volume. We grant this division has many advantages to the student: we should, however, take decided exceptions to it if the work were a more systematic treatise on gynecology, believing as we do that the only proper division of such subjects is that based on the pathological process which creates such symptoms.

We would suggest, in the next edition, the correction of the following misprints: On page 196 the substitution of "R," for "H" in the name of Dr. J. R. Chadwick; and on page 280, third line from the bottom, the substitution of "hæmostatic action" for "cauterization." The negative pole only has the power of cauterization." The paper, printing and general style of the book is the best, which is what we have a right to expect coming from the house of these well-known publishers.

We can heartily recommend this volume to all interested in the subject of gynecology.

— Mr. Francis H. Underwood, late United States Consul at Glasgow, has found a subject which he considered important enough to make the theme of an official report, in the diet of the poor of Glasgow. It seems that some time ago these people abandoned oatmeal, the traditional staff of life in Scotland, in favor of white bread and tea. This exchange was, according to Mr. Underwood, a most unfortunate one for their physical well-being. To it he ascribes the bodily degeneration and especially the deformities which are very common among the people of that city.

— A source of arsenical poisoning has been described in the columns of the *Lancet* by Dr. McClure, in Indian muslins. A patient of his suffered from arsenical poisoning, and all attempts to trace how the poison entered her system failed, until it was found that for nearly two years she had been working among Indian muslins, tearing them up and making them into covers for sofa-cushions, curtains, and many kinds of home draperies. The muslins were examined, and found to contain arsenic. The patient was removed from her muslins, and rapidly recovered.

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FRENCH INTERNATIONAL CONGRESS FOR THE SUPPRESSION OF ALCOHOLISM: REPORT OF THE SENATE COMMISSION.

IN the report of the above-named Congress, whose sessions were lately held in Paris (from July 29 to August 1, 1889), the old and familiar statement again appears from the official statistics of different European countries, as presented by the referee, that criminality and mental alienation follow a march parallel with the consumption of alcoholic beverages.

The question was discussed whether the number of places where liquor is sold influences the prevalence of drinking usages, and it was shown by figures, that the greater the number of dram-shops in a given locality, the larger the proportion of inhabitants that become addicted to intemperate habits. So plain did this appear, that one of the speakers (Dr. Drysdale, physician-in-chief to the Metropolitan Free Hospital, London), gave as his opinion that one of the best means for repressing the abuse of ardent spirits was to diminish the number of liquor-shops. This view was, however, combated by M. Causderlier, who declared that this measure had not been successful in Holland, where some years ago, the number of drinking-saloons was greatly reduced, and where alcoholism, insanity and criminality had remained the same as before the application of this restrictive measure. With this declaration, M. Milliet, Director of the Statistical Board of the Swiss Confederation, and M. Iscovesco, of Moldavia, agreed. Both these speakers stated that in their respective countries there had been governmental restrictions of the sale of intoxicating drinks, the number of retail shops having been reduced to a certain maximum per canton; in none of these districts had there been any sensible abatement in the evils of alcoholism. It was, however, thought by the majority of those present that the restriction of the number of dram-shops was a step in the right direction, and that high license (*augmentation de la patente*) was a measure calculated somewhat to repress drinking habits. We fail to notice that any more rigorous means of repression were proposed.

In this connection it is interesting to recall to mind the report a short time since presented to the French Senate by a commissioner appointed by that body to inquire into the consumption of alcohol in France, as much from the point of view of the public health and morality, as from that of the national exchequer. It appears from this report, that drinking usages in France have been lamentably on the increase the past fifty years, the average consumption of alcohol per head having quadrupled. Thus, in 1831, it was one litre per head; in 1884, the figure was four litres. The use of ardent spirits, moreover, has steadily gained on the wine-drinking habit, distilled liquors having largely superseded the fermented product of the grape. This is especially so in localities where, owing to the phylloxera, the vine-growing industry has failed.

The commission shows by unimpeachable figures that in those regions where distilled liquors are the habitual intoxicants, the evils of drunkenness attain their maximum, while comparatively little of such abuses is seen in districts, unfortunately too few, where the native wines constitute the popular beverage. It has further established the trite fact "that the number of crimes and offences against good morals is exactly in ratio with the consumption of alcohol in each of the seven great divisions of France." Alcoholism also "produces still other more deleterious effects, which effect the vital force of the country." "We refer," says the commission, "to the influence which the exaggerated consumption of alcohol (and we mean especially those forms known as ardent spirits or distilled liquors), has on the human constitution; it being a fact that the health of children almost always suffers from the alcoholic excesses of the parent. We may attribute, in part, the phenomenon of the continued diminution in our population, so noticeable in many parts of our territory, to the increase in the consumption of alcoholic liquors. In Normandy, for instance, the mortality of young children is frightful, and if the use of ardent spirits is not the sole cause of the lessening of the population in this country and in certain departments (Jura, Basses-Alpes, Lotet-Garonne, etc.), it certainly contributes to the increase of mortality, as well as to the physical enfeeblement of the race."

The commission next proceeds to show that the number of accidental deaths and suicides has increased in the ratio of prevalence of habits of intemperance, and that the proportion of cases of mental alienation due to alcohol has been steadily augmenting. "From 1,496, which was the total number during the quinquennial period of 1861–1865, the number of insane whose mental disease was due to alcohol in the forty-six departmental asylums, has gone on increasing, and from 1881 to 1885 had attained the figure of 7,387; in other words, the proportion of insane whose affection was due to alcoholism, in 1861 was eight per cent. of those admitted to the asylums; it rose in 1855 to sixteen per cent!"

Similar facts are given with regard to the perpetration of crimes, but we have not space for these statistics, though of interest to every advocate of social reform.

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BACTERIA IN MILK AND ITS PRODUCTS.

During the past year investigations on the bacteria of milk have been carried on in the laboratory of Storr's School Agricultural Experiment Station, under the direction of H. W. Conn, Professor of Biology in Wesleyan University, and we deem the subject of sufficient medical importance to call attention to some of the more interesting results, which have already been published in the bulletin of the station for July.

It has been found that milk is a medium in which bacteria grow with the greatest readiness. Some thirty or forty species were found floating in the air in the vicinity of the station. All of these were to be found in cream. Although they grew readily in milk yet cream seemed to be a better medium; probably because it kept longer without putrifying, and thus allowed some of the slower growing species time to develop. Butter is not so good, apparently from a deficiency of albuminous matter. The sweetest butter always contains some bacteria; when they become numerous, the butter becomes tainted.

Milk when first drawn from a healthy cow is free from bacteria; but the short exposure to the air in the act of milking is sufficient to contaminate it. Of eight sterilized tubes having milk drawn directly into them from a carefully washed teat by clean hands, and each tube then plugged with sterile cotton, seven became sour within a few days, and were found to contain many bacteria. The eighth remained sweet for a long time, yet it eventually also changed. Ordinarily, however, the number of bacteria in the air is of little importance compared to those from unclean vessels, which are the great source of infection. In ripened cream each drop has been found to contain from 10,000 to 100,000 bacteria (more of the larger number), and of about thirty species.

Two or three of the species usually found in milk are characteristic. Of these one, the bacillus acidi lactici, produces the ordinary souring of milk. Another, the oidium lactis, grows rapidly, yet seems to produce no important change in milk. The first is always found to be very abundant in the air in warm weather, but at times during a cold winter it is almost absent. Then milk could be exposed in a perfectly clean vessel to the open air for two weeks without going through the characteristic change of souring, yet it would finally curdle with a peculiar odor of decay.

Considered as to their mode of action, four different classes of bacteria were met with in milk. Some induced, at ordinary temperature, the change commonly known as souring. Some others would grow rapidly at such a temperature, but would produce like results only at some higher temperatures. Others would not decompose the milk sugar with the formation of acids and curds at all, but would leave the milk fluid, and sometimes decidedly alkaline, still others though making curds, would produce no acid, but make the milk alkaline instead. The larger number of the species, however, produce both acid and curds at some temperature.

The manner of curdling was found to differ greatly, in some cases a hard curd with a clear whey was formed; in others the curd has no clear whey separated from it, while in other cases the whole milk is turned into a semi-gelatinous mass. With some bacteria the curd is easily broken or cracked, while with others it is very tenacious, sticky and slimy. Sometimes the curd was dissolved in a few days, the milk becoming a clear transparent fluid. In these instances the curd seemed to undergo a change similar to digestion, that is, conversion into peptones.

A characteristic odor was also given off, which differed widely with the varying species of bacteria, smelling like sour bread, soft-soap, salt mackerel, pigs, or a barn-yard, and often of putrefaction.

In so-called ripened cream, bacteria in almost inconceivable abundance are always to be found. The more important results of the process in the cream are the souring, the decomposition of the albuminous matter present, and the development of the desirable flavor. The decomposition of the entangling fibrin liberates the fat globules, whereby their collection together by churning is greatly facilitated. A butter made from such a cream may keep the longer in that it is more free from the albuminous matter necessary for the growth of bacteria, although it would contain a greater number than a sweet-cream butter would in the beginning.

The use of sal-soda in washing, and of "live steam" in the after-drying of milk vessels are of great practical importance, in that the former can thoroughly remove both the fat and curds left from the milk, while the latter will effectually sterilize anything which may be left.

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IS THERE AN ELIXIR OF LIFE?

It is the silly season, and it is perhaps not unnatural that the daily press should have made the most of Brown-Sequard's alleged discovery (see this journal, present volume, page 49), and country and metropolitan newspapers have gravely and comically given the announcement to their readers, with more or less comment and elaboration thereon. As for the attitude of medical journals — we are certain that but for the reputation of Brown-Séquard, very few would have noticed the "discovery."

A correspondent of one of the newspapers asks, "Is an elixir of life possible?" And the editor occupies a column with a learned disquisition on the subject, in which he shows more knowledge of mediæval lore than of sound physiology. But the subject is being taken up by charlatans and quacks, and is capable of doing mischief.

The sooner the general public, and especially septuagenarian readers of the latest sensation understand that for the physically used up and worn out there is no secret of rejuvenation, no elixir of youth, the better. There is no animal or vegetable product, from whatever animal or whatever gland, and however appropriated by the senile organism (by ingestion or injection), that can put back the march of the fell destroyer by one day — except, indeed, so far as it acts as a vital stimulant or nutrient, and how can any stimulant or nutrient undo the effects of atheroma, fatty degeneration, senile atrophy!

We hope we may soon hear the last of Brown-Sequard's disgusting advice to old men, and we cannot refrain in this connection from reiterating the well-known physiological truths: (1) That there is no proof that the secretion of the reproductive glands is the vital fluid *par excellence*, or that its loss is *per se* a cause of enfeeblement; (2) that all artificial excitation of the reproductive apparatus is debilitating, especially to the aged; (3) that the exhaustion which follows sexual erethism is due, not to the loss of a secretion, but to excitation of the nervous system.

MEDICAL NOTES.

— Dr. Henry C. Coe, has been appointed Professor of Gynecology in the New York Polyclinic, to fill the vacancy made by the death of Dr. James B. Hunter.

— The Trustees of the Cook County Hospital, Chicago, are reported to have provided accommodations for the treatment by the Pasteur method, of patients suspected of hydrophobic exposure.

— An unusual prevalence of typhoid fever is reported in the southern district of Chicago, which is attributed to the condition of the drinking-water. The initial cases of the epidemic appeared a few days after a big storm which flushed the sewers, and, it is said, sent their contents out into the crib in the lake.

— It is announced by foreign exchanges that the arrangements for the International Medical Congress in Berlin next year, which opens probably on August 6th, have been confided to Professors Virchow, von Bergmann, and Waldeyer. Invitations have already been extended to all German medical societies.

— The following interesting account of how a boy was wounded in a very critical place, and the injury was shrewdly diagnosticated and wisely treated by a medical student, comes to us in the daily press. We suppress only names.

"The boy, aged fourteen, had been fooling with another lad, aged about sixteen, who was chasing him with an open knife, and upon coming up with him, gave him a cut about six inches long by one and one-half inches deep, extending from a point opposite the upper portion of the sanctum, diagonally across the left ham, severing the glutaeus maximus and exposing the glutaeus minimus. Mr. ——, a student at —— Medical College, stitched the wound to the entire satisfaction of his father, who witnessed his labors. Fourteen stitches were found necessary to close the same."

— The *Chicago Herald* pictures for its readers the "Orton Madstone, which has wrought untold good to humanity. It is estimated that no less than one hundred people have been saved from horrible death through its virtues." It was found by a colored preacher in an Indian mound, was bought by a white boy for a jack-knife, and then started on its career of beneficence.

— The *New York Sun* says that twelve medical students found a suite of rooms on the top floor of an east side building, which they divided into sleeping apartments and study rooms. They were comfortably housed and excellently, though plainly fed, at a cost of $3.33 each, per week. They exchanged among themselves the costlier books of reference necessary for their studies, and organized themselves into a society. Rigid discipline was maintained, and a duty was prescribed for every hour of the day. In the evening and early morning they were regularly quizzed by one of their number specially selected each week for that purpose, upon the lessons for the coming day, and the spare hours were devoted to study and review. Among the members there were three honor men in the examinations, last spring, and there promises to be several more of the same class at the end of the winter's session.

BOSTON AND NEW ENGLAND.

— The conductors of the Old Colony Railroad are, we learn, to be given lessons in removing cinders from the eyes of passengers.

— All past house-officers of the Boston City Hospital, will remember Miss Rose McCormack, the head nurse in Ward B, and will be interested to know that on the 11 inst., she completed her twenty-fifth year as nurse at the hospital. She received a purse and many other gifts from the trustees and physicians of the hospital in recognition of her good work.

— A waitress at a restaurant in Bath, Me., was taken with some sort of a sore throat, and the fellow-boarders suspecting the disease might prove to be something which would lead to an unpleasant quarantine, urged that no doctor be called. After passing through the crisis of the disease she resumed her work at the restaurant, and was discovered distributing the exfoliation of scarlet fever among the 135 boarders.

— The executors of the will of the late Sidney Bartlett has announced the following distribution of the fund of $100,000 bequeathed to the charitable societies of Boston:

Museum of Fine Arts	$10,000
Massachusetts General Hospital	10,000
Kindergarten for the Blind	10,000
Massachusetts Institute of Technology	10,000
Massachusetts Charitable Eye and Ear Infirmary	5,000
Boston Asylum and Farm School	5,000
Boston Provident Association	5,000
Children's Hospital	2,500

Massachusetts Infant Asylum	2,500
House of the Good Samaritan	2,500
Home for the Aged Poor	2,500
Massachusetts Society for Prevention of Cruelty to Children	2,500
Boston Industrial and Appleton Home	2,500
The Sea Shore Home	2,500
Home for Aged Men	2,500
Home for Intemperate Women	2,500
Washingtonian Home	2.500
Boston Young Men's Christian Union	2,500
Free Hospital for Women	2,500
Children's Aid Society	2.500
Associated Charities	2,500
Society for Relief of Aged and Destitute Clergymen	2,500
Industrial Aid Society	2,500
West End Nursery and Children's Hospital	2,500
Convalescent Home	2,500

NEW YORK.

— Dr. George B. Upham, one of the oldest and best-known physicians of Yonkers, died August 9th.

— The American Dental Association, recently in session at Saratoga Springs, adjourned August 9th, after electing the following officers: *President*, M. W. Foster, of Baltimore; *Vice-President*, A. W. Harlan, and J. D. Patterson; *Recording Secretary*, George H. Cushing; *Corresponding Secretary*, Frederick Levy; *Treasurer*, A. H. Fuller. In the Association are now combined the Dental Association, the Association of the Dental Faculties, and the Association of State Dental Examiners; and the most important work accomplished at the meeting was the adoption of a resolution that no college should be represented in the Association that did not comply with the regulations established by the National College Association of Dental Faculties, prescribing a course of instruction of not less than three yearly terms of at least five months each. The next meeting will be held at Excelsior Springs, Mo.

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Miscellany.

A CASE OF ACTINOMYCOSIS.

A case of actinomycosis has recently been under the care of Drs. Kneer and Conrad, of New York, with Dr. F. Lange in consultation. The patient, a German machinist, began to complain of pain and soreness in the right hepatic region in February last. The trouble having continued for some time without relief, exploration was determined upon, and this showed the presence of pus, which under the microscope was found to contain the actinomycis in abundance. One characteristic feature of the symptoms was a continuous high temperature. Injections first of boracic acid and afterwards of bichloride of mercury (1 to 2000), were made from time to time, in the hopes of interfering with the growth of the fungi, and the bichloride seemed to have the effect of bringing down the temperature considerably. Finally, however, pyæmia set in and the patient was carried off by an attack of pneumonia. At the autopsy the destructive effects of the fungus were found to be well-marked. The actinomyces appeared to have first attacked the intestinal canal and then the liver, which weighed nine and one-half pounds, and was studded with myriads of them. The greater part of the left lobe was in a gangrenous condition.

THE TREATMENT OF TABES BY SUSPENSION.

Bernhardt (*Deutsch. Med. Wochenschr.*, 1889, No. 21, summarized in the *American Journal of the Medical Sciences*), has, during the last quarter of a year, treated 19 patients with about 200 suspensions. Most of these were tabetic patients, some of whom had received more than 20 suspensions, others between 15 and 20. By all, even the very ataxic, the treatment was well borne. Apart from the beneficial psychic effect on the patient of a new method of treatment there was an indubitable improvement in nearly every case. Some, it is true, stated that they felt no better, but in the majority Bernhardt recorded amelioration of the lancinating pains, increased ability to walk, diminution of the ataxia, increased vesical power, in some cases a decided influence on the lost sexual power, and in nearly all an improvement in the general condition.

He warns, however, against viewing this plan of treatment as a panacea for such a chronic disease as tabes is, and says that it has not yet been used long enough to permit of a final judgment on its value. It is certain, however, that it is a valuable means, though not for the healing of tabes, yet for the amelioration of many of the most distressing symptoms of the disease.

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PHTHISIS AMONG THE SIOUX INDIANS.

Dr. Treon, Agency Physician among the Sioux Indians, has an article on the above subject in the *Cincinnati Lancet-Clinic* for August 10th in which he says that during the three years that he has been physician at Crow Creek Agency he has entered in the Medical and Sanitary Record of his office 73 cases of consumption, 35 males and 38 females; of these 68 have died, 33 males and 35 females. Eight of this number were under five years of age. This mortality out of a population of less than 1,200 is evidently very high. The great prevalence of phthisis is attributed by the author to poor ventilation of dwellings, to the use of the sweat-bath, and to the use of tuberculous meat, uncooked. Syphilitic phthisis is uncommon; and indeed he states that, as a rule, the Sioux are now quite free from primary syphilis.

These causes, while in a large degree plausable, do not seem quite to accord with the further observation of the unfavorable effect of transportation to civilization, for example to the Hampton Institute.

Dr. Treon says, in this connection; "Sea air, in my experience, has not been beneficial to these people; but, on the other hand, rarely ever fails to hasten the fatal end in this disease. This has been satisfactorily demonstrated by sending the children of these people to Hampton, Va., to school. There are comparatively few of them who do not develop while there this disease, notwithstanding they are examined and supposed to be the healthiest subjects among them. So disastrous has the result of the change been that in many instances the people are unwilling to send their children there to be educated. I have opposed it, but for no other reason than that the change is too violent and results badly for them. I believe I speak the truth when I say there is not a sound one among them. Out of forty boys and as many girls examined at the Immaculate Conception Mission School, at Stephan, Dak., last fall — whose ages ranged from seven to seventeen — forty-nine of them had dulness over the apex of one or both lungs, and twenty of them had enlarged lymphatics or scrofulous sores on their bodies."

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THE REPETITION OF DISEASED PROCESSES AND ESPECIALLY RELAPSES.

A paper by Dr. H. Senator on the above most important and little-understood subject occupies the leading place in the *Berliner Klin. Wochenschrift*, No. 24, 1889. From a translation and summary of its conclusions contained in the *Edinburgh Medical Journal* for August, we make the following extract:

"There are recrudescences, consecutive or after fevers, relapses, and genuine second or more attacks. The recrudescence appears before the original sickness has reached its normal end, and therefore not after, but during the illness, and really represents only a stadium, an exaltation or repetition of isolated morbid phenomena (for example, in the acute exanthemata the rash is renewed) which have not at once reached their full development, but unfolded themselves in a fragmentary manner, and with short pauses as it were, probably because the morbid poison has entered the circulation, not in one dose but in several.

"The 'Nachfieber,' on the other hand, appears *after* the normal course of the original disease has been reached. It is a transitory feverish attack which does not present the characteristic phenomena of the original illness; more or less of fever and feverish disturbances, but without specific symptoms.

"Relapse or recidive and a second attack have not even yet been sufficiently contradistinguished. We commonly say that every renewal of the disease is owing to the renewed operation of the noxious agent which caused it at first, and in the case of infectious disease we think that a new infection has taken place from without. Even Griesinger, who belongs to our time, and was at the apex of science, considered that relapses of intermittent fever or abdominal typhus arose only through new infection from without. This view is now quite given up, save with perhaps one exception. We now generally say that if a sickness appears in a shorter or longer period after a sickness of the same nature has been passed through, and if it can be demonstrated that this second attack is the result of the penetration of the morbid germs from without, we speak of a repetition of the disease, not of a relapse.

"Gerhardt has given us a clear view and a rule by which to go in the acute infectious diseases at least. True relapses, he says, appear within a time which, when reckoned from the first outbreak, does not much exceed the incubation period plus the duration of the illness; they behave thus as if the infection from which they have sprung had been acquired during the course of the first illness; as if this has given no immunity and as if the morbid germs again ran through their developmental phases in the same body. Now, in measles, the incubation period is pretty constant — ten days — that is, till the outbreak of the initial phenomena. These usually last three days, and in the other four the rash is out and over, and desquamation beginning; so we have seventeen days for incubation and duration of illness. In Gerhardt's view we could only speak of a measle relapse, if the disease recurred about seventeen days from the beginning of the first attack. If one sticks to this it is astonishing how narrowly limited is the occurrence of relapse, and how cases which are thoughtlessly so called are not so in reality, but actually new attacks, standing in no other relation to the first illness.

"But it is questionable if even relapses, so limited, are caused by new infection from without, and whether this is their only mode of origin. Most infectious diseases, and specially the acute exanthemata, afford a certain amount of protection from a second attack, and so much the surer the shorter the time after the first illness. One may therefore reasonably doubt whether during the progress of such a disease a new infection in Gerhardt's sense could take place. Surely relapses would be much more frequent than they actually are. Every sick man could reinfect himself from his own atmosphere, which certainly infects others.

"Just as in the infected organism at a very early period, and before the disease has run its course, the poison can be efficacious as regards infection, so it can be efficient as regards its conferring of immunity. It is not impossible, but happens seldom, that during the course of an infectious disease a new infection may take place from without, but essentially this is not different from a repetition of the disease, it may be after years; but, at the same time, in common speech we call the reinfection happening after a short time a relapse, and later on a renewal of the disease.

"But there is another mode of origin of relapses: it is this. The infective germ is not incorporated anew, but a part of the original poison remains latent in the body, and only after the original sickness has run its course does it become efficacious for harm. This idea has lately received substantial confirmation from the fact that Alb. Frankel found, in an abdominal abscess of a man who had gone through typhoid with a relapse five months after the first outbreak of the disease, typhoid bacilli living and capable of development. Ebermaier has made a similar observation in a tibial periosteal abscess of a typhoid convalescent who had been free of fever for several weeks. Valentini found the same in two cases — one of periosteal abscess and one of empyema. May not the inflammatory foci which frequently 'complicate' typhoid not be of the same nature? On the ground of those observations, it is not difficult to suppose that the bacilli may again find their way into the circulation and anew excite typhoid symptoms, even abdominal ones, were they to arrive into the lymph apparatus of the bowel."

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Correspondence.

CARBONIC OXIDE *VS.* ELECTRICITY.

Mr. Editor, — A brief editorial in your issue of last week, comments upon the execution of the death penalty by electricity. Within the past year or more, considerable attention has been given to the question of substituting a better method of execution in place of the conventional mode of dangling the criminal at the end of a rope to the amusement (?) of a gaping crowd of privileged spectators.

The only substitute which has received serious consideration is electricity. Experiments have been made, and it would appear from the results that there are serious hindrances to the adoption of this subtle agent. Meanwhile it would be advisable to inquire whether there are no other agents, which are preferable, provided that a change upon the present mode is desirable.

In carbonic oxide we possess such an agent which has the property of destroying life rapidly and painlessly, when properly administered. Dr. B.W. Richardson, of London, several years since brought this method to public notice for the destruction of small, domestic animals, such as dogs and cats. He stated in an article entitled "The Painless Extinction of Life," that 7,000 such animals had thus been destroyed in London in a few months previous.

This gas may be made from charcoal at small cost, or it may be still more cheaply obtained from the street-mains of any coal or water-gas company.

Water-gas would be far preferable to coal-gas for this purpose, since it contains from four to five times as much carbonic oxide as the latter, and would be proportionably more rapid and fatal in its action, as the increased mortality from this cause in all large cities where it is used, and the inquiries reported to the Legislature of Massachusetts in 1884, have sufficiently demonstrated.

An atmosphere of 25 to 30 per cent. of carbonic oxide, as in the case of water-gas, or still better, one of 50 per cent. or more as may be made from charcoal, would undoubtedly destroy human life in less than two minutes, and without pain.

The writer has used a mixture of about seven per cent., with air, with perfect success in destroying small animals in from one to one and a half minutes without the appearance of pain.

The apparatus for an execution must be of the simplest and most inexpensive sort. A tight, wooden box, three feet square and seven feet high (63 cubic feet), a tightly fitting door, an aperture for admitting a gas pipe of liberal size (two inches in diameter), for applying a rapid supply of gas under ordinary pressure, and another smaller aperture to allow of expulsion of the air; the pipe to be connected with a steel main of larger size. If a higher percentage of carbonic oxide, or the pure gas is desired, a small charcoal furnace would be required for generating it, and storing it temporarily, as in the case of Dr. Richardson's lethal chamber.

Of this method, Dr. Richardson says: "Compared with other modes of extinguishing animal life, such as hanging, drowning, poisoning by prussic acid, shooting, stunning, the lethal method stands far ahead on every ground of practical readiness, certainty, humanity."

The advantages are:

(1) Painless death.

(2) Rapid action. In this respect its action should not be confounded with the slow action of small percentages of gas, such as is illustrated by the accidental deaths often occurring in hotels. These almost invariably happen by exposure to the gas escaping from a mere pinhole or slit in a gas-burner, which consequently forms but one per cent., or a fraction of one per cent. of the air of the apartment, and destroys life slowly.

(3) Economy. The cost of a wooden box or chamber, such as I have described is but a trifle, and the expense of 75 or 100 cubic feet of gas consumed is scarcely worth mentioning, when compared with the expensive apparatus required for an electrical execution.

A writer of a recent sensational article in a Boston daily, commits a curious blunder in proposing carbonic acid or Co_2 for the same purpose. This gas has more or less toxic qualities, undoubtedly, but when compared with carbonic oxide, it is weak and inefficient.

Very truly yours,
S. W. Abbott, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 3, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	850	395	31.80	14.52	22.80	1.66	4.32
Philadelphia	1,010,245	442	226	23.23	9.43	15.41	3.91	1.48
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	203	100	27.93	9.31	23.92	1.47	.98
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	238	121	26.88	11.34	20.16	2.52	3.36
New Orleans	250,000	137	45	24.82	7.29	16.79	.73	1.46
Cincinnati	225,000	98	—	21.42	12.24	6.12	4.08	7.14
Washington	225,000	112	52	31.15	9.79	23.14	1.78	2.67
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	53	22	18.87	17.01	17.01	1.87	—
Portland	40,000	17	10	52.92	5.88	41.16	5.88	—
Worcester	78,292	36	22	50.04	2.78	36.14	2.78	—
Lowell	71,518	44	26	47.67	15.89	40.86	—	4.54
Cambridge	65,552	32	15	43.82	12.52	31.25	3.13	9.39
Fall River	62,647	46	31	62.93	6.51	54.25	4.34	2.17
Lynn	53,334	23	—	26.10	11.75	26.10	—	—
Springfield	40,731	13	6	38.45	—	30.66	—	7.69
Lawrence	40,619	26	16	42.35	—	23.10	11.15	—
New Bedford	37,253	27	18	29.60	—	22.20	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	23	11	47.85	4.35	34.80	—	8.70
Brockton	28,813	10	8	50.00	—	20.00	10.00	20.00
Chelsea	28,167	17	8	23.52	5.88	23.52	—	—
Haverhill	26,058	8	2	12.50	—	—	12.50	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	4	1	—	25.00	—	—	—
Newton	21,553	—	—	—	—	—	—	—
Malden	19,774	8	4	50.00	12.50	25.00	—	25.00
Fitchburg	17,534	7	5	28.56	14.28	28.56	—	—
Waltham	17,332	9	2	11.11	33.33	11.11	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	13	7	30.76	—	23.07	7.69	—
Quincy	13,728	7	6	28.56	14.28	14.28	—	—

Deaths reported 2503: under five years of age 1149; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 742, consumption 280, acute lung diseases 161, diarrhœal diseases 545, diphtheria and croup 82, typhoid fever 55, whooping-cough 26, malarial fever 16, cerebro-spinal meningitis 10, scarlet fever 8, measles 7, erysipelas 3. From whooping-cough, New York 14, Philadelphia 5, Washington and New Bedford 2 each, Baltimore, Portland and Worcester, 1 each. From malarial fever, New York and New Orleans 6 each, Philadelphia and Baltimore 2 each. From cerebro-spinal meningitis, New York 3, Philadelphia, Boston, Washington, Worcester, Lowell, Salem, and Quincy 1 each. From scarlet fever, Philadelphia 3, New York and Lawrence 2 each, Boston 1. From measles, Cincinnati 4, New Orleans 2, New York 1. From erysipelas, Baltimore, Washington and Fall River 1 each.

In the 28 greater towns of England and Wales with an estimated population of 9,555,406, for the week ending July 27th, the death-rate was 21.0. Deaths reported 3850: infants under one year of age 1432; acute diseases of the respiratory organs (London) 160, diarrhœa 682, measles 91, whooping-cough 71, diphtheria 67, scarlet fever 57, fever 31.

The death-rates ranged from 10.7 in Huddersfield to 48.6 in Preston; Birmingham 22.0; Bradford 18.9; Hull 25.3; Leeds 26.1; Leicester 23.6; Liverpool 26.3; London 18.6; Manchester 25.1; Newcastle-on-Tyne 25.1; Nottingham 18.0; Portsmouth 21 8; Sheffield 23.4.

In Edinburgh 15.1; Glasgow 20.3; Dublin 24.8.

The meteorological record for the week ending Aug. 3, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: –

Week ending Saturday, Aug. 3, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.		8.00 P. M.	Daily Mean.	8.00 A. M.	.	8.00 P. M.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...28	30.02	62.0	66.0	59.0	89		95	92.0	N.		S.E.	2		4	O.		O.	2.00	.06
Monday, ..29	30.02	72.0	84.0	59.0	95		83	89.0	S W.		S.W.	3		20	O.		O.	5.50	.49
Tuesday,..30	30.11	78.0	85.0	72.0	87		93	90.0	S.W.		S.W.	12		14	O.		O.	9.40	.15
Wednes. ..31	30.20	78.0	85.0	70.0	93		86	90.0	S.W.		S.W.	12		10	O.		O.	8.25	.76
Thursday,. 1	30.14	76.0	80.0	71.0	88		91	90.0	S.W.		S.W.	6		11	O.		O.	8.20	1.50
Friday,.... 2	30.14	78.0	84.0	72.0	88		85	86.0	S.W.		S.W.	12		15	O.		C.		.0
Saturday,. 3	30.00	74.0	78.0	69.9	89		91	90.0	S.W.		S.W.	12		9	O.		F.	3.45	.24
Mean for Week.	30.07		80.0	67.0				88.0										38.00	3.20

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 3, 1889, TO AUGUST 9, 1889.

By direction of the acting Secretary of War, leave of absence for seven days is granted Colonel **ANDREW K. SMITH**, surgeon. Par. 12, S. O. 178, A. G. O., August 3, 1889.

By direction of the acting Secretary of War leave of absence for two months on account of sickness, with permission to leave the Division of the Missouri, is granted Major **ALFRED A. WOODHULL**, surgeon. Par. 5, S. O. 178, A. G. O., August 3, 1889.

Leave of absence for two months is hereby granted Major **JOHN H JANEWAY**, surgeon, with permission to apply for an extension of two months. Par, 3, S. O. 52, Headquarters Division of the Pacific, July 29, 1889.

By direction of the acting Secretary of War, First Lieutenant **WILLIAM B BANISTER**, assistant surgeon, is relieved from further duty at Fort Wingate, N. M., and will report in person to the commanding officer, Fort Grant, Arizona, for duty at that station, relieving Captain Arthur W. Taylor, assistant surgeon, who upon being so relieved, will proceed to Fort Wingate, New Mexico, and report in person to the commanding officer thereof for duty at that point. Par. 4, S. O. 178, A. G. O., August 3, 1889.

Leave of absence for twenty days on surgeon's certificate of disability is hereby granted Captain **LOUIS M. MAUS**, assistant surgeon, U. S. A., (Fort Porter, N. Y.) Par. 2, S. O. 173, Headquarters Division of the Atlantic, August 1, 1889.

By direction of the Secretary of War, Captain **JOHN J. COCHRAN**, assistant surgeon, now on duty at Fort Adams, R. I., will report to the commanding general, Department of the Platte, for temporary duty with troops enroute to and at the summer camp at Fort Robinson, Neb. Upon the completion of this duty will return to his proper station. Par. 10, S. O. 180, A. G. O., August 6, 1889.

OBITUARY. CHARLES ELAM, M.D., F.R.C.P.

THE death is announced, at the age of sixty-five, of Dr. Charles Elam, "first gold medallist" in medicine at London University in 1846. Dr. Elam was a voluminous writer, and among his more important works may be mentioned the following: "Medicine, Disease and Death; being an Inquiry into the Progress of Medicine as a Practical Art;" "A Physician's Problems," "On Cerebria and other Diseases of the Brain;" and "Winds of Doctrine, being an Examination of the Modern Theories of Automatism and Evolution." He was also the author of treatises on "Moral and Criminal Epidemics," "Civilization," "Illusions and Hallucinations," "Liberty and License in Science," "The Gospel of Evolution," and "Man and Science," and of numerous contributions to the medical journals.

DEATH.

In New York, August 12th, Dr. Alexander B. Mott, aged 63.

BOOKS AND PAMPHLETS RECEIVED:

Accumulators and their Medical Use. By Robert Newman, M.D. Reprint. Philadelphia, 1889.

An improved Form of Relaxation Suture. By Dr. Newton Albert Powell, Toronto. Reprint, 1889.

Boston University School of Medicine, Seventeenth Annual Announcement and Catalogue. July, 1889.

Annual Announcement of the Louisville College of Dentistry, Dental Department of Central University, Louisville, Ky. Session of 1890.

The Annual Report of the Department for the Insane of the Pennsylvania Hospital, for the year ending April 22, 1889. Philadelphia, 1889.

The Physician's Leisure Library. The Treatment of the Morphine Habit. By Dr. Albrecht Erlenmeyer. Translated by E. P. Hurd, M.D. Detroit: George S. Davis. 1889.

Physiological Basis of Objective Teaching. By Marshall Calkins, A.M., M D., Late Professor of Physiology and Microscopic Anatomy in the University of Vermont. 1889.

Anatomie topographique du Duodénum et Hernies Duodénales. Par Tonnesco. Volume in 8vo de 107 pages, avec 13 plates et 21 figures hors texte. Paris: Publications du *Progres Medical.*

Two Suggestions for Improving the Operation of Excision of the Knee-Joint for Strumous Disease. By A. G. Miller, M.D., F.R.C.S. Ed., Surgeon in the Edinburgh Royal Infirmary. Reprint. 1889.

Census of Massachusetts, 1885. Prepared under the direction of Carroll D. Wright, Chief of the Bureau of Statistics of Labor. Vol. II., Manufactures, the Fisheries and Commerce. Boston, 1888.

Cerebral Localization in its Practical Relations. By Charles K Mills, M.D., Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. 1888.

Original Articles.

THE EFFECT OF THE CLIMATE OF COLORADO UPON PHTHISIS PULMONALIS, AS SHOWN BY THE ANALYSIS OF ONE HUNDRED RECORDED CASES.[1]

BY SAMUEL A. FISK, A.M., M.D., DENVER, COL.

Fellow Members of the Colorado State Medical Society: — The time has come, which has been specified by the By-Laws and ordained by custom, for the Annual Address of your President, and it is my pleasure, as well as my duty, to comply with these demands.

For a long time the subject has been on my mind, and the selection of an appropriate theme has been a matter of considerable difficulty. On the one hand, I have been met by the decided objection in my own mind, to touching upon subjects that have already been so ably handled by my predecessors; and, on the other, by the desire of presenting something which would bear on its face some evidence of my own individual work and at the same time have a common interest for all.

With a view of meeting these requirements as well as I could, I have selected as the title of my address, "The Effect of the Climate of Colorado upon Phthisis Pulmonalis, as shown by the Analysis of One Hundred Recorded Cases."

In presenting this subject I feel that it should partake strongly of the flavor of having a common interest, for if there is any one thing in our surroundings that makes our work in our profession to differ from that of the thousands upon thousands of physicians, the country and world over, and which, moreover, is deserving of our closest attention, as men of some scientific attainments, it is and should be the question of the effect of this climate upon the human economy in conditions of both health and disease. It is a vast theme, fraught with no little scientific interest, affording scope enough for the ambitions of any one, and material enough for the work of a lifetime. In its broadest bearing it embraces much larger considerations than the one to which I shall limit myself, and yet, up to the present time, we of the medical profession have emphasized especially the effects of our climate in producing an arrest or cure of the disease commonly called consumption, for it has been in this direction that its effects have been most pronounced and conspicuous.

As individuals, there are and have been members of this Society who have devoted time and study to the analysis of the climate and to its effects upon this disease, and their published articles have attracted the attention of the profession generally, and have had the effect of bringing invalids of this class here by the thousands, and have resulted in the saving of thousands of lives. But, in order to give such investigations the weight that must always come from the approval of a body like our own, and, moreover, to relieve them from the elements of the personal equation which an individual's writing must always bear, this Society voted last year to entrust a consideration of this question to a "Committee of Collective Investigation," which should have power to solicit reports from the individual members of this Society and collate the same. The committee began its labors early, outlined its policy clearly, and have labored zealously, but they are not able to render any report, largely from lack of support from our own members.

It does not seem to me that in this matter there is any blame to attach to any one, nor, on the other hand, any cause to abandon our idea. This, our first attempt, should not be considered as a failure, nor should we be led to give over the project. It is one, it seems to me, which if carried out to its fulfilment, would stamp our body, in the minds of the profession the world over, as a really scientific body. Its results would be a real addition to medical knowledge to be quoted as often and spoken of as favorably as are the reports of the several investigation committees of the British Medical Association.

Let me, therefore, at this time and from this chair, urge upon you not to become disheartened, not to consider this first attempt as a failure, but rather to regard it as an experience, from which we are to profit, from which we are to devise other means by which the committee will meet with more hearty support from our members, and by which the members will find it easier to comply with the demands made upon them by your committee.

The object proposed is a mighty one, and the goal glorious. Let us push on to its achievement.

I, for one, made an attempt to comply with the request of your committee appointed a year ago, and started to collate my cases. It was not, however, until I undertook the matter that I had any comprehension of the amount of work involved, nor of the difficulty that would beset both a busy practitioner, in furnishing the data, and the committee in collating such data, if furnished. From my own experience I understand somewhat the difficulties that will beset us, for, as few as are the cases that I present as the basis of my conclusions, the task of getting them into shape is one that I doubt if I could have accomplished without the kindly aid of one of my medical students, whose services I wish to publicly acknowledge.

Out of this attempt on my part, and the understanding that the committee would be unable to make a report, grew the idea of presenting a summary of my cases at this time. In doing so I am as painfully aware as any of you can be, of the deficiencies. I regret that the number of cases is not larger, and that the time of their being under observation is not longer. They are selected cases, and do not embrace my total of recorded cases, nor, unfortunately, does my list of recorded cases contain by any means, all of the cases I have had under observation, for unless I have seen the patients at my office where my record-book was at hand, I have not been apt to take notes. But, in presenting even these few cases, I am consoled with the thought that the one thousand cases quoted by Dr. Williams in his book on "Pulmonary Consumption" are selected from the records of a busy practice of a specialist in a large city, and cover a period of twenty-two years; that my own shortcomings, as regards numbers and the time during which they have been under observation, are such as, I trust, will be remedied as years go on; that, after all, some valuable truths may be gleaned from even one hundred cases carefully recorded and conscientiously analyzed; and that I am taking what might be called "a step in the right direction," as regards the handling of this subject by the physicians that compose our Society.

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[1] President's Address before the Colorado State Medical Society, at Denver, June 19, 1889.

The cases are selected, not with reference to the results being favorable or unfavorable to our climate, but because I have been able to see them frequently enough to judge somewhat of the effects of our climate upon their trouble, and to follow the progress of their disease.

Inasmuch as my only aim is to show the effect of our climate upon this disease, pulmonary consumption, it is evident that I could call to my aid only such cases as I have been able to follow for some time, so as to know whether they were benefited or injured by a residence in our climate, and to point out, if I can, the elements in these cases which tended to produce the one or the other effect.

I am not able to follow the classification of Dr. Williams in tabulating my results, for his first broad class of "well" patients I prefer to class as "much improved." I have seen, and had under my care, patients who have been pronounced well, or at least they have told me that they have been pronounced well, by other physicians, — not in this country, however, — and been dismissed as well from sanatoria, in whom cough and expectoration still persisted, and in whom there have been pronounced physical signs.

I have preferred to classify my list as

(1) Much Improved. This includes those spoken of by Dr. Williams as being able to follow their occupations without any recurrence of their former symptoms, and others, who, though still carrying some evidences of their disease, are able to pursue their occupations without any serious inconvenience. In the broadest sense they have all been much improved by their residence in Colorado.

(2) A second class I have called, Somewhat Improved. Here I have placed those who have shown improvement, — but not up to the first class. It embraces some who, after making very considerable gains in this climate, have considered themselves able to return to their homes. Others, who are in the chrysalis state, in process of formation for the first class. And still others, who, though improved in their condition on arriving in Colorado, and who, though able to work have, nevertheless, to use precautions and limit their exertions (Dr. Williams's second class).

(3) The third class, are the few who have not done well here, largely, I think, through some imprudence of their own, but be that as it may, they are actually in a worse condition than when they arrived.

(4) Those who have died. My first class numbers 50 % of all cases; my second, 17 %; my third, 7 %, and my fourth, 26 %. If now we make the broad distinction in these cases between those who have been benefited and those who have not been benefited by coming to Colorado, we can class the first two divisions as one, and the last two as one. From this we learn that 67 % of my cases have been benefited, and 33 % of my cases have not been benefited by coming to Colorado. That is, that benefit may be expected in two out of three cases that come here — taking cases as they run. This is not an altogether fair statement of the case, either, for of those in the second half I can recall a good many instances where some imprudence has made all the difference between progress and retrogression, where I think it is fair to say that an arrest of the trouble was sacrificed to some imprudence, in no way attributable to climatic influence, and not to be regarded as an effect of climate, — such imprudence, I mean, as an excess in exercise as, for instance, a very long horseback ride, or a fishing excursion, pitching quoits, or imprudence in returning to the East when it was not advisable, or, pneumonia contracted from taking a Turkish bath. Many of these cases have occurred in persons, who up to that time, were gaining, and whose prospects were encouraging, but as the result of their imprudence fresh troubles were lighted up, hæmorrhages induced, and conditions brought about from which they have never rallied. These remarks apply to nearly every one of my third list, and fully nine in the fourth. So that while I am willing to let the statement go, as shown by my cases, that 67 % of invalids that come to this climate gain by so doing, and that 50 % make marked improvement, I yet think that these figures might be somewhat increased in favor of the good influence of our climate, if only all patients would act cautiously and with discretion, which, unfortunately, they won't; and so, as I am analyzing figures, some results have to be classed as unfavorable to our climate, where in reality they are not.

Sex. — The question is often asked whether men or women do best in this climate. I do no not know that my figures will tally with the results of other physicians in this matter, for I find that only fourteen of my cases were women. Of these fourteen, six died, and and one got worse, making a percentage of 50 % who who were not benefited. Whereas of the men, twenty died and six got worse, a percentage of only 30.2 % who were not benefited. Of the remaining seven women, who were benefited, I find that six are classed with the much benefited.

These figures would seem to show that men do better than women in securing an arrest of pulmonary trouble in Colorado, and that so far as women are concerned it is an even chance as to whether they are benefited or not by coming to this State. Even here it must be remembered, however, that with the percentage balancing, a showing of 50 % on the positive side is really stronger in moral force than the 50 % on the negative, for the question arises, what might have been the results in the case of the seven who were benefited here, had they *not* come to Colorado.

Undoubtedly most women feel the separation from home friends more keenly than most men, and are less able to stand the effects of change of surroundings and conditions, than most men; so that these forces operate more adversely in the case of women than of men, which may account, to some extent, for the ratio of percentages given above. Of the six women who died, five died within six months after coming to Colorado, and the remaining one in a year. Moreover, there are other factors operating adversely in the case of most women, of which I shall have occasion to speak presently, most noticeably imperfect digestion, poor appetite, constipation, and irritability of nerve centres, all of which, in either men or women, are most potent factors for harm in cases of pulmonary consumption.

Age. — As regards the influence of age in affecting the results of a residence in Colorado on account of consumption, I find that, of my hundred cases,

3 cases were under 20 years of age.
51 " from 20-30 " "
[illegible] " " 30-40 " "
8 " " 40-50 " "
1 " " 50-55 " "

Of the three under twenty years of age, all died. Of the fifty-three between twenty to thirty years of age,

29, or 54.7% are tabled as much improved.
6, or 11.3 are tabled as somewhat improved.
5, or 9.4 are tabled as worse.
13, or 24.5 are tabled as dead.

Of the thirty-two, ranging from thirty to forty years of age,

14, or 43.8% are tabled as much improved.
11, or 34.4 are tabled as somewhat improved.
2, or 6.2 are tabled as worse.
5, or 15.6 are tabled as dead.

Of the eight ranging from forty to fifty years of age,

5, or 62.5% are tabled as much improved.
1, or 12.5 is tabled as somewhat improved.
2, or 25 are tabled as dead.

Of the four ranging from fifty to fifty-five years of age,

2, or 50% are tabled as much improved.
1, or 25 is tabled as somewhat improved.
1, or 25 is tabled as dead.

All of which goes to show that the chances for doing well are better when the patient is over thirty years of age. This, however, is not at all due to the influence of climate, as a comparison of my results with those of Dr. Williams will show, for he writes:

"The influence of age and sex on the duration of consumption may be thus summed up:

"(1) The duration is longer in proportion as the age of the attack is later, the retarding influence of age being more conspicuous among males than females.

"(2) Among the females the time of the attack is on an average, earlier than among males.

"(3) The duration of the disease is shorter.

"(4) The age reached by the consumptive females is less."

Following out these suggestions, I find that in my table of deaths the average duration of life among the females after coming to Colorado was only 6.5 months, while with the men the average was 15.7 months; that with the females three were twenty years and under of age, while the same was true of only one man. It would seem from this, therefore, that the general law, as stated by Dr. Williams, is not varied much by the climate of Colorado, and that where a fatal result ensues, the duration of the disease is shorter in the female than in the male.

Heredity. — Fifty-two of the one hundred cases report some lung trouble in the family, distributed as follows,

One or both parents affected	25
One or both grandparents affected . .	7
Uncles or aunts affected	7
Brothers or sisters affected	13
	52

Of the twenty-five whose parents were affected,

10, or 40% were much benefited by coming to Colorado.
8, or 32 were somewhat benefited by coming to Colorado.
1, or 4 was made worse by coming to Colorado.
6, or 24 died after coming to Colorado.

Of those affected through grandparents,

5, or 71.4% were much benefited by coming.
1, or 14.3 was somewhat benefited by coming.
1, or 14.3 died.

The same figures and ratios hold true when the inheritance was less direct, that is, through uncles and aunts.

When brothers and sisters were affected,

3, or 23 % were much benefited by coming.
5, or 38.5 were somewhat benefited by coming.
5, or 38.5 died.

These figures go to show that in rather more than half of my cases there were some family predisposition (my percentage of 52 being in excess of Dr. Williams, where it was only 48.4 %) and that while, taking them as a body, 73 % were benefited by coming to Colorado, yet those did the best in whom the family predisposition was shown in grandparents, uncles and aunts, rather than in parents, brothers and sisters.

Hæmorrhage. — It has often been urged that high altitudes are not adapted to hæmorrhagic cases, and that, therefore, persons suffering with hæmorrhages should not come to Colorado. Let us see what lessons can be gleaned from my tables.

I find that there were forty-four cases who had had hæmorrhages, more or less severe, and more or less numerous. Of these forty-four cases I find that eleven or 25% had a recurrence of hæmorrhage in Colorado, which certainly does not uphold the statement, so often made, that this altitude is conducive to hæmorrhage. Two patients who never had hæmorrhage before coming here, had some in Colorado, and one died from the effects of his. In these cases, however, the cause was due to unusual exertion, and, indeed, many of the cases of recurrence can be traced to immoderate exercise. Of the forty-four hæmorrhagic cases I find that,

26, or 59.1% were much benefited here.
7, or 15.9 were somewhat benefited here.
2, or 4.6 were made worse.
9, or 20.4 died.

That is, 75% were benefited, and 25% grew worse or died. This certainly does not uphold the idea that Colorado is not good for hæmorrhagic cases: it goes to prove, very decidedly, the direct contrary, that such cases do admirably here.

Appetite, Digestion and Bowels. — These elements I have regarded as of the greatest importance in estimating the probabilities of my cases when they first come to me; and, taken with the indications furnished by the temperature, pulse and their ability to sleep, aid to form my prognosis quite as much as does the condition of the chest. For I have seen patients with consolidation, night sweats, constant cough and profuse expectoration, accompanied by loss of strength and flesh, and it may be with hæmorrhages, do admirably because they could eat, digest and sleep, whereas I have also seen others similarly affected go down rapidly because they could not eat nor digest what they had eaten, nor yet sleep. The following cases, though not filling all the requirements, will nevertheless serve as fitting examples of what I mean.

Miss ——, a maiden lady, about thirty-five years of ago, consulted me August 15, 1887. Her mother died of consumption at forty. A year previous to consulting me my patient caught cold, and in January, 1887, this was followed by night sweats, never had any hæmorrhage, but once or twice had spat a little blood. She had lost flesh, fifteen pounds from her average. She had a dry cough, accompanied by little or no expectoration. Her digestion was very bad, her appetite fair, bowels regular, and she slept poorly. The left apex was slightly dull, expiration was prolonged, and a few clicks were developed on cough. Pulse, 120;

temperature, 100°. This lady ran down rapidly, and in six months she was in her grave.

A couple of months later, namely, October 25, 1887, I was consulted by a man with the following history:

Dr. M——, age forty-three. Mother had consumption. Had pneumonia in spring of 1887, and coughed pretty constantly afterward. In August he had four copious hæmorrhages. When I saw him he had fallen off twelve pounds from his usual weight, and was expectorating a whitish mucus in moderate quantities. His appetite and digestion were first class, bowels regular, and the physical signs in his chest were identical with those described in the foregoing case. His pulse was 88, and temperature 100°. He exercised the utmost caution in regard to himself, and in the following May I allowed him to return East for the summer. Immediately on his reaching Boston he consulted one of the best specialists in this department in this country, who was fully informed in regard to his case, and he was told as I had told him, that there was a little dry crumpling at his left apex, probably pleuritic. This past winter he returned to Colorado again, more as a means of prevention than for any other reason, and to-day he is back at his work as nearly "well," I think, as it is possible for any one to be who has ever had serious lung trouble. In these two cases, which consulted me at about the same time, there were nearly identical conditions, as regards heredity and the lungs, existing when they came to me. The climate could work upon the one, for he had recuperative power. The other did not have. Her digestion was impaired, her appetite gone, and she was of a nervous type, and so she succumbed rapidly.

The citation of these two cases will probably illustrate my meaning better than figures could do. However, I am supported by the facts, for I find that, with only two or three exceptions, in every one of the fifty cases which I have classed as "much improved," the digestion and appetite are classed as "good," and bowels "regular," whereas of the twenty-six who "died," I find that the appetite and digestion were bad in sixteen, and in some of these cases the appetite was entirely gone, and in ten of the twenty-six the bowels are classed as constipated, loose or irregular.

Pulse and Temperature. — I need only adduce my figures in support of my previous assertion with reference to these factors as elements in prognosis. A rapid pulse and high temperature, especially when combined with an impaired digestion and appetite, are unfavorable symptoms.

Of the twenty-six deaths, I find that, at the date of consulting me, fifteen had a pulse beating at from 100–120–130, and a temperature ranging from 100°–102°–103.5°–104.2°. Of the remaining eleven, I have not kept records of these factors, in four cases; but of the seven that are left the records show a pulse over 100 in three of the cases, and a temperature 99.5° to 100.5° in the remaining four.

On the other hand, in the fifty cases tabulated as "much improved," I find only seven where the pulse and temperature were each over 100°, the highest pulse being 116 and the highest temperature 101°; of the remaining the pulse would range from 80–96, and the temperature would be normal or ranging from 99°–100°.

Condition of the Lungs. — I approach this subject with hesitancy, because I feel, as Dr. Williams expresses it, that "the classification of the conditions of the lung, consolidation, softening and excavation, into first, second and third stages, is open to objections, because such stages are not always well-defined, it being difficult, sometimes impossible, to distinguish between the end of the second and the beginning of the third, and again, various parts of the same lung may be in different stages." I also feel a hesitancy because I know that I have, at times, found undoubted signs, when others, whose diagnostic powers I highly respect, have failed to find them, and *vice versa* the tables have been similarly turned on me.

I prefer, therefore, to classify my cases somewhat differently, more as regards the extent of tissue involved than as regards its stages.

Where only a small portion of one lung is involved, for example, one apex, or where it may be that both apices are but slightly involved, for example, prolonged expiration at one; heightened percussion note, prolonged expiration and a few fine râles produced by cough with deep inspiration at the other; or further when the trouble, as sometimes but rarely occurs, is found in a portion at the base, such cases I prefer to classify as "having slight trouble."

Where the disease has progressed further than this, involving the whole of one lobe, or where, as frequently happens, râles are to be heard in two separate lobes, and yet softening has not taken place, I shall call such, "marked trouble."

Lastly, where the dulness has become very marked over one or more lobes, and this is accompanied by tubular breathing, marked bronchophony and râles of various sorts, even though I cannot positively diagnosticate cavities, as I am indeed very slow to do, I prefer to classify such cases as, "considerable trouble."

Consulting my tables, then, with reference to these distinctions, I find that of my fifty cases recorded as "much improved," the trouble could be classed as slight in thirty-four, marked in fifteen. The one remaining case consulted me four years after coming to Colorado, and I was not then able to detect any physical signs which would indicate the nature of his original trouble.

In the next class, of those "somewhat improved," I find four in whom the trouble was slight, thirteen in whom the trouble was marked.

In the next class, or those who are worse off than when they came, I find, that when they came, four could be classed as slight, three as marked.

And of the twenty-six who died, four could be classed as slight when examined, four as marked, and eighteen as considerable.

The conclusion to be drawn from these figures then is, that the most favorable cases for Colorado, as far as the condition of the chest is concerned, are those in the early stages, when the disease has not made much progress.

Later on, when perhaps they have reached the so-called second stage, they may be sent, with the hope of getting some improvement; but when the disease is very considerable, especially if the condition be marked by impaired appetite and digestion, and by hectic and rapid pulse, they had better be kept at home.

Complications. — I have had under observation, and included in my list, five cases of undoubted tubercular laryngitis. Of these, two have gained a recovery, one has made some little improvement, one has died, and the fifth was getting worse when I last saw him. One of my patients on this list has an empyæmic cavity on the left side, where resection of the ribs has been performed, and he is around attending to his business, without any marked inconvenience. In two cases, the fibroid condition on the left side is so marked that the heart is drawn up and to the left of the nipple; but they are doing finely, and are classed as much improved. One case was attacked with acute endocarditis, some six months after coming here: he weathered the attack, and is classed as much improved.

Five of my list, I know positively, have had syphilis. Of these, two are classed as much improved, one as somewhat improved, one as worse, and one has died.

Several of my cases have been attacked with rheumatism, typhoid fever, and other complications not pulmonary; and I have not noticed that their lungs have received any additional damage from such illnesses.

But time fails me for any closer analysis of even one hundred cases, and I must stop.

The conclusions that it seems to me can fairly be drawn from the foregoing are as follows, namely: that, taking cases as they come to us, we can expect improvement in two out of three; that men do better than women, as in fact they do anywhere; that persons over twenty years of age do better than those under twenty, and that those over thirty years of age do still better; that heredity forms no bar to a person's coming to Colorado, but that the more indirect the inheritance the better are the chances; nor should a hæmorrhagic tendency debar one from coming, as such cases do admirably well; that altitude *per se* is not a producer of hæmorrhage; that the chances of obtaining an arrest of trouble are improved by the patient's possessing a sound digestion, a good appetite and a pulse and temperature not much raised above the normal; and that patients in the early stages of the disease, especially if their digestion be sound, appetite good, and pulse and temperature nearly normal, are the fittest subjects for our climate, whether they have any hereditary tendency or not.

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THE CHEMISTRY OF ARSENIC.[1]

BY WILLIAM B. HILLS, M.D.,
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Arsenic Acid. — This is a very poisonous compound not often met with outside the chemists' laboratory, and not likely to become the object of a medico-legal investigation. It is a white, non-crystalline, deliquescent solid, soluble in water. The solution has an acid reaction. Heated to a red heat in a closed tube it is decomposed into oxygen and arsenious oxide, the latter forming the characteristic sublimate in the cool part of the tube. It is only with great difficulty that it is completely volatilized. It responds to Marsh's test, the reduction test previously described, and Reinsch's test provided the solution is sufficiently acid. There are also special tests for arsenic acid, some of which are important inasmuch as they are made use of for the purpose of estimating arsenic quantitatively.

The arseniates of sodium and potassium are much used, especially the former in the processes of calico printing. They are white, non-volatile, deliquescent salts, soluble in water. They have only rarely given rise to poisoning. They respond to the tests for arsenic acid, as well as to those for the constituent metals.

Sulphides of Arsenic. — Arsenic disulphide occurs native as realgar. It crystallizes in more or less translucent prisms which have an orange-yellow color and a resinous lustre. The commercial product is an artificial sulphide made by subliming a mixture of arsenical pyrites and iron pyrites. The product is then melted with arsenic or sulphur, according to the shade of color desired. This artificial product is amorphous, red and opaque. Its composition is variable. It usually contains free arsenious oxide. It was formerly used as a pigment. Mixed with lime it is employed in tanning for removing the hair from skins. It is a constituent of Indian or white-fire, which is used for pyrotechnical purposes.

Arsenic trisulphide, which is known under the name of orpiment or yellow sulphide of arsenic, occurs native in translucent, lemon-yellow colored prisms. It is obtained pure by passing sulphuretted hydrogen gas through a solution of arsenious acid or of an arsenite acidified with hydrochloric acid. This compound is occasionally found in the œsophagus, stomach, or intestines of persons poisoned with arsenic, as a result of the sulphuretted hydrogen, formed during decomposition, upon arsenic present in these organs. The commercial product is prepared by subliming pulverized arsenious oxide and sulphur in the proper proportions. It is, as thus prepared, a mixture of arsenious oxide and sulphide, and is very poisonous by reason of the former constituent. It was formerly much used as a pigment under the name of King's yellow, but is rarely used as such at the present time. It is used in calico printing and dyeing, especially for the reduction of indigo; mixed with lime it is used in India as a depilatory.

The sulphides of arsenic are insoluble in water, (any oxide present, however, is dissolved by water.) They are soluble in alkaline hydrates and are reprecipitated from these solutions by an excess of acid. They are converted by nitric acid to soluble arsenic acid. They are distinguished from nearly all red or yellow inorganic compounds by their volatility. They respond to the reduction test for arsenic (with sodium carbonate and potassium cyanide) and are thus distinguished from all red or yellow colored compounds.

Arseniuretted Hydrogen. This is a colorless gas with a peculiar and extremely disagreeable odor. It is the most poisonous compound of arsenic. Prepared by dissolving any compound of arsenic with a metal in dilute hydrochloric or sulphuric acid; or by bringing any soluble compound of arsenic in contact with nascent hydrogen. It is of especial importance in its chemical relations, since upon its formation is based Marsh's test for arsenic. Poisoning by arseniuretted hydrogen has hitherto been accidental: either the result of inhaling the gas in the laboratory, or of inhaling hydrogen made with arsenical zinc or arsenical sulphuric acid; or of inhaling the gases evolved in certain manufacturing or mining processes.

MEMORANDA RELATING TO ORGANS AND SUBSTANCES SENT FOR ANALYSIS.

The organs which should be submitted to chemical analysis in a case of suspected arsenical poisoning are the following: stomach and intestines with their contents, liver, kidneys, spleen, brain and heart. Any urine remaining in the bladder should be saved, since it is with the urine chiefly that arsenic is eliminated.

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[1] Concluded from page 155 of the Journal.

Medicines administered during life, suspicious chemicals, suspected articles of food and drink, the vomitus, fæces and urine, if any, voided during the attack, must also be secured. At the autopsy the organs should be placed for examination upon plates which have been thoroughly cleaned by the medical examiner himself. Special care should be taken that they are not brought in contact with undertaker's paraphernalia on account of the danger of absorbing some disinfecting fluid containing arsenic. If the stomach and intestines are opened, care should be taken that the contents are not lost, since the examination of the latter by the chemist is often of great value. If the interior of the stomach or intestines is washed, the wash-water should be saved, for it may contain solid particles of the poison removed from the mucous membrane. The organs should be sent to the chemist in perfectly clean glass jars, each organ in a separate jar, and the latter should be closed with glass and not metallic caps, carefully sealed and labelled by the examiner. They should be sent to the chemist by a messenger, or preferably two messengers, to diminish the danger of loss of identity through the death of a messenger. Above all, they should not be sent unsealed by express since their identity is thereby lost. The organs while in the possession of the examiner or messenger should never be left in any place to which others have access. No preservative should be employed. The use of such complicates the analysis, and renders an analysis of the unused portion of the preservative absolutely essential in case any poison is detected. It is a wise precaution, in cases which are likely to result in a trial for murder, to divide each of the organs and submit the separate portions to two chemists; 1 for the purpose of confirmation of results if such is desired; 2 that in the case of the death of one chemist the results of the analysis may not be lost. A frequent error in cases of suspected poisoning is that of sending the stomach alone for analysis, in the belief that if poison has been administered it must necessarily be detected in the stomach. This is a mistake; for the poison may have been entirely removed from the stomach by vomiting or absorption, so that it can no longer be detected there, while its presence is readily determined in the blood and solid tissues. This is likely to be the case if the patient has survived the administration for many hours. A mistake is sometimes made in sending a small portion of some one organ for analysis. If the amount of poison present is very small, the analysis under such circumstances may be wholly negative. The whole of each organ should be submitted for analysis. The importance of the chemical analysis of the vomitus and urine in cases of suspected arsenical poisoning should never be lost sight of. Arsenic usually provokes violent vomiting, and it may happen that the poison is wholly removed from the stomach so that none can be detected in this organ after death. If the patient survives a week or more, all the poison absorbed may be eliminated, so that after death none can be detected in any of the organs. In such a case the analysis of the vomitus might be of great importance in the way of establishing the fact of poisoning. The examination of the vomitus is further important, since, if the poison has been taken in the solid form, it may enable the chemist to determine the exact compound taken, a fact which cannot be established after the poison has been absorbed, excepting in the case of Paris green poisoning.

The examination of the urine passed during life is especially important, for the urine is the chief channel of elimination and the detection of arsenic in this secretion is a positive proof that arsenic has been absorbed into the system and is in process of elimination. The examination of the vomitus and urine thus afford the best means of establishing by chemical evidence during the life of the patient the diagnosis of arsenical poisoning.

QUESTIONS LIKELY TO ARISE IN CONNECTION WITH ARSENICAL POISONING.

(1) The question is always asked in trials for murder by poisoning with arsenic, if the quantity detected in the body is sufficient to cause death? the feeling being quite general that the evidence is defective if the answer is in the negative. The arsenic found in the stomach and intestines however, if any, is not the arsenic which has caused death. It is simply that which is left after the absorption of a certain amount, and the loss, in most cases, of a certain amount by vomiting and purging. It, therefore, furnishes no clue to the amount actually taken, which is the more important question. If a large quantity is found in the stomach and intestines, it is, of course, evident that a large quantity must have been taken. But a half-grain detected in the stomach may be the residue from a small or a very large dose. Neither does the quantity extracted from the organs ordinarily submitted to the chemist furnish any definite clue to the actual quantity taken. If several grains are isolated, a large and fatal dose must have been taken. But a small quantity may represent either a relatively small or a relatively large dose. For in the latter case much must have been thrown off by vomiting and purging and thus have escaped absorption; and much may have been removed by elimination if the patient has has survived a few days. Moreover, the chemist never isolates all the poison contained in the body, for he subjects to analysis only a small portion of the body, all parts of which, as a rule, contain more or less arsenic. The quantity isolated is, therefore, only a part of that actually taken, and does not necessarily bear any relation to the latter. Finally, we do not know what quantity of arsenic must necessarily be absorbed to cause death. We know what amount is *ordinarily* fatal. But just as this may vary widely in different cases, according to conditions all of which are not understood, so the amount actually necessary to be absorbed to produce a fatal effect probably varies in different cases. In any case the detection of *any* quantity of arsenic over and above insignificant traces is sufficient *chemical* evidence of poisoning. Of course if the amount of arsenic detected is small and *symptoms and appearances are wanting or doubtful*, it may reasonably be suggested that such arsenic may be the remnant of medicinal application, or that it may have been introduced by exposure to arsenical papers or fabrics.

(2) The question is usually asked, "Can you tell if this arsenic was taken into the system before death or introduced after death?" The answer is, "No." The experiments of numerous investigators have proved conclusively that arsenic, injected into the mouth, rectum, and other parts of the body after death, is, by the process of diffusion, carried sooner or later to even the most remote parts of the body, as the brain. It may be suggested that the symptoms in any given case

may aid us in forming an opinion, but it must not be forgotten that there are diseases in which the symptoms closely resemble those of arsenical poisoning.

Professor Reese has suggested that the detection of arsenic in the urine might be regarded as evidence of ante-mortem poisoning, as it is hardly probable that arsenic introduced after death would percolate through the coats of the bladder so as to contaminate the urine. But Dr. Miller shows that arsenic introduced after death into the stomach so diffuses itself as to be detected after a few days not only in the various solid organs of the body but even in the urine. Hence we cannot say from a chemical analysis that the arsenic was not introduced after death. We can *sometimes*, but not always, say (from the quantity found, if large, the distribution, or other circumstances), that it was introduced after death.

The question of the post-mortem diffusion of arsenic derives its importance largely from the practice prevailing among undertakers of injecting into various parts of the body shortly after death embalming fluids most of which contain arsenic as one of the ingredients. This practice is one which must occasionally result in defeating the ends of justice, and its regulation by legislation seems to me highly desirable.

(3) If the body has been exhumed, the chemist is usually asked if the arsenic found could not have had its origin in the soil which at times contains arsenic. It has been satisfactorily demonstrated however, that arsenic exists in the soil in a form insoluble in water probably in combination with iron. Schlagdenhauffen and Garnier[4] have further shown that if an aqueous solution of any compound of arsenic is left in contact with a clayey soil containing lime or iron at the ordinary temperature, the arsenic is gradually converted into insoluble compounds which are retained by the soil. Any arsenical compound introduced into such a soil, and subjected to continual infiltration of rain, if originally insoluble, remains insoluble: but if soluble, it gradually becomes insoluble, and at a depth of 0.6 to 0 9 m. from the point at which the arsenic is introduced, or no arsenic can be detected in the infiltered water, even after fourteen months.

With ordinary precautions, therefore, in conducting an exhumation the question cannot become a source of embarrassment so long as the coffin remains sound. If the coffin is so far decomposed that the soil has come in contact with the remains, it is, of course, possible that *traces* of arsenic may be accounted for in this manner provided the soil is an arsenical one. To meet the objection it is important in cases of exhumation that a sample of the soil above the coffin be submitted to the chemist with the organs for analysis.

(4) How long after death can arsenic be detected? If present at the time of death it may be detected for many years; fifteen or twenty at least. The possibility of the loss of arsenic after long periods must, however, be recognized. Hamburg mixed one gram of arsenic oxide with some finely divided organs and placed the mixture in a flask. He found that the gases evolved during putrefaction contained an abundance of arsenic. At the end of nine and one-half years the amount of arsenic present corresponded to only 0.551 gram arsenious oxide.[5] The odor of arseniuretted hydrogen or other volatile arsenical compounds evolved from putrefying organic mixtures containing arsenious oxide has been frequently noticed by chemists. A similar odor is frequently noticed when the bodies of those who have been poisoned by arsenic many months or years before, are first opened. This odor is not, however, *necessarily* indicative of arsenic, for it is sometimes noticeable when no arsenic can be detected.

(5) The effect of arsenic on the putrefactive process may be inquired into. In some cases of arsenical poisoning the body has been found remarkably well-preserved many years after death. To what extent this is due to arsenic is uncertain; for in some cases of arsenical poisoning decomposition has proceeded very rapidly, while the body has been found very well preserved in cases of death from other causes. We cannot therefore say that the preservation of the body in any given case is due to arsenic.

(6) May death have been caused by arsenic, and yet none be detected in the body? Yes. Death may take place within a few hours and none be detected in the stomach or intestines, on account of removal by vomiting, purging and absorption. It may be found in the stomach and intestines and not in any of the organs of the body; or it may be absent from one organ and yet present in other organs. Or it may early disappear from all. Wormley found only $\frac{1}{100}$ of a grain of arsenic in the liver of a dog that had been under its influence for eight days and then died from its effects.[6] Casper found arsenic both in the solid state and in solution in the contents of the stomach in a case in which death took place in twenty-four hours, but neither the blood nor the liver revealed its presence (quoted by Wormley). Grohe and Mosler record a case in which a child two years old died in seventeen hours from the effects of a green arsenical paint. Arsenic was found in the vomited matters, but not even a trace in the contents of the stomach and intestines, or in the spleen, liver, bile or kidneys (also quoted by Wormley). In the majority of cases of acute poisoning, however, arsenic may be detected in all the organs and tissues of the body: the liver usually containing the largest quantity of absorbed arsenic.

(7) In what time is arsenic eliminated? Elimination commences early and takes place chiefly through the kidneys: in part, through the glands of the skin, the mucous membrane of the alimentary canal, and in the bile, saliva, and tears. The time required for complete elimination appears to be, as a rule, about fourteen days; in some cases a longer period is required. Arsenic has been detected in the urine as late as six and one-half weeks after the last administration. Ludwig detected arsenic in the liver of a dog forty days after its administration. On the other hand, cases are reported in which death took place within a few days after taking the poison, and yet none could be detected in any part of the body.

— *Old Mrs. Smiley.* Next time I get took down sick, my dear, I wish ye wouldn't have that there young sprig of a doctor come to attend me. I don't go much on young doctors, no how.— *Mr. Smiley.* Well, Maria, who would you like to have me call? — *Mrs. S.* I've kinder took a notion to the doctor around the corner. I dunno much about him; but I see he's got a sign out "Veterinary Surgeon," and I think he must be a man of experience.— *Lay Exchange.*

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[4] Comptes Rendus, 100. 1388.

[5] Zeitschrift für Analytische Chemie, 1887, p. 758.

[6] Micro-Chemistry of Poisons. Second edition, p. 312.

ON SURGICAL TREATMENT OF GANGRENOUS HERNIA, WITH REPORT OF FOUR CASES.[1]

BY MAURICE H. RICHARDSON, M.D.,
Surgeon to the Massachusetts General Hospital, Assistant Professor of Anatomy in the Harvard Medical School.

The time required for the operation of excision is short. In my two cases the actual time of applying the stitches was twenty minutes, while the whole operation from the first breath of ether did not exceed an hour. If, for any reason, more than an hour or an hour and a half is taken, I believe that the chances of recovery are very much lessened. Bearing in mind the importance of speed as well as of accurate adjustment of sutures, and that the only other thing of actual necessity is the protection of the peritoneal cavity from the introduction of septic material, all other steps in the operations should be shortened as much as possible. In my observation and experience the time lost in operation is at the beginning, where generally there is no need for careful dissection. It ought to take very little time for the exposure of the bowel, and a very little more to incise the ring and get the parts in position for careful examination, and if necessary, excision. The greater portion of the hour should be free for the crucial part of the procedure; namely, the introduction of the needle and the treatment of the mesentery. Another important point is to avoid unnecessary handling of the parts not only on account of the injury to the peritoneum, but also the loss of time. In order that no time may be lost in disinfecting, an assistant should be devoted to the constant irrigation of the parts during the entire procedure. With ordinary skill and experience the whole operation should not exceed an hour, or at most an hour and a half.

The extent to be resected depends upon the amount of gangrene. I think that an inch to the sound side of the constriction made by the ring is a good rule, provided that the mesentery to that part of the bowel is uninjured. It is certainly better to be on the safe side and take out too much rather than too little. A quick, sharp, transverse cut to the mesenteric attachment should be made with straight scissors, followed by irrigation and the immediate application of the first stitch. The mesentery is best treated by ligation and transfixion after the intestine has been severed. This makes the subsequent nutrition of the bowel more sure, and it also acts as a stay to hold the divided ends together, and takes the strain off the dangerous stitches at the mesenteric border. In my second case, I was surprised to find how little the pedicle of the mesentery interfered with the looks of the whole. It lay under the line of the suture as a small puckered knot, and offered little or no ragged surface to the opposing peritoneum. The action of the knot in drawing the ends of the bowel together and holding them in position, is certainly of great service. I was glad to see this point mentioned in some of the later authorities, for at the time I was quite reluctant to leave the mesentery in this shape.

The method of suturing is important. I believe that the interruptured suture of Lembert is all that is required. I do not believe that it is best to take the time necessary for a suture of the mucous coat, nor do I believe that a double row of stitches is required. If there is no other objection, the time spent is a sufficient one. My plan is to apply the first stitch opposite the mesenteric attachment, and from this point to work each way. If one begins at the mesenteric border and goes right around the intestine, he may not come out even at the other side. The procedure is greatly facilitated by leaving the thread ends long, and having an assistant pull slightly on them, thus making the surface of the bowel taut, and in good position for the next stitch. I think it is also important not to have too many stitches, and not to include too much of the end of the bowel. Intervals of a quarter of an inch are sufficient, and an infolding margin of the same extent.

I have had no experience with Senn's plates or Abbe's catgut rings, but I have no doubt that in certain cases they will play a very important part in getting rid of the evils of the artificial anus.

The operation of incising the gut without dividing the ring, seems to me useless and absurd. I have never yet seen a strangulated hernia where the slightest thing could escape until the constriction had been divided.

Where the general condition of the patient is unsatisfactory, excision and suture should not be performed. Some patients, however, though they seem strong and in good condition, are not as good subjects for this operation as others apparently in worse shape. I have seen a young man die in less than twenty-four hours from a strangulation that reduced itself immediately after death, where no operation had been done, and where six hours before death the condition was as good as could be desired. In other cases there seems to be a power of resistance on the part of the patient, shown by actual improvement in constitutional symptoms after the immediate shock of strangulation has passed away. I believe that it is not rare to find cases where the condition is better after three or four days' strangulation than it is at the end of the first twenty-four hours. In my successful case of excision, the pulse and general appearance improved steadily during the anæsthesia and the manipulations of the operation, and when she was taken to the ward she had a better pulse than when we began to give ether. Another point in favor of the patient is a good family history, especially as to resistance to disease and longevity. While everything connected with the physical condition of the patient may be favorable for resection, potent objections may exist in the accessory conditions which surround the case. It should never be done unless the fullest preparations are at hand. It should never be undertaken without good assistants, proper instruments, all the material for perfect suturing, and every chance for asepsis. I do not think it should ever be done extemporaneously or by inexperienced practitioners. It is not an operation to be lightly undertaken.

The reasons why resection is, in my opinion, very much to be preferred to any other method, in suitable cases, where every condition is favorable, are: that we have in successful cases a return to perfect health in a few weeks; that we avoid the dangers and discomforts which accompany artificial anus as well as those from opening the intestine high up; and that we do not have to subject the patient to additional risks of secondary operations. The sum of the dangers of artificial anus and subsequent resection, as McCosh shows, I believe to be fully as great as that of immediate excision. Especially is this true if we add the danger from opening the small intestine near the stomach — a danger which we cannot avoid in any case where the small intestine is involved, unless we explore the abdomen so extensively in our efforts to find out, that we add enough to the shock of the operation itself, and to the dangers of infection, to overcome the very doubtful balance of chances in favor of artificial anus. Another very potent objection to the palliative operation is the artificial anus itself, with its dangers and disadvantages. We always have excoriations of the skin, and may have extensive phlegmons. In most cases we have a septic condition of the surrounding parts which may be quite as dangerous as a source of infection at the secondary operation as at the first.

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[1] Concluded from page 152 of the Journal.

The dangers of sepsis are the greatest during the operation of excision, as it seems to me. Nothing could be more septic than the gangrenous sac in my second case. Yet it is quite evident that this danger exists to a very considerable degree in any operation where the ring is incised and the bowel pulled out. I believe that the danger of subsequent infection from failure of the stitches in artificial anus is very great; and that there is the same danger in secondary resection. It is certainly a very difficult thing to make a tight joint with two intestine-ends in the middle of a straight incision. In a case reported some time ago in the *Boston Medical and Surgical Journal*, of ulcerative perforation of the transverse colon, I met with this difficulty, and the patient lost her life from giving way of the stitches and fresh fæcal extravasation. If the bowel is not sewed into the ring there is danger of retraction of the ends into the abdominal cavity, as in Pye's case referred to above.

As regards the comparative mortality from the different procedures, very little dependence can be placed upon statistics. Strangulated hernia which has existed long enough to become gangrenous, is in itself a very fatal condition. So far as I have been able to find, the first case of successful termination of gangrenous hernia at the Massachusetts General Hospital from its foundation to the present day, was the case reported in this paper. With the exception of the first case, all were treated by incision or artificial anus. Some authors place the mortality very high in the artificial anus, and others very low. The only statistics that would be of any value would be those of well-known operators of great skill, where the conditions under which the two operations were done were approximately the same. Some deductions might be drawn from a very large number of cases from all sources, where the personal equation would be lost sight of, but as yet the number of cases is too small. It should be said, however, that it seems very probable that the mortality is higher after resection than the tables of McCosh show, because there are undoubtedly more cases of successful excision reported than of unsuccessful. Cure by the spontaneous opening of the gut, though not uncommon, must be extremely rare in proportion to the total number of cases left to themselves.

In comparing the mortality of the different operators, it must not be forgotten that the percentage of recoveries from all cases of strangulated hernia not relieved by taxis, is quite small. At the Massachusetts General Hospital, in 94 cases of all kinds upon which an operation has been done, there have been 52 recoveries and 42 deaths, a mortality of 44.6. Excluding the cases which were practically moribund on entrance, the mortality would be considerably diminished. Of these 94 cases, 7 were gangrenous and 2 doubtful. All the gangrenous cases died, including the doubtful ones, except the last, treated by excision and suture.

Statistics of Excision and Suture.— Schmidt gives the mortality at 71.1. Makins collected 55 cases, with a mortality of 52.7 per cent. Reichel, 1884, collected 56 cases, with a mortality of 52 per cent. McCosh collected 115 cases, with a mortality of 50 per cent.

Artificial Anus, primary operation. — Körte gives 111 cases of gangrenous hernia treated by formation of artificial anus with 100 recoveries and 11 deaths. Another author gives 32 cases, with no deaths. Coppens collected 28 cases, 12 recoveries and 16 deaths. Schmidt, mortality of 85.5 per cent. Hermann (quoted by Haenel) 83 cases, with 76 recoveries and 7 dearhs; 26 had fistula left. Weil, 15 cases, 2 recoveries with fistula, and 13 deaths.

Resection for Artificial Anus.— Makins records 40 cases, with mortality of 38 per cent. Haenel, 43 cases, 27 recoveries, 18 deaths; 37 per cent.

It seems to be the general opinion of surgeons, that under some circumstances, excision and return are justified. It seems to me that the primary operation should only be done when all the conditions are favorable. It is preëminently a hospital operation. Every appliance and preparation should be ready for its most perfect performance. It is not an operation to be recommended to the general practitioner or to the unskilful operator. It depends for success more upon rapid and skilful execution than almost any other operation. There is no doubt that in some cases the procedure is imperative where the part necrosed is too high up for the intestinal nutrition to be maintained. The difficulty, of course, is to be able to recognize this state of things. Even when it can be demonstrated that the jejunum is gangrenous, excision is not justifiable unless the patient's condition offers some hope. There is a chance that the relief of the symptoms of obstruction may be followed by sufficient improvement to make the secondary operation possible.

Note.— (June 14.) — The admirable papers published very recently by Abbe on the adaptability of Senn's principle of intestinal anastomosis to the treatment of fæcal fistula, either by the original decalcified bone plate of Senn or the catgut ring modification, are full of promise, though it is perhaps too early to say it will in all cases take the place of the methods considered in this paper.

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RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., BOSTON.

VISUAL CONDITION AFTER THE REMOVAL OF TOTAL CONGENITAL CATARACTS.

Fischer,[1] in an article upon the visual condition after the removal of total congenital cataracts, in which eleven cases are reported similar to his own, reports a case from the clinic of Professor Schoeler. Patient was a girl, aged eight, who had complete soft cataracts filling the area of each pupil. Pupil action, projection and light perception were good. There was no strabismus and no nystagmus. Both lenses were removed at the same time.

On the eighth day the pupils were free, media clear and each fundus was healthy. The bandage was discarded and patient for first time in her life was able to see. Placed back to the light she opened her eyes freely and directed them properly, when her attention was sufficiently excited. With bright and shining objects both eyes fixed properly without oscillation, but very soon the effort of attention ceased and movements from side to side began. Various things, such as an apple, plum, bread, fork and her own doll were placed before her, but she recognized none of them till she touched them with her fingers. She watched attentively the movements of a large cat, but had no idea what the appearance meant until the touch of her fingers explained it. On the third day when shown the same objects as on the previous day she failed to recognize any of them, and when told to select from similar series in her lap, a thing like the one held before her, she made great mistakes as to size. Several colors were recognized and named correctly. Moving about the room, she walked against every piece of furniture in her way. When taken into a garden, stood astonished before a tree. At the end of the third week, she had learned to recognize common objects about her and to play freely with other children, and was beginning to puzzle out the meaning of pictures of things already known to her in reality.

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[1] Klin. Monatsbl. f. Augenheilk., December, 1888, p. 461.

In summarizing the reasons of these observations, the writer emphasizes the statement, that in regard to the sense of form, the child was completely blind, and, whereas in regard to direction and to a lesser degree distance, there was already a certain degree of development.

ELECTRIC OPHTHALMITIS.

The effect of the electric light upon the eye has been written upon by Terrier[2] and Maklakoff,[3] and from a summary of the publishing cases, the symptoms would seem to be about as follows:

In mild cases discomfort and pain resembling that produced by a foreign body beneath the lid begins a few hours after exposure, together with a slight swelling of the lids and increased flow of tears. The conjunctiva is injected and œdematous, œdema being chiefly limited by the portion exposed in the aperture of the eyelids. The pupil is sluggish, fundus normal, but there are subjective sensations of light and color. The symptoms may disappear completely in the course of three or four days. In severe cases there is a scotoma, relative or absolute, covering the fixation point and an appearance of supplementary colors. After a few hours, there is injection and lacrymation, followed by intense photophobia. There is great injection of the conjunctiva, especially in the ciliary zone. The pupil is contracted. These disturbances are severe while they last, but diminish at the end of twenty-four or forty-eight hours, leaving no permanent injury. Some cases, however, reported by Little,[4] showed impairment of vision with haziness round the disc two months after the exposure.

Terrier thinks, with regard to the relative power for harm of the thermic, the luminous and chemical rays, that it is the chemical rays which are chiefly harmful, and calls attention to Foucault's proposal, that the eye should be protected by means of glass tinted with uranium, which has the property of intercepting the greater part of the chemical rays.

Maklakoff states that exposure to the arc light, used for the purpose of soldering metals in a large factory near Moscow, produced on himself, in addition to the eye symptoms, smarting of the skin of the face and other exposed parts which increased in three or four hours so that the skin became swollen and painful. A few hours after the exposure a coryza began, and a little later a troublesome dry cough. From the sixth to the tenth day, the acute symptoms subsided and there remained only a slight desquamation of the bronzed skin.

NITRO-BENZOLE POISONING.

Nieden[5] reports a case of amblyopia with contraction of the fields of vision in a man twenty-six years of age, with not a very vigorous constitution who, when first seen by the author, presented the following symptoms:

Marked cyanosis of the face and mucous membrane of the lips, enlarged dark veins on the bulba conjunctiva. His eyes were dull and the expression anxious, breathing labored, pulse thready and irregular, 148 to the minute. An odor, not unlike that of bitter almonds was noticed in the patient's breath. Auscultation and percussion revealed normal condition of the lungs. Area of cardiac dullness was not increased and there was a systolic murmur. Liver enlarged and tender. Spleen slightly enlarged. Urine normal. V. O. D. and O. S. = $\frac{10}{200}$. Fields of vision upwards, 30°, downwards, 20°, outwards, 25°, inwards, 35°. Field for blue smaller than that for red. Ophthalmoscopic examination: media clear; retina and papilla, marked venous congestion; papilla, clear except a small sector of the border of the lower disc-sight, where there was a patch of exudation surrounding a vein; no hæmorrhages.

As the patient was employed in the manufacture of the explosive compound, nitro-benzole or robusit, and toxic symptoms came on after he had been engaged in this work a few months, his condition was attributed to nitro-benzole poisoning. Having abstained from work and been given cardiac tonics, he improved rapidly. His eye symptoms improved more gradually than the others. No improvement in sight for one month, but in six weeks he was able to do his work. The exudation in the right retina became absorbed, and the venous turgescence disappeared at the same time with general cyanosis.

In the manufactory from which Nieden's patient came, in the space of twelve months the large proportion of twenty-five out of thirty-three workmen had suffered more or less severely. No fatal cases occurred, although Elerburg[6] says that 34% of the cases are fatal.

EYE INJURIES IN THE FRANCO-PRUSSIAN WAR, 1870–1871.

The Army Medical Department of the Prussian war-office has presented in Vol. III of the "Army Medical Reports," a report of the injuries of the eye in the German Army during the war with France in 1871.[7] This report coming at a much later period, is naturally much superior to that in "The Medical and Surgical History of the War of the Rebellion."

In a statistical presentation of the report, it is shown that during the war of 1870–71, injuries of the eye occurred 786 times, being 0.79% of the whole number of injuries, and 7.8% of the head injuries. Affection of the vision after brain injuries were met with in seventy-four cases; this is 0.7% of the head injuries. The left eye was injured more frequently than the right, there being 317 injuries of the right and 374 injuries of the left eye and 76 in both eyes. Further analysis shows that 313 injuries were caused by bullets, 197 by shells, 3 by blows and 25 by thrusts. The shell injuries were on the whole less serious than those effected by bullets. The eye was destroyed in 62% of the latter and 36% of the former. The probable explanation of this is, that the bony surroundings of the eye afford better protection from fragments of shell than from bullets. On the other hand, contusions of the eye by bullets were two in number against sixty-five by fragments of shell. The injuries were divided among the different structures of the eye according to the following percentages:

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[2] Archives d'Ophthal., January and February, 1888, p. 1.

[3] Archives d'Ophthal., March and April, 1889, p. 97; Ophthal. Review, May, 1889.

[4] Ophthal. Review, vol. II, p. 106.

[5] Centralbl. f. Prakt. Augenheilk., July, 1888.

[6] Handbuch Öffent. Gesundheits., Bd. II., p. 535.

[7] Abstract. In Centralbl. f. Prakt. Augenheilk., Oct. 1888, p. 309.

Injuries of the sclera and conjunctiva, 3 %; cornea, 7.7 %; cornea and iris, 9.3 %; iris, alone, 7 %; lens alone, 5 %; vitreous, 3.3 %; retinal and choroidal hæmorrhage, 3 %; rupture of the retina and choroid, 12.3 %; separation of the retina, 9.3 %; inflammation of the membranes of the eye, 15 %; changes in the papilla, 10.7 %; loss of sight from various causes, 22 %. Injuries of the anterior portions of the eye were, in many cases, not followed by loss of the eye itself. Various noteworthy cases are reported; one in which hæmorrhage in the vitreous was caused by the atmospheric pressure of a discharge close to the left temple. Detachment of the retina followed. In eleven cases, the injury was attributed to the passage of a missile close to the eye without touching it. Among 69 injuries in the eye from bullets coming from one or the other side, the temple wall of the orbit was perforated in 34 cases, the nasal wall in 15, the roof in 15, the floor in 5. Two eyes were destroyed by shots from behind. In 28 cases both eyes were injured by bullets and in 9 of these both eyes were immediately destroyed. In many cases bullets were split or shattered by striking upon the margin of the orbit or upon the bridge of the nose. Many injuries were caused, not by the missile itself, but by other bodies striking against the eye, that is, stone, sand, spectacle-glass, etc.

No case of loss of sight due to copious loss of blood, is recorded throughout the campaign. Partial detachment of the iris occurred both at the immediate point of the injury and at the opposite side of the circle. Retroflection of the iris was observed in two cases.

In regard to the sympathetic affection of the second eye, 99 cases are recorded, but in many of these the diagnosis is somewhat uncertain. In 51 % of the cases of supposed sympathetic affection, there is no record of any but subjective symptoms. In 17.4 % there was inflammation of the conjunctiva; in 18.5 % affection of the anterior portion of the eye and in 13 % affections of the fundus. Enucleation was performed 23 times for the relief or prevention of sympathetic inflammation. In six of these cases, five of which were operated on within ten days of the accident and one seven months after, the uninjured eye was healthy; in five it improved after enucleation and in twelve the operation had no beneficial effect.

Of all injuries that destroyed the eye, left a foreign body in it, or set up a cyclitis, 56 % are said to have set up sympathetic ophthalmia. Panophthalmitis appears to have caused sympathetic inflammation as often as any other form of traumatic inflammation. Injuries which immediately and completely destroyed the eye caused sympathetic ophthalmia in 62.7 % of the cases. The inflammation most often appeared in the second six months after the injury. Probably the most startling portion of these statistics are those which relate to sympathetic ophthalmia.

AMAUROSIS WITHOUT OPTIC NEURITIS IN A CASE OF CEREBRAL TUMOR.

J. Hutchinson Jr.[8] reports a case of amaurosis without optic neuritis due to a cerebral tumor. The patient was a young laborer aged twenty, a bricklayer by trade, said to have been healthy till the spring of 1888, when his health began to deteriorate, and he became worse day by day. He noticed also some general weakness, became more tired than formerly, and, after a time, the eyes and head began to ache. At first intermittent, the headache became almost constant, and on June 25th the loss of sight, which affected both eyes, had so advanced that "he could not see to read large type, even when held close to the eyes." "The tops of the eyes ached"; and on June 30th he vomited once. He was thought to have tobacco amaurosis for the following reasons:

(1) The failure had been gradual, and was wholly unaccounted for by anything seen in the fundi. Both eyes were emmetropic.

(2) When tested by the perimeter, central scotoma for red and green was made out.

(3) He stated that he was in the habit of smoking about one-half an ounce of shag daily.

On investigating the case, it seemed improbable that it was really one of amblyopia. His age was much against him, and there was some evidence of mental deterioration. In addition to his complaint of headache and loss of sleep, the patient was liable to break into causeless laughter; he had a heavy and stupid expression and answered questions in a slow and rather imperfect manner. The pupils were large, and acted very slowly to light and accommodation.

The patient was admitted to the London Hospital on the 15th of September, and died three weeks later. Headache was constant to the end, but there was not the slightest evidence of neuritis and only occasional vomiting and nausea. Post-mortem examination was as follows:

Viscera healthy, with the exception of the brain. A large, soft glioma involved the apex of the right temporo-sphenoidal lobe, and reached across the middle line in the interpeduncular space. "On examining the brain more closely, it was found to be too soft to allow the exact limits of the tumor to be made out, but the growth had penetrated somewhat deeply to the right crus cerebri at the base of the brain; it extended over an area about as large as the palm of the hand and about one-half an inch in depth." The optic nerve and the posterior halves of the globes were removed and sections made involving the optic papillæ, within tranverse sections of the optic nerves both near to the eyes and towards the chiasma. The results showed that the nerve in the transverse section was equally affected throughout. The peri-neural sheath was filled up with small, round cells and delicate connective tissue, which, no doubt, consisted of prolongations of the gliomatous structure downward from the base of the brain toward the globes. Immediately behind the lamina cribrosa was also a similar infiltration, the papilla itself, however, being quite normal. In the interstitial bands there was little evidence of change, nor could there be said to be any true neuritis.

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[8] Royal Ophthalmic Hospital Reports, January, 1889.

Looking at the slight character of the changes present, it seems most probable that the amaurosis was due to the involvement of the optic chisma or tracts in the growth.

According to Annuske and Reich, papillitis is absent in only about 4 % of the total number of cases of cerebral tumor. It would be of interest to know in what proportion of 4 %. amaurosis was present without changes visible to the ophthalmoscope.

OPHTHALMIA MIGRATORIA.

Deutschmann[9] has been repeating Gifford's experiments (formerly reported in these papers) of injecting India ink into a rabbit's vitreous. Gifford traced the pigment subsequently along the central vessels passing with them out of the opticus thence back to the apex of the orbit. Deutschmann's results agree in part with Gifford's, but he also found the pigment in the sub-vaginal space close to the globe; it reached this space either by passing along the radiating vessels in the opticus, or by getting caught in the descending lymph stream at the point where the central vessels leave the nerve, and it gradually left the vessels after they had reached the orbit, so that none could be traced to the apex of that cavity. By injections into the orbit itself, he found that the pigment passed downwards and inwards between Harder's gland and the infra-orbital gland along the membrane orbitalis and that afterwards it passed through a fissure at the inferior border of the orbit and spread itself on the surface of the maxilla, but the pigment did not pass out of the orbit into the cranium. If it did in Gifford's experiment, it could not have been free pigment.

This experiment shows that the lymph stream in the inter-vaginal space runs toward the eye-ball and then passes partly into the orbit along the central vessels and partly into the supra-choroidal space, whence it gets under Tenon's capsule along the vasa vorticosa and so into the orbit. A third stream passes through the dural sheath into the supra-vaginal space and so into the orbit. Gifford's views are essentially the same. Deutschmann then submits Gifford's pathological experiments to a detailed criticism and concludes that Gifford has in no one of his three successful inoculations demonstrated the passage of microbes from the orbit into the cranial cavity, but that his experiments tend to prove that they pass from eye to eye, along the inter-vaginal space.

Deutschmann has obtained twelve positive results from thirty-four inoculations and in the successful cases has traced the micrococci from the vitreous along the central canal of the opticus accompanying the vessels, while the latter were in the nerve. Further back the collections of cocci were to be found in the inter-vaginal space of the nerves and the pia-mater of the chiasma, but hardly any colonies were detected in the orbital tissue itself. The experiments seem to have been restricted to rabbits.

Bacilli and cocci affect the eye differently; the former grow more rapidly, but set up less inflammation, the latter produce dense cellular infiltration round the sheaths of the central vessels which prevents the advance of the cocci out into the orbit, as the pigment granules do in physiological experiments; they then, Deutschmann says, work their way through lymph paths up stream to the chiasma. The inter-vaginal space is the true path taken by the cocci, the optic nerve itself is only implicated secondarily. The cocci reach this space either directly from the choroidæ into the pial sheath of the opticus, or along the radiating vessels in the opticus; they may pass from the supra-choroidal space, but Deutschmann has not seen this.

Deutschmann has demonstrated that the microbes in eyes exciting sympathetic ophthalmia are veritably pathological, by cultivating them in blood serum. The cultivations produced colonies of typical staphylococci pyogenes, albus and aureus, and the cultivations produced the same malignant types as their progenitors, when inoculated into rabbits' eyes. Pathological microbes have been found by Deutschmann in the sympathizing eye in five cases, of which one, at least, has been published. Cultivations from pieces of iris or aqueous humor produced colonies of staphylococci either white or yellow and inoculation demonstrated their pyogenic character. The rarity of sympathy from suppurative panophthalmitis is not opposed to the theory laid down, for as Leber holds, the cocci may be expelled by perforation, or rendered inactive by profuse suppuration, or, as Gifford holds, the lymph paths may have been mechanically sealed up by lymph cells. Deutschmann rejects the cases of so-called sympathetic disease excited by wearing artificial eyes, as either not sympathetic at all or occasioned by some other cause than the presence of a glass eye. The occurrence of sympathetic disease after enucleation is no objection to the theory, and the fact that a certain time always elapses between the injury of the first eye and the sympathetic disease of the other, of course supports it. The time varies from ten days, the earliest time reported in any case which Deutschmann allows, to many years, in one case thirty-five. The long intervals are accounted for either by the vitality of the microbes or by subsequent infection. Sympathetic conjunctivitis described by Galezowski, Webster and Brailey, is to be rejected completely, as are also scleritis, keratitis, cataract, retinal detachment, opacity of the vitreous, and only the classical irido-choroiditis is allowed to claim the title of sympathetic inflammation, sharing the honor, however, with neuro- and chorio-retinitis, of which many cases have been described in modern times.

The operations admissible for the protection of the second eye, are enucleation, evisceration, neurotomy of the opticus, with or without resection. Enucleation is the most certain, but evisceration with disinfection of the interior of the globe, effects the same object and, with the eyes in the state of panophthalmitis, is the better operation. Simple neurotomy cannot be certain in its results and Leber has published a case of sympathy two and one-half years after resection, but resection of a 10 mm. piece of the nerve, as practiced by Schweigger, may fulfil the indications, although Clausen has published a case where sympathy followed within seventeen days of such an operation. As the most rational treatment, an early iridectomy and repeated paracentesis of the anterior chamber is proposed, mercury to be given at the same time, and corrosive sublimate to be dropped into the conjunctival sac, as proposed by Gallenga.

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[9] Ophthalmia Migratoria. Sympathetic Ophthalmitis. Hamburg, 1889. Ophthalmic Review, April, 1889.

Clinical Department.

AN INTERESTING CASE OF TRACHEOTOMY.

BY O. G. PFEIFFER, M.D., DENVER, COL.

Willie L., four years old, had an attack of membranous croup, which advanced until tracheotomy became necessary. As my assistants did not arrive soon enough, I cut down upon the trachea, made an incision below the cricoid cartilage, and inserted the tube.

Forty-eight hours later the membrane had formed below the tube, and before a messenger could find me, the child had slowly become asphyxiated, had passed through several convulsions, was of a blue and white mottled facial appearance, and was making an occasional struggling respiratory effort in which all the muscles of the face, throat and chest joined, but which drew no air into the lungs.

At first, the frequent futility of tracheotomy in diphtheria and membranous croup was uppermost in my mind; the next instant the thought occurred, Why were not tracheotomy tubes made longer with, perhaps, a flexible rubber prolongation of the tube? Then the thought occurred to me that, as the trachea was plugged with croupy deposit, Why could not the calibre of the trachea be dilated by the passage of a rubber bougie? Meanwhile, the child was practically dead.

A small new No. 8 soft rubber catheter was hastily seized and pressed through the tracheotomy tube, and forced on down the trachea some three or four inches. It was then withdrawn. The next struggle of the child for air was accompanied by a slight squeaking noise of air sucking a little through the trachea. The subsequent efforts of the child for air were assisted by artificial respiration with such success that, in ten minutes, the child had regained consciousness and looked around. The breathing improved.

Having been so fortunate by the introduction of the rubber tube as to get a little air into the lungs, I concluded, after the child had breathed a few times, to introduce it again. This was done, and a violent effort of coughing forced out a membranous cast of the trachea, half an inch long, that had been loosened by passing the tube. In a few minutes, the boy was breathing gently and easily, had regained consciousness and recognized his mother.

During the next four days and nights this tube had to be passed down the trachea and the loosened mucus coughed up; after these four days the trachea became clear of membrane, and in three weeks the child was well.

The lesson this case teaches is, that persistent effort, even in a seemingly hopeless case of tracheotomy, may avail something, and also raises the question, Might it not be an advantage to make tracheotomy tubes longer, with a flexible rubber prolongation of the inner canula?

— Mr. Elihu Stevens, aged 101 years and six months, the oldest man in the State of Maine, died August 11th, at Belgrade, where he was born, January 26, 1788. He was the father of twenty-two children, the most of whom are now living, and his descendants in the third, fourth and fifth generations numbered three hundred and twenty-six at the time of his one hundred and first birthday.

Reports of Societies.

MEETING OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

May 11, 1889, the President, Dr. J. P. Reynolds, in the chair.

Dr. Townsend read a paper entitled

AN EPIDEMIC OF MEASLES WITH REMARKS ON RÖTHELN.

The reader described an epidemic of 76 cases of measles many of which were mild, some exactly resembling the description given of rötheln while others were typical cases of measles. He concluded that this was an epidemic of measles as of some 73 other children exposed who did not contract the disease, 66 had had measles before, most of these in an epidemic of the year before. This later epidemic although generally of a severe type, contained one case at least which he related and which closely resembled the description given of rötheln.

At the same time that the mild epidemic was at its height a small epidemic occurred at the McLean Asylum, all of the cases being in adults and all resembling the description given of rötheln. The following conclusions were drawn:

(1) That mild epidemics of measles occur in which many of the cases exactly resemble cases described as rötheln.

(2) That in the severe epidemic of measles similar cases resembling rötheln are occasionally found.

(3) That enlarged cervical glands and sore throat are sometimes found in measles and are not always present in cases described as rötheln.

(4) That there is no distinct symptomatology for rötheln.

(5) That the strongest evidence in favor of the individuality of rötheln is the fact that previous attacks of measles or scarlet fever afford no protection from this disease.

(6) That as second attacks of measles do occasionally occur, it is impossible to make the diagnosis of rötheln, unless, as in the Charterhouse and asylum epidemics, we meet with a series of cases many or all of whom have previously had measles.

(7) That as it is impossible to say how many second attacks of measles may occur in a given epidemic, this evidence of the individuality of rötheln is made somewhat problematical, and gives rise to the question, which the author was unable to answer, Is it possible that in some epidemics and not in others measles attacks equally those who have had measles before and those who have not, and afterwards affords no protection from measles? In other words, is rötheln a mild form of measles?

Dr. C. P. Putnam, a guest, was a thorough believer in a separate disease, rötheln, and he saw no reason why there might not be several different diseases, resembling each other in some particulars. He had seen several eruptive diseases this winter, which resembled rötheln, but which did not give rise to other cases. He thought that cases described as rötheln never gave rise to regular cases of measles, and that this was therefore an unanswerable argument in favor of rötheln as a distinct disease. He related a case of a young man whose father two weeks before had an evanescent measles like rash but was not sick. The young man had a slight scarlet fever-like rash, and two weeks later almost every other member of the family were slightly sick with a macular and papular eruption and slight catarrh. These cases he called rötheln.

Dr. Buckingham, present by invitation, agreed with the reader and said in studying the diagnosis between measles and rötheln, whether in text-books or in the reports of epidemics, we find it made in the most various and contradictory ways, some writers not entirely agreeing among themselves to base their decision wholly upon the general symptoms, such as the length of stages or the severity of the disease; expressly stating that there is no difference in the eruption. Others make the diagnosis upon the eruption alone, and either ignore the general symptoms, or even state that they are not to be relied on for differential diagnosis. Dr. Townsend has, in the speaker's opinion, rendered a service in calling attention to the differences in cases of measles, and it is not only true that cases differ in towns during the course of an epidemic, but even in the same house at the same time, and to a great degree. He does not believe it possible to differentiate isolated cases. The only proof of the existence of two diseases seems to be the occurrence of epidemics having an individual character.

There is perhaps room for fair difference of opinion as to whether this ground is sufficient or not. We should not forget that there are individual characters to certain epidemics of other diseases, typhoid for instance. Meanwhile, the practical result of the present state of knowledge should be in the speaker's opinion, the treatment of rötheln so far as isolation goes, as if we knew it to be measles.

Dr. Jackson, a guest, spoke of the importance of thorough washing and scrubbing for disinfection as preferable to sulphur fumigation.

Dr. Rotch agreed with the writer and thinks it strange that we are still as much in the dark about rötheln as we were fifteen years ago. That until a symptomatology is given distinct from that of measles the existence of rötheln is unproven. We are learning more and more that attacks of measles are not necessarily protective from other attacks. Strümpell's description of rötheln is suitable for certain cases of measles. He saw nothing remarkable in Dr. Putnam's cases and he saw similar ones in epidemics of measles.

He would like to learn how to make a diagnosis. He remains in the same position as Henoch, of Berlin, who says he does not recognize the disease, having never seen a case. Dr. Rotch had made great efforts to see cases, having gone to the northern part of this State to see what was called an epidemic of rötheln. He found, however, typical cases of measles grading off into the mild cases previously described.

Dr. Cotting spoke of an epidemic occurring in 1851–52, which, with Dr. J. Homans, Sr., he had reported, the cases resembling very mild cases of measles or scarlet fever. The article was published in the *Boston Medical and Surgical Journal*, in May 15, 1873, after reading a paper by M. Thomas of an epidemic exactly similar and called by him rötheln.

Dr. Rotch said that M. Thomas has since described cases of measles at the same time with which cases occurred resembling rotheln.

Dr. C. P. Putnam said that rötheln resembles only the exceptional cases of measles or scarlet fever. It is hardly fair to suppose that a whole family may all be affected with a mild form of disease without any severe cases. He had never known of a case where the poison of measles was carried by a third person, and said that the poison of measles died much quicker than that of scarlet fever.

Dr. J. Stedman related a case where a child was sick with measles, and its mattress was rolled up and put in the attic. A year later another child slept on the mattress, and exactly two weeks later came out with measles. In this case the poison had been preserved by non-exposure to the air. He asked the question, How long after an attack of measles should the child be isolated?

Dr. C. P. Putnam said that, as a rule, four weeks' isolation was long enough in scarlet fever, and ten days in measles.

Dr. Rotch thought that this depended on the individual case. The greater the dermatitis, the longer the desquamation. Measles was probably more contagious by the breath than by the epidermal scales.

Dr. Lyman said there was nothing so embarrassing as the diagnosis of these cases, and thought it was about time the profession had made up their minds whether there was a distinct disease rötheln, or not. He spoke of a case of severe measles followed in a week by a mild attack in the same patient. He also spoke of the importance of isolating mild as well as severe cases, for one may give rise to the other.

The President thought that we often unnecessarily alarmed society by our great care in isolating cases.

Dr. Rotch thought it was much better to protect society, and stamp out the disease, even at the expense of frightening the family.

Dr. Strong exhibited the specimens removed by laparotomy from two patients in whom the clinical and physical symptoms were almost identical, illustrating the difficulty of making a diagnosis before opening the abdomen.

I. TUBO-OVARIAN CYST: SUPPURATING, SIZE OF SMALL ORANGE.

Patient thirty years of age; married two years. For four years previously had had pain in left ovarian region, which had steadily increased during the past year. Menstrual periods were much prolonged and very painful since marriage. The patient had never been pregnant. During the past year had lost much flesh, and had several slight attacks of recurrent peritonitis. Vaginal examination showed a strongly anteflexed uterus. The left side of the pelvis and Douglas's fossa was occupied by a mass of inflammatory exudation surrounding a tensely elastic swelling of quite regular outline, immovably adherent and about the size of an orange. Before operation the diagnosis was made of a probable dermoid tumor of the left ovary, from the presence at the lower part of the tumor of a very hard mass feeling precisely like the bone plates found in dermoid tumors. The possible diagnosis of tubo-ovarian cyst was left open. Operation showed it to be the latter.

II. DERMOID TUMORS OF BOTH OVARIES.

Patient twenty-eight years of age. Having a fall five years previously, pain began in the left ovarian region, and had since continued at irregular intervals, accompanied by slight, sharp attacks of peritonitis. The patient had been married eighteen months, since which time she had flowed excessively at each menstrual period, and was sterile. Her temperature, as taken at intervals during the three months she was under observation, varied between 99½° and 101°. She had lost much flesh. Vaginal examination showed an anteflexed, enlarged uterus. Behind the uterus, and extending on either side up to the pelvic brim, were firm, fluctuating swellings, each the size of a small orange, surrounded by inflammatory exudation, irregular in outline, immovably adherent, and on the left extending apparently along the course of the broad ligament well to the side of the pelvis. The diagnosis was recorded, of probably double salpingitis, but the possibility of ovarian cysts, simple or dermoid, was also considered. Operation proved the latter the correct diagnosis.

The two cases showed parallelism in the clinical history, of time, sterility and menorrhagia since marriage, disability, localization of pain, and recurrent attacks of peritonitis. Physically the tumors were almost identical in their site, shape, sensitiveness, immovability and size, differing only that in the one case it was single, and in the other they were double.

Dr. Strong also referred to a third case, in which he had removed a simple ovarian cyst which had developed from a prolapsed ovary, in less than three months. The patient presented no other lesion than prolapse of the left ovary into Douglas's fossa. The entire surface of the ovary could be, and was, thoroughly examined. As the patient's ill-health was apparently from general debility rather than uterine disease, no local treatment was advised. Six weeks later the ovary was found to be enlarged to the size of an English walnut, and very sensitive. Under an ether examination no irregularity in outline was detected. In six weeks from the second examination a laparotomy was performed, and an ovarian cyst the size of a cocoanut was removed. The cyst was very thin walled, and the enclosed fluid very clear. It grew from the upper free border of the ovary. The specimen, which was to have been shown, was unfortunately destroyed. The convalescence of all the patients was normal.

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AMERICAN NEUROLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, at Long Branch, N. J., June 26 and 27, 1889, the President, Dr. E. C. Seguin, in the chair.

FIRST DAY. — MORNING SESSION.

Dr. Morton Prince, of Boston, presented a paper on

MALARIA AS A CAUSE OF DEGENERATIVE DISEASES OF THE SPINAL CORD.

He spoke of the frequency of tabes and other spinal degenerations in cases which also presented a history of malaria. The first case he had recorded was one of locomotor ataxia with typical tabetic crises before each malarial chill. Another had gastric crises regularly once monthly, and another crises beginning with rigor and followed by diarrhœa this occurring every three weeks. The latter case had been diagnosticated as malaria by the family physician. Altogether, the author reported in detail six cases showing the coexistence of tabes with malaria, and six cases where the malarial history was associated with disseminated sclerosis. Besides these, he had notes of three other cases of multiple sclerosis, two of locomotor ataxia, and one of lateral sclerosis with a similar relation. Generally the malarial poison was present in the system previous to the development of spinal symptoms. He pointed out coincidences in the course of syphilis and malaria, such as the slowness of action of the poison and amenability to treatment; and also called attention to the relation of the syphilitic virus to tabes. He had found but little to support his etiological theory in literature. Erb, following Schulze, had stated that tabes may occur as a sequel to intermittent fever. Tuezek had proven that tabes could be caused by the ergot parasite. Many nervous disorders are undoubtedly due to malaria, such as neuralgias, anæsthesias, severe psychoses, etc. He alluded to the deposition of pigment in the brain in some cases of pernicious malaria. It would be very important for many army pensioners if it could be definitely determined that tabes and sclerosis might be sequelæ of malaria.

Dr. N. F. Brill said that his attention had never before been directed to the possibility of such a relation, but he thought the details presented were rather too meagre for an absolutely correct decision to be made in the matter. As neuritis and malaria were frequently associated, possibly some of these spinal cases might be coincident in the same manner. Both malarial and cord disorders are very common.

Dr. L. C. Gray saw no reason why the malarial poison should not cause spinal diseases. We do not yet know the exact character of the poison. But there is a sort of periodicity in many spinal and cerebral disorders, as well as in peripheral nervous affections, which is often as marked as that of fever and ague. He had noticed this particularly in intracranial syphilis. Some of these neuropathics were even relieved by quinine, as he had observed in cases of tabes. When we speak of latent malaria, and rest our diagnosis merely upon periodicity, there is danger of error. If Laveran and Councilman were right in their discovery of the malarial germ, this should be looked for in such cases as the author had described, in order to corroborate with certainty the diagnosis. Improvement or recovery under the use of quinine was no criterion.

Dr. E. C. Spitzka saw nothing in the nature of the case to forbid an etiological association between malarial and cord disorders, but he agreed with the preceding speakers that sufficient proof of such relation had not been adduced. To show an etiological significance, it was necessary to present absolute and intrinsic proof of it. If it could be shown that, as in syphilis, there were at the time of the malarial attack nervous symptoms, it would be a different matter. In the secondary fever of syphilis there was absence of the knee-jerk. Most nervous symptoms in malaria were of a neuralgic character. The anæsthesias differ from those of tabes. It had been found that pigmentary thrombosis or embolism were the most frequent causes of serious nervous disturbances in malaria. He believed, however, that like any other cachexia, antecedent malaria might predispose to spinal affections. He had observed a case of paretic dementia of the tabetic type which was probably influenced etiologically by severe malaria.

Dr. H. M. Lyman, of Chicago, could recall but two cases where it had been intimated to him that the origin of tabes had been malarial. In one he traced the actual cause to a subacute spinal meningitis coming on after exposure to wet and cold. The other case, instead of being true tabes, had proved to be a rheumatic neuritis. He had, in his experience, seen nothing to support the idea of a malarial etiology in tabes. A complete and perfect history, together with a microscopical examination of the blood, should be required for an indisputable diagnosis of malaria.

The President could not recall a single case of tabes or multiple sclerosis which presented any relation to malaria.

Dr. Prince thought there could be no question as to the correctness of diagnosis as regarded the nervous symptoms in his cases; and as to the antecedent malaria, all of his cases were men who had been in army service, and he had documentary proof of their having suffered from that poison, in the shape of government records. The really doubtful question was whether the malarial poison still existed in the system at the time of the development of the spinal disorders. In some of them there was evidence of its persistence in the shape of typical malarial rigor and pyrexia. He did not consider his etiological explanation decisive, but merely suggestive.

Dr. Spitzka thought that there were many cases of nervous disease owing their origin to exposure during the war which were contemptuously rejected by the Pension Bureau. It seemed to him that the Association ought to call the attention of the government to the great injustice which might be done.

The President, although once an army surgeon and therefore prejudiced in favor of the soldiers, had been on the contrary struck by the vast number of fradulent nervous cases which were awarded pensions.

Dr. W. M. Leszynsky, of New York, was then elected to membership, and Mr. Victor Horsley and Dr. David Ferrier, of London, were elected to honorary membership. The resignation of Dr. Rockwell, of New York, was accepted.

AFTERNOON SESSION.

Dr. B. Sachs, of New York, reported a case of

NUCLEAR OPHTHALMOPLEGIA WITH POLIOMYELITIS (POLIOENCEPHALITIS SUPERIOR AND POLIOMYELITIS).

The relation between these two forms of disease which had been suspected by Hutchinson, Mauthner and others was proven by this case. But one other was on record, that of Seligmuller. The history of the patient was briefly that of a ptosis of the right eye gradually developed, followed after a few months by ptosis of the left eye also, and soon after a paresis of all the external ocular muscles of both eyes appeared. This resulted in almost absolute fixation of the right eye, but left a slight inward and upward movement of the left. There was immobility of the left pupil to light, but not to accommodation. The right could not be examined because of corneal opacity. During the development of this nuclear ophthalmoplegia, a subacute poliomyelitis affecting the entire right leg supervened. There was now marked atrophy of the entire right leg. The knee-jerk was lost on both sides. There were no sensory disturbances. There were no tabetic symptoms and the patient's condition was normal in all other respects. This case proved that the affection of the nuclei in the floor of the third and fourth ventricles was due to the same pathological process which gives rise to poliomyelitis when it affects the gray matter of the cord.

Dr. Spitzka said the report of the case had been so complete and there being but one other such case on record, it did not admit of either criticism or comparison. He referred to Thomsen's case of unilateral nuclear paralysis, where there was a gummatous infiltration on both sides, and the explanation of which was to him quite impossible.

Dr. Sachs asked if fibres could be traced up through the ciliary nuclei.

Dr. Spitzka answered in the affirmative and made blackboard drawings illustrative of their course.

Dr. W. N. Bullard, of Boston, then presented for Dr. J. J. Putnam a skull which was a remarkable example of

HYPEROSTOSIS CRANII.

The case had been reported to the Association two years ago. The patient was a woman thirty-one years old at death. The chief symptoms were headache, broadening of the head, dropping out of teeth, loss of hearing, vertigo, beginning some years ago. There was extreme exophthalmos. There were no retinal changes. Extensive pachymeningitis was discovered at the autopsy. There was thinning and atrophy in parts of the skull. The orbital cavities were greatly diminished in size. Virchow considered hyperostosis cranii due to inflammatory changes. In this case probably the inflammation originated at the ear. Dr. Putnam had a patient now with similar symptoms, in whom the exostoses were first noticed in boyhood, and desired the opinion of members as to the justifiability of removal of certain exostoses for the relief of pain. Dr. Bullard himself thought it might be difficult to determine which of the exostoses produced the pain. Some of the exostoses were very diffuse and the operation might have to be extensive.

The President believed that the pain would be more apt to originate from basal lesions, possibly dural inflammation about the issuing nerves. The jaw in this case was interesting because of its senile conformation and angle, despite the youth of the patient.

Dr. W. M. Leszynsky, of New York, read a paper entitled

SPONTANEOUS DEGENERATIVE NEURITIS OF THE BRACHIAL PLEXUS.

The patient was a laborer, age thirty-eight. He first had pain in the left shoulder shooting down the arm which was ascribed to exposure to wet. There was then no involvement of the shoulder joint and the motility of the arm was unimpaired. All the muscles reacted well to faradism, except the deltoid which was atrophied. There was no sensory disturbance, but there was pain on pressure. Gradually another muscle became paralyzed, until a large number of the arm muscles were useless. The paralysis was accompanied by pain so excruciating that the patient could not sleep at night. A feeling of numbness extended from the shoulder down the arm over the radical distribution, and a gradual anæsthesia and analgesia supervened throughout the same area. The faradic excitability disappeared, and there was galvadic hyperexcitability. Then he began gradually to improve and will ultimately recover. The case was remarkable in its severity, in its idiopathic origin, and in the escape of the median and ulnar nerves from the inflammatory process. Not more than one case had to his knowledge been found in literature.

Dr. Prince thought it would be difficult in the early stages of such a case to distinguish it from progressive muscular atrophy of the shoulder type. He recalled a case of his own in which there was every reason for considering it to be neuritis. It began with cramps such as are observed in writer's cramp, and it was several years before other symptoms proved the case to be one of progressive muscular atrophy. The most common cause in such cases as the author's, was traumatic arthritis, but generally the results are slight.

Dr. W. R. Birdsall had seen this case before, and was impressed with the idea that it might be a periarthritic affection, but the author's careful study of the case seemed to exclude this. He recollected that at that time there was some anchylosis of the shoulder joint in the case.

The President considered the study of the differing resistances in the healthy and diseased arm made by the author interesting, and asked if any member had had experience in such measurements.

Dr. Gray had noticed much variation in resistance in many of his patients from day to day.

Dr. Starr had measured the resistance in Basedow's disease, and had found it to vary within a thousand ohms in the same cases from time to time. Electricity was diffused through muscular better than any other tissue. The chief resistance was in the skin. Probably but little of the current permeated nerves, and hence alterations of nervous tissue would not have much to do with the variations mentioned by the author.

Dr. G. M. Hammond stated that it was well-known that the resistance differs from day to day in animals. He asked if in this case it had been measured for a number of times, and was answered that eight trials had been made.

Dr. Birdsall thought the question of resistance had little to do with our study of disease. It was easy to explain the numerous variations, by the wide differences in vascularity and moisture of the tissues at different times. It might be due in this case to paralysis affecting the physical condition of the tissues. The saturation of the epidermis by perspiration would explain the variations mentioned by Dr. Gray. He had made measurements in cases of Basedow's disease some time ago, and believed the diminished resistance found due to the moisture of the skin. It could not depend on dynamic conditions in the nervous system, but was purely a matter of physics about which there was no great mystery.

Dr. Gray said the explanation by moisture of the skin was not applicable in his cases. The differences which he had observed were not owing to the humidity of the atmosphere, although atmospheric conditions might possibly induce dynamic changes in the body.

Dr. Sachs pointed out that on one day the author's case showed 580 ohms increase on the diseased side, and on another day 1,170 ohms increase on the sound side. Such variations evidently had little to do with the pathological process in the patient. Eulenburg had measured the resistances in cases of paralysis agitans and of Basedow's disease, but without any practical results. As such measurements were very complex, they required exceedingly great care.

Dr. Prince objected to the use of the palm of the hand for precise experimentation, owing to the great variability of the thickness of the skin, and consequently of the resistance. He thought the forearm ought to be used.

Dr. Leszynsky had not brought forward the question of resistance in this case as a diagnostic symptom. It was increased in the affected arm at every examination. With subsidence of the symptoms the resistance gradually diminished, but there was a difference between the sound and morbid side throughout the disease. As to the question of moisture, there was excessive perspiration upon the paralyzed arm, while the normal arm was dry, in spite of which the resistance was greater upon the former. He thought it better to place the electrode upon the wrist than in the hand. There was no antecedent traumatism in the case; the roughening of the shoulder joint was the result of the paralysis.

Dr. M. Allen Starr, of New York, then presented a specimen of an

INTERPEDUNCULAR MYXOSARCOMA.

It lay in the middle cranial fossa in the median line between the crura cerebri which it separated. It extended into the lateral ventricles, separating widely the caudate nuclei and optic thalami. The patient was a male, aged twenty-one months at death. At the age of thirteen months, in October last, a lateral nystagmus had been observed in both eyes varying from time to time. Drs. Knapp and Roosa found a slight pallor of the optic discs which they considered normal. Later exophthalmos developed, gradually increasing until death. Convergence of the eyes was impossible, although no paralysis of a cranial nerve was discoverable. The reflexes of the iris were lost. Towards the middle of April this year, the child became unable to walk. The knee jerks were exaggerated, there was ankle clonus, and typical spastic rigidity. Finally the back could not be held up, and later the head could not be supported. There was gradual emaciation. There was no apparent headache. From time to time the scalp was congested. About this time the pallor of the optic discs indicated atrophy. There was no blindness, no hemiopia, no aphasia as far as could be ascertained in so young a child. Towards the middle of May, ataxia of the arms developed, but without the loss of muscular power. On June 8th, vomiting and Cheyne-Stokes respiration came on, and the child died in nine hours. The diagnosis of the tumor had been made, but the question of localization was of great interest. Nystagmus was not a localizable symptom, but had been found most freqently in lesions of the corpora quadrigemina. The exophthalmos indicated intracranial pressure; the gait disturbance led one to think of a cerebellar lesion; while the ataxia of the hands pointed to a basilar trouble affecting symmetrically either the pons or the medulla. The question of operative interference had been considered, but he had opposed that proposition because of the difficulty of localizing the tumor. The autopsy proved that the pons was not even pressed upon, and that the cerebellum was normal. There were twenty ounces of fluid in the ventricles. He would ask if there was any localizing value in nystagmus or exophthalmos, and what was the probable cause of the ataxia?

The President in referring to the question of ataxia recalled a case of remarkable bilateral ataxia with optic atrophy, where a large interpeduncular tumor was found between the crura. He thought such ataxia was to be accounted for by pressure upon the motor tracts or motor nuclei. To him the most puzzling feature of Dr. Starr's case was the absence of blindness. As to the nystagmus, it had as yet in his opinion no localizing value. He had seen two cases with lesions of the quadrigeminal bodies but without nystagmus.

Dr. Leszynsky said the child may have had only central vision which might explain the presence of nystagmus, but Dr. Starr answered that the visional fields were normal.

Dr. Sachs was reminded of Meynert's case of tumor in both optic thalami with ataxia similar to that of Dr. Starr's case. He thought the thalami might have been pressed upon in the latter, but still was not sure that would cause the ataxia. He considered nystagmus very frequent in many central disorders of children.

Dr. H. M. Lyman referred to a case he had seen recently of defective cerebral development in a child where there was also nystagmus.

Dr. Gray asked how a diagnosis of intracranial tumor had been made so early in this case, and was answered that the diagnosis had not been made until all the symptoms described had made their appearance.

Dr. Hammond thought ataxia depended upon injury to the optic thalami or corpora striatai and referred to a case of Weir Mitchell's, in which there was a remarkable unilateral ataxia with a lesion of the optic thalamus and corpus striatum upon the opposite side.

Dr. Leszynsky saw a child several years ago with well-marked nystagmus which disappeared in the course of time. There was no discoverable cause.

The following gentlemen were then elected to active membership: Dr. C. Eugene Riggs, of St. Paul, Minn.; Dr. H. S. Upton, of Cleveland, O.

(To be continued.)

— In summing up the Maybrick case, Justice Stephen's remarks were rather severe upon "expert testimony," medical and other. He warned the jury about the uncertainty of medical science, or rather art, and reminded them of the old saying which described "a doctor" as "a man who passed his time in putting drugs of which he knew little into a body of which he knew less." He also had a fling at the experts in other fields who appear before parliamentary committees and the like. He said a man going on the stand, and "calling himself this, that, or the other, by no means qualified him to receive unhesitating belief." "A great deal of what he might call scum had to be taken off the testimony of skilled witnesses, for — of course, probably insensibly to themselves — they were apt to become advocates rather than witnesses."

— A species of fraud which it would be difficult for any "confidence man" to imitate in this country has lately been made the subject of judicial investigation in England, where a doctor has been making a practice of buying medical practices, holding them a little time and then selling out at a large premium on the strength of false representations as to their value. He bought one for £250, and sold it in thirteen months for £650. Another was purchased for £297 and one-half of it was sold to a partner for £500.

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THE INFLUENCE OF MICROBICIDE MEDICINES IN THE TREATMENT OF PHTHISIS PULMONALIS.

For a time subsequent to Koch's discovery of the microbic origin of tuberculosis the special attention of experimental therapeutists was directed to the various antiseptic methods which it was hoped might rid tuberculous subjects of the germs whose depredations in the pulmonary textures constituted phthisis pulmonalis. Inhalations took a prominent place; creasote, carbolic acid, sulphuretted hydrogen, eucalyptus, turpentine, hydrofluoric acid, have all had their advocates and their day. Bergeron's gaseous rectal injections of hydrogen sulphide were given with the same intent, the belief being entertained that the hydrogen sulphide introduced by the rectum would, in being eliminated by the pulmonary mucous membrane, destroy the tubercle bacilli there pullulating.

It must be confessed that the results of the germicide treatment have not been what was hoped. Experiments in the laboratory seemed to have shown that fluorhydric vapors were especially obnoxious to the tubercle bacilli. Hippolyte Martin had signalized the parasiticide effect of this acid, which in the proportion of 1 per 1000, appears to be destructive to Koch's bacillus. Jaccoud's laboratory experiments, it is true, were contradictory to those of Martin. Leiter and Garcin, subsequently Gautrelet, published papers in which the curative benefits of fluorhydric inhalations were vaunted; but other clinicians failed to confirm these results. Thus, during the course of the last year, Grancher and Chantard undertook a double series of experiments to test the value of fluorhydric inhalations in phthisis. In the first series, they came to the conclusion, "that the action of the vapors of fluorhydric acid on the evolution of experimental tuberculosis is *nil*." This conclusion was only strengthened by the results of the second series, where they studied comparatively the effects of pure tuberculosis cultures, and of cultures previously subjected to hydrofluoric acid in increasing concentration from ten per cent. up to a state of purity.

Dr. Marcellin Cazaux, in a recent article in the *Journal de Médécine*, well sums up the present state of science, when he says that phthisis is rather a question of a particular *terrain* (culture soil) than of a bacillus. Phthisis is not like syphilis, the virus of which is capable of undergoing evolution in any soil. The micro-organism of tuberculosis does not attack all persons, it selects its subjects. The individual who finds himself in condition about normal of organic equilibrium, resists with success and *burns* the bacillus, when the latter penetrates his air-passages. For this reason, tuberculosis is the least contagious of all the microbe-diseases. In short, "the question of *terrain* [soil] is primordial and fundamental; it occupies the first place in prophylaxis and treatment, and no therapeutist can do good work in combating phthisis who does not set out from this stand-point.

Such being the case, it is evident that the first thing to do in treating phthisis is to modify the culture soil so that it will be refractory to the bacillus. Here the principal reliance must be on reconstituents and tonics. Dr. Cazaux places great importance on "superabundant alimentation, and the greatest possible quantity of pure air." Residence in the open air, when the weather will permit, and especially residence in high altitudes (from 700 to 1,600 metres), is one of the principles of successful treatment. On all suitable occasions, the windows of sleeping-rooms should be left open at night. He remarks that one will tolerate in a horizontal position, and consequently in bed, temperatures which seem severe when one is sitting or standing. Dr. Cazaux cautions against sending to elevated stations patients with advanced lesions and with fever.

The medicinal treatment, while not to be neglected, is only of secondary importance; at the same time, under the use of the classical remedies, cod-liver oil, arsenic, creasote, tannin, alcohol, one will often witness an augmentation of weight and favorable modifications in the local signs. As adjuvants, inhalations, now no longer relied on as curative, may produce some ameliorations.

In the discussion which followed the reading of Cazaux's paper (*Société de Médecine Pratique*, June 6, 1889), there was a general consensus that generous alimentation, exercise in the open air, pulmonary gymnastics in elevated regions, offer the best conditions for obtaining, if not the cure, at least the amelioration of phthisical patients. Some were of opinion that inhalations, especially of hydrofluoric acid, possess considerable efficacy, exciting the appetite, diminishing expectoration, and sometimes hæmoptysis, and promoting nutrition. In cases of early phthisis, climatotherapy, and the mineral water cure are often of great utility. The sulph-sodic mineral waters (Eaux-Bonnes), the sulph-sodic-iodo-bromureted (Guyot), and the arseniated-sodic (Bourbole), were especially commended. One speaker (Guelpa) alluded to the "astounding fallacy" of the hot-air-respiration cure of phthisis. Very rigorous experiments have proved that by reason of evaporation, the air which penetrates the lungs immediately undergoes a relative cooling, and the expired air is never 40° C. at the most, the air that enters the lungs is not raised above one degree in temperature, consequently Koch's bacillus, which is arrested in its evolution when the surrounding temperature is above 42° C., is in no way influenced by inspiration of hot air.

Per contra, in Cochin Hospital, hot-air inhalations have been tried with very uncertain results, so that Dujardin-Beaumetz is forced to tell us that we must fall back upon *sur alimentation* and hygiene. "After alimentation in importance comes climate. Oxygenation is the great point, and as much open air as possible, no matter where it is, but best when the temperature is not over 60° F. in winter." "In a word we have to confess," says Beaumetz, "that we are reduced to alimentation and respiration of pure air in this disease."

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TUMORS IN ANIMALS.

Tumors in animals, though not so common as in man, are far from being rare. A very great number of observations on the subject has been published, particularly of tumors occurring in the domestic animals. The study of such new growths offers many points of interest as to their relations with tumors in the human species in etiology, pathology, evolution and treatment. A monograph on the subject has recently appeared in the *Revue de Chirurgie*, in which Dr. Plicque has availed himself of the studies of many veterinarians to construct a most instructive article.

This article of Dr. Plicque's contains many very interesting observations and remarks, which have a more or less direct bearing upon human pathology. The importance of irritation as a cause of the so-called cancer of the lip is shown in animals. This disease, so frequent in man, is also very common in the horse and the cat, but with remarkable difference in situation. In man, the lower lip is the almost invariable site. In the horse, the disease is situated almost invariably at the commissure, the point where the bit chafes; while in the cat, the upper lip is more often diseased than either the lower lip or the commissure, that being more exposed to injury than the lower lip from its greater size and from the fact that it covers and protects the lower.

Heredity is of some importance in the etiology of tumors in animals, especially in the melanosis of the horse. Its influence is so manifest, that melanotic horses should not be employed for breeding purposes. Melanosis, when hereditary in horses, appears at a younger age than in other conditions.

Melanosis, a variety of tumor so malignant in man, is far nearer the innocent type in animals, especially in the horse. A melanotic nodule on a spot subject to irritation by harness, sometimes disappears when the harness is so adjusted as to no longer irritate the new growth. The retrograde process has even been observed after the growth has begun to ulcerate. Other tumors, especially sarcoma and carcinoma, are often more intensely malignant in animals, especially the horse, than in man. Animals so protected as to live to an unnatural old age are especially subject to cancer. As a predisposing cause of malignant disease, Dr. Plicque believes age to be more important in animals than in man. Bouley, a French veterinary authority of experience, believes, on the ground of long observation, that dogs are doomed to cancer if they live to old age and are not killed by some acute pulmonary or gastro-intestinal affection. The cat, often cherished and kept alive when old and miserable, is also very subject to cancer in age. Statistics show that cancer is far more frequent in the carnivora than in vegetable eaters. This statement, as Dr. Plicque believes, is a capital example of a doctrine, founded on statistics, eminently calculated to deceive. The carnivorous domestic animals, cats and dogs, are preserved usually to the full extent of their natural lives, while the herbivorous horse and cow are usually killed before they have reached the extreme old age, at which cancer is most likely to show itself.

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MEDICAL NOTES.

— The Pennsylvania Institution for the Deaf and Dumb and the New York Cancer Hospital are both to be enlarged.

— Among the active old men is to be classed, according to a contemporary, his Holiness Leo XIII, who is eighty-two years old, and active, robust and hearty for one of even a less advanced age, and he speaks of himself in far more promising terms than he did twelve years ago, when he told his friends it would be useless to make him Pope, for he had only a few months to live, and his appearance then did not belie his words.

— As we learn from the *Medical Record*, the German physicians have adopted a code of ethics. On June the 24th the seventeenth Congress of German Physicians met at Brunswick, and passed the following resolutions: (1) Every kind of public laudation, whether it proceeds from the physician in question himself or from others, and continued advertising in public papers are to be reprobated. (2) The designation "specialist" for puffing purposes is to be reprobated. (3) The public offering of medical assistance gratis, underbidding in concluding contracts in sick societies and the like, offering advantages of any kind to a third person in order to procure practice, are inadmissible. The designation "Klinik" and "Poliklinik" (hospital) belong exclusively to institutions which serve the purposes of instruction in connection with universities. (4) The ordering and recommending of secret remedies are inadmissible. (5) Any attempt of any kind on the part of a physician to intrude upon the practice of another is dishonorable, especially in the case of one who has acted as substitute or in consultation. A practitioner must by no means undertake the treatment of the case without the express assent of the previous physician. A specialist called in for a definite part of the treatment must strictly confine himself to that. (6) No physician is at liberty to make disparaging remarks to others about another physician.

— Dr. Rickets, of Cincinnati, in the course of a paper read before the Cincinnati Obstetrical Society on the "Abuse of Pessaries," said:

"A prominent obstetrician of Cape Town told me recently that while he was on his way to see a patient he was called in and urged to attend a lady in labor, as her obstetrician could not be found. Upon digital examination he found a large-sized Hodge's pessary, and with difficulty removed it. Finding that the presentation was a normal one, and being in a hurry, the doctor called in an American physician to attend the case, and left the house. After the birth of the child, the American physician wrote the following note to the family physician, and left the house:

"'My Dear Doctor, — Dr. S. delivered your patient of a huge Hodge's pessary, and I have delivered her of a small child.

Very truly, Dr. C.'"

— London, says a correspondent of the *New York Times*, has 81 hospitals and 50 dispensaries which are supported by voluntary contributions. These hospitals contain 8,012 beds, of which 5,926 were occupied every day of last year, the number of patients being 74,316. In addition to these, 1,038,427 out-patients were treated at the dispensaries and out-service departments of the hospitals. How many recurrent cases are included in these aggregates it is not possible to discover, but the reports do not suggest that there are any, so that if the statements are absolutely correct they show that fully one in every four of the inhabitants of London receives gratuitous medical treatment when ill, a condition which at least suggests large abuse of this form of charity and want of vigilance in its administration.

During 1888 the total expenditures were (at $5 per pound sterling) $2,813,405, and the total income, not including legacies, $2,544,130; but these legacies amounted to $1,156,920 more, a total of receipts of $3,701,050. Of the regular income, $1,679,665 came from charitable contributions, $636,520 from investments, and $227,915, or 8 per cent. only, from payments by patients.

Superimposed upon the foregoing is a vast system of poor law medical relief, where the vast army of practical paupers in London are treated at an annual expense of about $300,000.

BOSTON AND NEW ENGLAND.

— At the Naval Bureau of Medicine and Surgery, bids were offered for the construction of a building for the sick at Portsmouth, N. H. Navy Yard. The lowest bid was $35,000. As the appropriation act limited the cost of the building, including furnishings, to $35,000, no award will be made.

— The Cambridge, Mass., Hospital is made residuary legatee under the will of Mary R. Popkin, of Cambridge, niece of Dr. Popkin, who was for many years a professor in Harvard College.

— Hon. E. S. Converse, of Malden, Mass., has presented to Dr. John L. Sullivan, president of the Malden Medical Society, $12,000 in cash, and a valuable lot of land off Vista Street, in Ward Three, containing four and one-half acres, for the purpose of erecting a hospital. It will be built on a hill, commanding a fine view of the surrounding country, near the Medford line, in one of the healthiest portions of the city and will probably cost when completed $40,000. The association will raise what money they can by giving lectures and entertainments the coming winter season, and it is thought that the hospital building will be commenced early next spring.

— The present week has witnessed the decease of two venerable and respected members of the medical profession, in Boston, Dr. Herman Brimmer Inches and Dr. Le Baron Russell, of whom brief mention will be found in another column. They were contemporaries. The former was a member of the Harvard Collage class of 1831, having among his classmates the physicians, C. A. Allen, George A. Bethune, Francis H. Gray, George C. Shattuck, and N. B. Shurtleff, besides John Lathrop Motley and Wendell Phillips, and other distinguished men. Dr. Russell graduating from Harvard a year later, was in the class with George Ticknor Curtis, Judge Abbott, Rev. Drs. H. W. Bellows and Charles T. Brooks, and Drs. Estes Howe, Stephen Salisbury and W. W. Wellington. Neither Dr. Inches nor Dr. Russell were compelled by pecuniary necessity to follow the details of medical practice, and both utilized their leisure and their wealth in works of general advantage, educational and philanthropic, for their fellow citizens.

NEW YORK.

DEATH OF ALEXANDER B. MOTT, M.D.

— Dr. Alexander B. Mott, the fourth son of the late Dr. Valentine Mott, died at his country-seat at Yonkers, on the 12th of August. The cause of death was pneumonia and he was ill only two days. He was born in the city of New York, March 21, 1826. A considerable portion of his boyhood and youth was spent in Europe, but he returned to this country to begin the study of medicine in his father's office. He attended lectures successively at the University Medical School, New York, Castleton, Vt., and the New York Medical College; and in 1850 he was appointed surgeon to the New York Dispensary. His first hospital appointment was at St. Vincent's Hospital, of which he was one of the founders, and he was surgeon to Charity Hospital for fourteen years. In 1857, he received the degree of M.D. from the University of Pennsylvania.

Dr. Mott was one of the founders of Bellevue Hospital Medical College, and was Professor of Surgical Anatomy from its organization in 1861 until the year 1872. From 1872, up to the time of his death, he was Professor of Clinical and Operative Surgery. He ranked high as a surgeon, and performed many capital operations. Outside of the profession he was well known in the community and he was one of the leading Masons of the city.

In April, 1861, he organized the medical corps of the militia regiments which were sent to the war from New York, and with the co-operation of a number of prominent ladies founded the United States Army General Hospital in New York, of which he was made surgeon in charge. In November, 1862, he received the commission of Surgeon of United States Volunteers with the rank of Major. In 1864, he was appointed Medical Inspector of the Department of Virginia, and was attached to the staff of General Edward C. Ord. July 27, 1865, he was mustered out of the service with the brevet rank of Colonel.

Dr. Mott's funeral occurred at Trinity Chapel, August 15th, and was largely attended by the public. Among those present were the Faculty of Bellevue Hospital Medical College, and members of the Old Guard, Loyal Legion, New York County Medical Association, various Masonic bodies, and of other organizations to which he belonged. Dr. Mott was a widower, and leaves one son, Dr. Valentine Mott.

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Miscellany.

ACTION OF QUININE ON THE PREGNANT UTERUS.

At a recent meeting of the Glasgow Obstetrical and Gynecological Society, (*Glasgow Medical Journal and Practitioner*, July, 1889), Dr. Robert Park read a note on "The Action of Quinine in Medicinal Doses on the Pregnant Uterus, with an Illustrative Case." Mrs. C., age twenty-seven years, three years married, never pregnant, had consulted him in August, 1886. On examination he found her suffering from retroversion of the uterus, with tender fundus. This was replaced without difficulty, and a Hodge pessary introduced, the relief from which was entire and immediate. She soon thereafter became pregnant. In August, 1887, when about five and a half months pregnant, she was threatened with a miscarriage — considerable discharge with rhythmic pains, which, however, subsided on the administration of opium, with small doses of liq. ergot. ammon.; and on the 31st of December following, she was delivered of a healthy and vigorous female child. On inquiring as to the cause of the hæmorrhage, Dr. Park could elicit absolutely nothing, except that three days previously, she had taken a dose of quinine to relieve a neuralgia. He considered that she must have taken from ten to fifteen grains, from the effects produced on the head. The patient herself stated that, soon after the singing in her ears stopped, she began to feel uneasy about the lower part of the abdomen. The argument put forward by Dr. Park in this case may best be stated in his own words. "As the quinine induced a violent and untoward uterine excitation in this case, by a dose which is a least within ordinary medicinal limits.

though inducing toxic effects in this one particular case, it must, in smaller doses have a distinct, though less obvious, action of the same kind." He believes that all the tonics which have influence over nonstriated muscular fibre exert their influence over the uterine muscular system, unless and except when these are the seat of inflammatory hyperplasia.

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TUBERCULOSIS AND FOOD-SUPPLIES.

In an interesting address on "Tuberculosis" recently delivered by Dr. James Niven, medical officer of health for Oldham, before the (English) Association of Public Sanitary Inspectors, the lecturer drew the attention of his audience, says the *Lancet*, to various aspects of tuberculosis, both in the human subject and in some of the lower animals, with especial reference to their bearing on the question of public health. As regards the influence of foods in the production of tuberculosis, Dr. Niven held that every one would probably allow that milk from an animal having tuberculous udders might be infective; and, since there is much difficulty in determining when there is a tuberculous focus of disease in the udder, the milk of tuberculous cows should be always condemned. In this connection he referred to the fact that the owner of a valuable herd of cattle, on finding that a large proportion of his cows were tuberculous, withdrew the milk from the market, and used it, without previously boiling it, for the fattening of his pigs. The result was that the pigs, almost without exception, were so affected with the disease as to necessitate the slaughter of the whole stock. As to the use for food of the flesh of tuberculous animals, the question was regarded as one of greater difficulty. Observation seemed to show that the meat of tuberculous animals — and this especially in the case of chronic disease — did not necessarily convey disease and this although it is difficult to conceive how tubercle bacilli, which are liable to be scattered throughout the body by means of the blood-vessels, can fail to find lodgement in the flesh. Dr. Niven's own opinion is against the use of such flesh as food, although he admits that this by no means constitutes the greatest danger as to tubercle in its relation to food-supplies.

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A FATAL CASE OF TOBACCO POISONING BY TOBACCO-SMOKE.

An unusual case of what was really acute tobacco poisoning, although occurring in a habitual smoker, is described by Dr. B. W. Richardson, from his own observation, in the *Asclepiad*.

The patient, who was between thirty and forty years of age, was a small but well-built man, of very active habits, and reported to be exceedingly diligent and able in commercial pursuits. Previous to the occurrence about to be narrated he had been very much worried with business affairs, and had, no doubt, been trying to carry out labors which, if not beyond his own natural powers, at all events taxed them severely. He returned from business in the city of London one evening extremely fatigued, took a very slight meal, smoked several cigars and cigarettes, the precise number being unknown, and retired to bed. During the night he was heard moving about as if restless, and early the next morning rose to work. He dictated some letters and other documents to his private secretary, and declining all food, recommenced to smoke a cigar. He continued this process of smoking and dictating during the greater portion of the day, taking no food and, except a small quantity of brandy and water, no drink. In a period of less than twelve hours he had smoked forty cigarettes and fourteen full-sized, full-flavored cigars. As the evening advanced he became prostrate, excited, and restless, refusing food and only sipping at drinks. Late at night he still refused to take either nourishment or medicine. He agreed, however, to give up smoking, and he went to bed and essayed for a few hours to sleep: he could not sleep and continued excited and restless.

Early on the following morning he was seen. He was at this time half-dressed and out of bed. He was in a state of continuous muscular tremor, and when he moved across the room to reach his bed his legs seemed bent or bowed as if he were permanently deformed, which, however, was not the fact. He had evidently lost the full use of the muscles of the lower extremities, and he climbed into bed with considerable difficulty. When he reclined in the bed a continual movement of the muscles of the arms and legs was kept up, and the facial muscles moved occasionally in an involuntary manner. The pupils were widely dilated, and the eyelids were in persistent movement, half voluntary. The tongue was dry and dark red in color. The surface of the body was cool (96° F.), clammy, and perspiring. The speech was faltering and the mind uncertain. The pulse was soft, full, and feeble. Both sounds of the heart were clear, but the action was relaxed and occasionally intermittent. The respiratory sounds, at this period, were clear, but the respiratory movements were irregular and sighing. The breath and cutaneous secretion were oppressively charged with the odor of tobacco.

All further resort to the cigars and cigarettes was strictly forbidden, and fluid nourishment was ordered as freely as it could be given, together with small quantities of alcohol; it was directed that the temperature of the room should be sustained at 70 F., with free ventilation; and, in order to sustain the process of elimination, full doses of the solution of acetate of ammonia were administered every four hours.' It was also carefully observed that the urinary bladder should be kept free of distension from urine, a practical point of great importance in the treatment of all forms of narcotic poisoning.

The food and medicine prescribed for the patient were much objected to by him, his mind being entirely listless and every exertion seeming to be a source of annoyance. Still, he took and retained some food, and under its influence became warmer. But as the day advanced he grew gradually more and more unconscious, the muscular paralysis increased, extending from the lower limbs to the arms; every now and then there occurred a faint general convulsion, and the breathing became noisy and embarrassed. In the evening the patient was quite unconscious; his bronchial passages were filling with condensed watery fluid; he was unusually cold; there were constant jactitating movements of the muscles, and the collapse was complete. Death took place a short time after this change. A post-mortem examination could not be obtained, but the final mode of death was evidently by asphyxia from the accumulation of fluid in the pulmonary bronchial tract.

THE FASHIONABLE CONSULTING PHYSICIAN.

The following view of the popular consulting physician is given in *Blackwood's Magazine.*

"They sit for a great part of each day at the receipt of custom, tossing the sovereigns and shillings into the drawer, where they are decorously put out of sight: pronouncing peremptorily on the destinies of their miserable fellow-creatures, scattering broadcast sentences of death or slow torture, consolation under mitigating conditions, reprieves, or plenary absolution. Custom may lighten the weighty load of their responsibilities, but surely all the same it must sometimes sit heavily on them. For, after all, they are human like the patients, and occasionally they must themselves be out of condition and far from feeling up to the mark. Case after case and often for the first time, is brought panoramically beneath their observation, and each minute is precious when there are so many to be advised. They are invited at a moment's notice to diagnose the origin and the course of complicated and obscure diseases; they are asked in the way of ultimatum all manner of embarrassing questions as to methods of treatment and probable results. They must answer the main questions to the best of their ability, and if they do not actually put forward claims to infallibility they are bound professionally to speak with the assurance attaching to their position. As a rule they are sympathetic and strive to soften down unfavorable opinions, but there are desperate cases, and not a few of them, in which it would be cruel kindness to conceal the truth. The mother who brought a daughter she fancied was merely delicate, lifts herself in speechless anguish into the dismal four-wheeler in the conviction that her child is in a hopeless decline. How the sun has been darkened to her during the last long hour or two! and, like Scott standing over the grave of John Ballantyne, she feels it will never again shine on her so brightly as before. The husband who thought there was nothing serious the matter with his young wife reads solemn warnings in the ambiguous prognostications of the oracle, and, striving manfully to master his vague apprehensions, knows well that his wedded happiness is at an end."

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 10, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	838	417	30.84	11.28	24.84	1.20	2.28
Philadelphia	1,040,245	492	145	23.20	10.80	15.00	5.40	1.40
Chicago	830,000	396	237	44.01	—	31.51	2.70	7.02
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	230	124	26.66	9.46	24.94	1.29	—
St. Louis	450,000	152	63	18.48	11.22	13.20	1.32	1.98
Boston	413,567	218	90	27.60	15.18	22.54	—	2.30
New Orleans	250,000	103	34	19.40	14.55	8.73	—	2.91
Cincinnati	225,000	118	—	22.20	7.00	12.65	2.55	7.00
Washington	225,000	—	—	—	—	—	—	—
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	40	22	22.50	10.00	17.50	2.50	—
Portland	40,000	14	6	35.70	7.14	35.70	—	—
Worcester	78,292	42	23	38.08	4.76	28.94	—	—
Lowell	71,518	36	20	47.26	8.34	41.70	—	2.78
Cambridge	65,552	40	19	37.50	10.00	25.00	—	12.50
Fall River	62,647	49	29	57.12	10.20	48.96	4.08	—
Lynn	53,334	21	—	—	42.84	—	—	—
Springfield	40,731	13	6	46.14	—	15.38	—	15.38
Lawrence	40,619	23	10	29.12	4.16	20.80	4.16	4.16
New Bedford	37,253	18	6	38.85	5.55	33.33	5.55	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	19	9	15.78	10.52	10.52	5.26	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	12	4	16.66	16.66	16.66	—	—
Haverhill	26,058	12	8	33.33	16.66	33.33	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	5	1	20.00	20.00	20.00	—	—
Newton	21,553	8	5	25.00	12.50	12.50	12.50	—
Malden	19,774	7	2	14.28	28.56	14.28	—	—
Fitchburg	17,534	7	4	57.12	42.84	57.12	—	—
Waltham	17,332	3	2	33.33	—	33.33	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	5	1	—	40.00	—	—	—
Quincy	13,728	6	3	16.66	16.66	16.66	—	—

Deaths reported 2928: under five years of age 1290; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 861, consumption 283, acute lung diseases 127, diarrhœal diseases 654, diphtheria and croup 80, typhoid fever 62, whooping-cough 26, measles 13, malarial fever 12, scarlet fever 11, cerebro-spinal meningitis 2, erysipelas 1. From whooping-cough, New York 14, Boston 5, Philadelphia, Worcester and Springfield 2 each, St. Louis 1. From measles, Chicago 6, New York 3, Philadelphia, St. Louis, Boston, Lowell, 1 each. From malarial fever, New Orleans 8, Chicago 2, Baltimore and Charleston 1 each. From scarlet fever, New York 4, Philadelphia 3, Fall River 2, Chicago and St Louis 1 each. From cerebro-spinal meningitis, Chicago and Worcester 1 each.

The meteorological record for the week ending Aug. 10, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Aug. 10, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 4	30.07	75.0	82.0	68.0	77	62	70.0	S.W.	S.W.	5	12	C.	C.		.0
Monday,.. 5	30.09	66.0	70.0	61.0	85	95	90.0	S.W.	N.W.	4	2	O.	O.	5.50	.12
Tuesday,.. 6	30.18	64.0	70.0	59.0	71	87	79.0	N.W.	S.E.	8	8	C.	C.		.0
Wednes. .. 7	30.11	68.0	77.0	60.0	71	77	74.0	N.W.	O.	6	0	C.	C.		.0
Thursday,. 8	30.18	64.0	72.0	55.0	60	71	66.0	N.	S.	8	11	C.	C.		.0
Friday,.... 9	30.04	70.0	78.0	61.0	82	86	84.0	S.W.	S.W.	12	12	O.	R.	0.05	.T
Saturday,. 10	29.88	72.0	80.0	64.0	83	69	76.0	S.W.	N.	8	8	O.	C.	2.10	.22
Mean for Week.	30.08		75.0	61.0			77.0							7.95	.34

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 10, 1889, TO AUGUST 16, 1889.

By direction of the Secretary of War, a Board of Medical Officers to consist of Lieutenant Colonel Anthony Heger, surgeon; Captain John O. Skinner and Captain James C. Morrill, assistant surgeons, will assemble at the U. S. Military Academy, West Point, N. Y., on August 25, 1889, or soon thereafter as practicable, to examine into the physical qualifications of the candidates for admission to the academy. Par. 9, S. O. 185, A. G. O., August 12, 1889.

Leave of absence for one month is hereby granted Major William H. Gardner, surgeon U. S. Army, Washington Barracks. Par. 1, S. O. 183, Headquarters Division of the Atlantic. Governor's Island, New York City, August 13, 1889.

Major Washington Matthews, surgeon in U. S. Army, promoted to surgeon U. S. Army, with rank of major, to take effect from the tenth day of July, 1889. Vice Town, promoted. War Department, Washington, D. C., August 14, 1889.

Leave of absence for one month, to take effect about October 1, 1889, with permission to apply to Division Headquarters for an extension of one month, is granted Captain Valery Havard, Assistant Surgeon, U. S. Army. Par. 3, S. O. 86, Department of Dakota, St. Paul, August 10, 1889.

By direction of the Secretary of War, Captain Joseph Y. Porter, assistant surgeon, now at Jacksonville, Florida, will, if the state of his health will permit, proceed to Jackson Barracks, Louisiana, and report to the commanding officer of that post for temporary duty, and by letter to the commanding general Division of the Atlantic. Par. 16, S. O. 186, A. G. O., August 13, 1889.

By direction of the Secretary of War, the leave of absence is granted Captain Wm. C. Gorgas, assistant surgeon, in S. O. 84, July 3, 1889, Department of the Missouri, is extended two months. Par. 2, S. O. 182, A. G. O., Washington, August 8, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 17, 1889.

B. F. Rogers, surgeon. Detached from U.S.S. "Alliance," and wait orders.

G. E. H. Harmon, surgeon. Ordered to the U. S. S. "Constellation." August 13th.

C. H. P. Lowndes, assistant surgeon. Ordered to the U. S. S. "Constellation." August 13th.

C. J. Decker, assistant surgeon. Detached from U. S. S. "Lancaster," and granted four months leave of absence.

L. B. Baldwin, past assistant surgeon. Detached from U. S. S. "Ranger," ordered home and wait orders.

H. P. Harvey, surgeon. Ordered to the U. S. S. "Ranger."

P. A. Lovering, past assistant surgeon. Ordered to the receiving ship "Wabash," at Boston.

C. A. Siegfried, surgeon. Ordered to the Naval Station at New London, Conn.

SOCIETY NOTICE.

Fifth District Branch New York State Medical Association. The Seventh Annual Meeting of the Fifth District Branch will be held in the Fowler House, Port Jervis, at 2 P. M., on Tuesday, August 27, 1889. Scientific Papers: Some Observations on the Use of Concentrated Lactic Acid, by W. B. Eager, M.D.; The Treatment of Typhoid Fever, with special reference to the Cold Water Method, by J. H. Hunt, M.D.; Presentation of a Case of Empyema, by H. B. Swartwout, M.D. Presentation of Specimens. Voluntary Communications.

OBITUARY. JAMES L. CABELL, M.D.

Dr. James L. Cabell, senior member of the Faculty of the University of Virginia, died at Overton, Va., August 13th. He was born in Nelson County, Va., in August, 1813, and was graduated when twenty years old from the University of Virginia, and subsequently filled the chair of Anatomy and Surgery in that institution. He had charge of the Military Hospitals of the Confederacy during the Civil war, and he was Chairman of the National Sanitary Conference at Washington during the yellow fever epidemic at Memphis, and was later President of the National Board of Health. He was the author of "The Testimony of Modern Science to the Unity of Mankind."

OBITUARY. LE BARON RUSSELL, M.D., M.M.S.S.

Dr. Le Baron Russell, a well-known resident of Boston, died at his summer residence in Plymouth, August 19th, after a long illness.

Dr. Russell was a native of Plymouth, and was born July 29, 1814. His father was Nathaniel Russell, who was largely engaged in iron manufacturing at that time. Entering Harvard College, he was graduated in 1832. He graduated from the Harvard Medical School in 1836, and became a member of the Massachusetts Medical Society in 1842. He studied medicine abroad, and for a time practised his profession in Otis Place, Boston, but having ample means, he devoted the greater part of his life to work of public utility, educational and otherwise. He never married. An early abolitionist, he was actively interested in making Kansas a free State. He was stanch in his support of the Union during the war, and was a warm friend of the negro race, doing much to aid the establishment of colored schools in the South. He was for many years a member of the Boston School Committee, showing particular interest in the normal school. He also gave much attention to the training-school for nurses. He served on the Board of Trustees of Harvard College for twelve years, and at the time of his death, was one of the Trustees of the State Lunatic Asylum at Taunton. Dr. Russell numbered among his friends Thomas Carlyle, whose work "Sartor Resartus," he was instrumental in introducing to an American public through an American publishing house.

OBITUARY. HERMAN B. INCHES, M.D. M.M.S.S.

Dr. Herman Brimmer Inches, a well-known resident of Boston, and the last occupant of a residence on Tremont St. — once the most attractive locality in Boston for private families — died August 19th, in the seventy-seventh year of his age. He came of a well-known Boston family, and was a member of the class of 1822, in the Boston Latin School, and was graduated from Harvard College in the distinguished class of 1831, which included his life-long neighbor, the late Dr. George Bethune, and many other well-known citizens. He received his degree of M.D., in the Harvard Medical School in 1834, and studied medicine with Dr. Warren.

Original Articles.

A FEW CASES OF SPASM.

BY S. G. WEBBER, M.D.

The great variety in the character of the convulsive action in cases of spasm is one of the interesting features of that morbid condition. The following cases seem of sufficient interest in this respect to report. I do not intend to explain their causes nor their nature, only to give the chief clinical features, which may find their counterpart in the practice of others.

The first case is one of those peculiar convulsive affections which has received the name of paramyoclonus multiplex. This case is of special interest because occurring in a woman, most of the patients having heretofore been men.

Dr. Allen Starr (*Journal of Nervous and Mental Diseases*, July, 1887), has given a very full *résumé* of all the cases he could find up to that date, and reported one of his own. Since then several other cases have been recorded. The latest paper which has come to hand at the time of writing this is one by Alessandro R. Marina, in the *Archiv. für Psychiatrie und Nervenkrankheiten*, XIX, p. 684. He gives a tabular view of twenty-two cases, of which two are his own. Two other authors have printed papers on the same subject, which had not appeared when he wrote his; namely, Theodor Ziehen (*Archiv. für Psychiatrie und Nervenkrankheiten* XIX, p. 465), and Eugen Kny (*Ibid*, p. 576).

Ziehen concludes that idiopathic myoclonie as well as the symptom of myoclonus are the expression of an increased irritability of the spinal centres. He gives several cases which are not well-marked cases of the paramyoclonus of Friedreich, but vary widely from the combination of symptoms as given by the latter. It seems to me that the first and second cases which I report may be brought into such a relation as Ziehen suggests, but the other of my cases cannot be thus related to each other. I report them only as interesting cases of spasm, without the intention of referring them to any common class.

Miss M. I., age twenty-eight, entered the Adams Nervine Asylum in July, 1887. She had measles when young, and had never been well since. She had violent headaches and nausea at the catamenial period, also backache and inguinal pain, but the head trouble is what she complained of most. She was said to have had an attack of congestion of the lungs the winter before her entrance, but judging by her condition while she was having such an attack, it is probable that the congestion was merely a sense of tightness and constriction due to purely nervous causes. At times she was said to get so confused that she found it hard to collect her thoughts to answer questions.

Dr. Clark, who sent her here, stated that she had anteflexion and a prolapsed ovary, but did not think the head trouble was dependent upon these as cause; the abdominal symptoms seemed to amount to very little.

The patient stated that she had been in bed twelve years, with tired feeling in head, headache, backache, aching in the arms and legs, and pain after eating. There was no tremor of the hands; co-ordination of the hands was good; there was only slight patellar tendon reflex; the plantar reflex was well-marked on both sides. She complained of feeling sore and tender all over; on examination there was found some tenderness to touch and pressure over the abdomen, stomach, between the scapulæ, and at the junction of the lumbar and sacral vertebra. Her feet were cold and slightly œdematous. The pulse was 84. Tongue was large and flabby, rather pale. She showed herself during the examination to be quite hysterical; at very slight causes she jumped with convulsive twitches of the arms and shoulders.

The urine was of a high color, specific gravity 1,036. It was very acid, no albumen, no sugar, sediment normal.

She had many of the convulsive twitchings above referred to, complained much of headache, and showed herself very hysterical. As little notice of her complaints was taken as possible. She was urged to get up, was sent to ride, was kept out doors as much as the weather would permit and her strength would allow. The chief means of treatment used were quieting remedies, as the valerianates, gelseminum, small doses of bromides, salt baths, dry cups to the spine.

She did not improve; the spasmodic action increased in severity, and was more frequently and easily excited. After about three months the legs were affected as well as the arms; there was pain in the toes; she was nervous and restless, and cried out in her sleep.

After about four months an examination showed that the plantar and knee-jerk reflexes were stronger on the right, though neither patellar reflex was very strong. The spasms which occurred, on entrance, at rare and irregular intervals, had become quite frequent, but still recurred at very irregular intervals. They were clonic in character, at a rate of about one hundred and fifty or more in a minute, the attacks coming sometimes near together and again being absent during many hours. The legs were more frequently affected than the arms; the thigh muscles were those most convulsed. The muscles of the face were sometimes affected, especially those about the mouth and orbicular muscles of the eyes, and to a less degree those of the forehead. At times, when standing, the spasms attacked the muscles of the back, obliging her to take several short steps backwards to avoid falling. Noises had no influence in producing the attacks; but the entrance of a stranger, or any emotional excitement, increased their frequency and severity. A gentle tap on the leg would also bring on an attack, more surely of the right leg. She complained of considerable discomfort in her head. She did not walk in a straight line, but rather to one side.

On using the galvanic current to the back, from the fifth cervical to the lumbar vertebræ, the muscles of the head and face seemed to move more than previously. When the sponges were placed on the tenth dorsal and the lumbar vertebræ, the head and face were not affected, and rarely moved. The spasms of the legs were increased during the galvanization. No spasms occurred while the patient was talking.

The spasmodic phenomena were not diminished by treatment, but rather increased in severity without regard to what was done. When the patient left, the attacks were about the same as they were several weeks previously. In many cases of paramyoclonus electricity has been of value in relieving the attacks, but in this case it had no beneficial effect.

Mrs. M. E. E., age thirty-five, entered in 1887, suffering with nervous spasms. Her mother had nervous prostration, her father was consumptive. She had been sick about two years; at first tired, coughing, restless, and unable to keep still. She was put to bed, and improved. There were dyspeptic symptoms, and at times an effort to raise gas, which seemed to depend upon a spasm of the diaphragm. There was also a peculiar jerking of the arms and head. After six months she was put to bed again, was fed, and in three months gained eight or ten pounds. She was better as to the jerking and jumping. She was up and about during the summer, and gained until winter; then she began to have the spasms again. These spasms consisted in a jump, when there was any noise, especially if it was sharp or unexpected. When such a noise was heard, she would rise from a recumbent posture to sitting, with a sudden start, with a clasping of the hands and a twitching of some of the muscles of the face, giving her a look of terror as if frightened. Sometimes the start was not sufficient to raise her body, but she would then seize her hands and clasp them tightly, or she would put out her hand and catch hold of the hand or clothing of any one sitting by the side of her bed; then, in addition to seizing hold of the object, she would pull strongly, and twitch and jerk the object she had taken hold of. Even very slight sounds would cause at least a slight contraction of the muscles, and a start as if she were about to have a stronger spasm. The noises which were most likely to give rise to these phenomena were of a sharp character, on a high note; those lower in the scale had a very much less effect. An unexpected noise would produce a more violent spasm than one which was anticipated. In talking with her, it was necessary to speak in a low tone, or choose those words for the first in a sentence which did not begin with an explosive sound. It mattered not whether the noise was in the room or out-doors, the spasm occurred the same, though less severe when distance made the sound fainter.

She had been married eleven years; nine years ago had miscarried at the fourth month. Menstruation was regular. The summer previous the pupils were much dilated; they were so when she was first seen. They reacted normally. There was no headache; patellar tendon reflex was strong; there were no symptoms indicating any special lesion of brain or cord. She was often very tired from the frequent jumping and jerking.

I was told by her physician that an examination had showed no uterine disorder.

Various means were employed to relieve the spasms, but apparently to no purpose. Different internal remedies, — ether-spray to the back, the actual cautery, dry cups, electricity, — all proved ineffectual. Sometimes the irregular action of the muscles was less than at other times; but there seemed to be no connection between any improvement and any remedy.

Miss A. L. P., age twenty-eight, entered the asylum in January, 1888. She was a very tall and unusually large woman. Notwithstanding her size, there was an appearance of lack of endurance, and less real physical and nervous strength than would correspond with her size. She was a nurse by profession, and had had a rather hard time nursing relatives.

The patient said she had had severe attacks of headache for three years, during which the whole head "felt as if frozen." These attacks occurred once in two or three months. There was also pain from the top of the head down the spine. These paroxysms of pain were described by her doctor as being very severe and quite beyond her endurance and control, and inducing hysterical manifestations. These attacks recurred frequently through a period of many weeks.

Her attending physician found a marked erosion about the os uteri, with a mucous discharge from the os. This condition was corrected, and she was in many ways better, but the pain in the head and spine was still sufficient to incapacitate her from work.

She had a slight degree of astigmatism, which was only partially corrected. The glasses enabled her to see pretty well.

On examination, it was found that there was some tenderness in the cervical, middle and lower dorsal regions of the back; the abdomen was not tender; there was a slight amount of tympanites over the stomach; and she complained of occasional distress from flatulence. The pupils reacted normally; the tongue was pale and flabby; pulse was not very strong, seventy-eight. The first sound of the heart was accompanied by a rough murmur; loudest over the aorta, and this sound was transmitted to the apex; the second sound was somewhat accentuated.

For about a month the patient did very well, having no very severe attack of distress, and the headache being relieved by the application of cold and heat alternately to the back of the neck, and by the use of aconitia internally. She seemed in a fair way of speedily recovering. At the end of a month there was a slight disturbance in the ward, on account of the examination of another patient. After this she was not so comfortable, had more trouble with her head, and showed more evidence of hysterical tendencies. A week later she had a severe attack of pain in the back of her neck, with a spasm of the muscles drawing the head backwards in tonic contraction; this was so strong that the nurse was unable to keep her on the bed, and she rolled off onto the floor. When I saw her the spasm was less violent, though still quite strong; the body and neck were bent back in a state of opisthotonos. The contraction was intermittent, continuing for a minute or two, then relaxing for a short time and recurring again. I bent her head forward during one of the spasms, bringing it into the natural position, when the spasm ceased. I then forcibly kept the head from returning to the unnatural position, and there were no more spasms.

After this attack there was severe headache for several days, and a tendency to retraction of the head; but hypodermic doses of atropia, or of atropia and morphia, were sufficient to prevent an attack until about ten days later, when she had another severe one, which was relieved in less than fifteen minutes by the application of the galvanic current to the neck. The application of galvanism to the neck every other day served to relieve the pain, and there was no attack for nearly two months, and only occasional headache. During this time she gained in general health and strength. After this period of comparative freedom she had, for ten days, more pain in the back of the neck and slight spasms, but not severe enough to attract special attention at the time, and they were easily relieved. Then there recurred at short intervals two very severe attacks of spasms. In the second of these she was under the observation of my assistant throughout the whole attack. The attack began with pain in the back of the neck, which increased rapidly in severity; then the limbs trembled, there was clonic spasm for a few seconds, affecting chiefly the arms, they being rigid in extension and pronation, with the wrists slightly flexed. This was followed by tonic contraction of the muscles of the back and neck, the arms being also rigid and extended. There was opisthotonos; this lasted for several minutes. There was no loss of consciousness. Towards the close of the spasm there was a change in the expression of the face, which it was not easy to describe, a sort of far-away look in the eyes, a vacant expression. She said that her tongue felt as if it was drawn back into the pharynx.

This whole attack had a very strong resemblance to an attack of hystero-epilepsy. The first and second stages were quite well marked. There was only a slight suggestion of the third period, that of hallucinations, in the change of expression towards the close of the attack.

The day after the attack an examination showed an unnatural tenderness over the left ovary, but there was no recurrence of spasm on pressing over that organ.

A few days after the above scene I took an opportunity, when she was quiet and free from pain, to tell her that the attacks were hysterical and to some extent under her control; that there was no organic disease; and that she must try to control herself. I suggested that, when she felt the spasm coming on, she should rise and walk about her room, and thus throw off the influence, and perhaps avoid having an attack. The statement that there was no organic disease seemed to relieve the patient's mind to such an extent that she had no more severe attacks, and only once did she find it necessary to try to walk off the tendency to an attack. She remained under observation a month or more, and has been heard from several times since, and has been fairly well. I have not heard of her having any serious disturbance.

In this very interesting and peculiar case there are several circumstances that attract attention. Was this a case of true hystero-epilepsy? Two stages or periods of that affection were clearly represented in the spasm. The first stage, that of the epileptoid attack, was of short duration; then followed a series of clonic convulsions, resembling those of epilepsy. This was also of short duration, and was succeeded by a period of great movement, in which the opisthotonos was the position assumed. It is doubtful if there was anything to correspond with the third and fourth periods of Richer. Pressure over the ovaries was not tried during the attacks, but afterwards, on the next day, it had no special effect.

In view of the whole history of the patient, I think it is more probable that the convulsions were not hystero-epileptic, but were simply hysterical, and had a strong resemblance to the more serious affection. Whether the patient had ever heard of or seen a case of hystero-epilepsy, I do not know. As she was a nurse, it is possible that she may have, and that unconsciously, or without any design, the attacks may have taken the form they did by a species of involuntary imitation.

The good effect of an explanation of the spasms to the patient could hardly be expected in every case of hysteria; but perhaps would follow in more cases than one at first would expect.

The following case is of interest as belonging to that class of neuroses which are dependent upon uterine disturbances of a more or less functional nature.

Miss M., age twenty. Menstruated first at about the age of fourteen, but the function was not fully established, the flow recurring only once or twice a year for the first four years or so, then at more frequent but irregular intervals. The flow was scanty at first, later it was more natural.

She is a well-nourished young lady, of good flesh, good color, no appearance of anæmia, seemingly strong and robust. She has a good appetite, can walk without excessive fatigue, in fact, does walk a mile or more twice a day. She has no recollection of a fright or any shock which might have acted as an exciting cause of the peculiar spasms on account of which she sought advice. She has attended and taught school continuously during most of her life, and there seemed to be nothing in her occupation to give rise to the spasms.

At about the time her catamenia first appeared, five or six years ago, she began to have starts or twitches. The first of these attacks occurred while she was asleep on a lounge. She awoke with a start, with no consciousness that she had been dreaming, no knowledge that a noise or any external cause had aroused her. It was just after this that the spasms began. There is a sensation of a contraction in the throat, as if she were clutched by some one, rather like the globus hystericus, as she described it. This sensation passes downward to the stomach and bowels, upward to the mouth. The twitching seems to be internal, yet it is sometimes visible in the lower part of the face; the muscles of the upper part of the face are not affected. The attacks occur towards night, especially when she is tired, sometimes in the morning. Sometimes she goes to bed and to sleep, then will jump and spring out of bed; at times the spasms will continue for three or four hours. She often twitches just before dropping to sleep. When the attacks are very bad, they interfere with breathing, the face becomes flushed, she is exhausted by the severity of the spasms, and then needs to go to bed earlier, and can sleep sooner. After falling to sleep she often sleeps well, but there may be twitching without waking, as shown by the action of the muscles. During her visit she sighed frequently, and the respiration was in that respect irregular. For the last two or three months there has been a sense of pressure in the head, and sometimes pain through the head.

These attacks are more frequent and severe at the time when the catamenia ought to appear, if they are absent or delayed. When the periods are more regular the attacks are less, or may be absent. When in company, or interested in her work, or in conversation, the twitching does not occur. Consequently, there was none of it during the visit. There were no objective symptoms.

A uterine examination had been made before I saw her; and I was told that the physician had found an undeveloped uterus, for which electricity had been used, and since then the catamenia had been more regular.

The next case is one of those singular hereditary neuroses, which are occasionally found to prevail in certain families, and are different from similar cases outside these families. These may be designated as "family" neuroses; and, in that they recur so frequently in the one family and are not met outside that family, they differ from the ordinary hereditary neuroses. It may well be doubted whether the patient's explanation of the origin of the complaint is the true scientific explanation. I give it as he told it. The symptoms suggest Thomsen's disease, yet differ from that in several particulars. It cannot be classed as tetany, as it does not agree with that combination in all respects.

J. R. was seen early in 1885. He was then about twenty-four years old. The family history is interesting. The patient's maternal great-grandfather, after violent exercise while hunting, felt something give way in his back. His son, the patient's grandfather was born with a similar trouble in his back. The patient's mother had the same trouble, but not until about the age of sixteen. The mother had one sister, who died at twenty-five years, free from the affection; two other sisters were affected. One of these sisters had no children. The other sister had two boys, not affected (one died at twenty-five, the other is living at thirty-five); and one girl, who was affected.

The patient has two brothers and three sisters; the two brothers, younger, are affected; one sister, older, is affected; two younger sisters, one sixteen the other nearly eighteen, are not affected. One sister died at seven, not affected. Some of these relatives are troubled more than others, but otherwise the symptoms are the same in all; none are totally disabled. His sister has had no attack for a year, but she takes less exercise.

The patient was well until he was sixteen years old, except he had had a "slow fever" annually, in winter, for two or three years, which kept him in the house for a week or ten days. His face flushes readily, the vessels dilating slowly, and remaining so for an hour or more.

He was born in October. The November or December after he was sixteen he skated until he was tired. The next morning he had trouble in the calves of both legs; felt stiff all over. This passed off readily. Subsequently, violent exercise brought this on again; and each time it passed off less readily, or as he expressed himself, "It was harder to work it off." This stiffness was not like cramp. There was no pain; it was a numb, stiff feeling in his back, noticed most after being still and then trying to move, and was worse after sitting down then after lying down. Violent excitement, or a fright, would cause the spasm, not at once, but after fifteen minutes.

These attacks are not now any more readily produced, but they are more severe than at first. If the attacks have been frequent, violent exercise will cause one during continuance of the activity. When he has been long exempt, the attack is postponed. Sometimes he is free three months continuously, then the stiffness will "hang around him" for a week at a time.

The attacks are sometimes delayed for thirty hours after the cause has operated. Usually they occur about two or three o'clock in the night, rarely at midnight. They awaken him, and usually pass off by nine o'clock in the morning. He thinks he is awakened because he cannot move his limbs. The attacks do not begin after rising, but if slight on rising, may increase in severity, so that occasionally, after leaving home, he has been obliged to return, it being impossible for him to continue with his daily duties.

In the severest attacks, of which he has had three in two years, he cannot move his limbs nor turn in bed; he cannot move a finger; he can move his lips and talk and smile; cannot open his jaws wide; cannot gape nor cough. These severe attacks last longer than formerly, sometimes forty-eight hours.

In the lighter attacks, after sitting, he has to rise slowly, stand straight, and throw his body backwards, or he falls; then it is difficult to raise his leg, and it drops, or "throws itself down." By resting a moment, he walks better. His hands are also stiff. There is some trouble in articulating.

During the attack there is no disturbance of sensation, no pain, no headache, no vertigo, except in very severe attacks. The pulse is slow; the body seems hot; there is no perspiration; and never unconsciousness. The sight may be blurred for a while. If he is at work, his face flushes.

The patient was a well-built, healthy-looking man. At the visit, his face was red. The amount of color varied during the visit. The pupils were large. When uncovered, they contracted slightly, then dilated. When examined for accommodation, with the light falling on the eyes, they did the same; but when turned from the light, the reaction for accommodation was normal. The conjunctiva was rather congested. The motion of the eyes, tongue, face and hands, was natural at the time of visit. Sensation was normal. He walked naturally. There was no inco-ordination of legs nor hands. Patellar tendon reflex was slight, and equal on the two sides. The ophthalmoscope simply showed that the small vessels were very distended.

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THE SOMERVILLE CASES OF ARSENICAL POISONING.[1]

BY T. M. DURELL, M.D.

On the fourth day of August, 1886, William J. Robinson, a strong young man of twenty-two years, was struck on the back of the neck by an empty soap box falling upon him. He went home and told his mother of this injury; she prepared his dinner, which he ate; and almost immediately he complained of pain in his head, and began to vomit. He returned to his work, but vomited several times during the afternoon, and complained of headache. The next day he was much worse; he had severe frontal headache and sighing respiration; his face was flushed, his eyes injected; pulse 90; temperature, 100°. The heart's action was weak. This condition of things was found by Dr. E. L. White on his first visit. The story of the accident was told, but this did not seem to be enough to account for the condition of the patient.

August 6th. The headache was less severe and the vomiting less frequent. There was a slight papular eruption over the surface of the body.

August 7th, 7.30 P. M. Vomiting constantly, excessive thirst, burning pain in the throat and stomach, and severe diarrhœa; the headache had disappeared; the face was red, and the eyes injected. The mind was clear.

August 8th. The above symptoms continued during the day, with more eruption.

August 9th. The face was flushed; the eyes were injected and jaundiced; the respiration was sighing; the temperature was 100° and the pulse 104. There was burning pain in the fauces and stomach, with great thirst; the liver and spleen were enlarged. Up to this time, no vomitus or urine could be obtained, as they were thrown away immediately; but during the visit the patient vomited, and the vomitus was taken by the physician, and sent to Dr. Wood for analysis. Crystals of white arsenic were found. In the afternoon there was some vomiting, and the diarrhœa continued; but the patient was rather more comfortable. Mrs. Robinson was very anxious to know what had been done with the vomitus.

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[1] Read before the Massachusetts Medico-Legal Society, February 6, 1889.

August 10th, 9 A. M. Patient better. Temperature, normal; pulse, 100, rather weak; respiration, 24, sighing, but not as much so as before; less diarrhœa and vomiting. At 8.30 P. M. the pulse was 112, weak. Severe nosebleed during the day, and great pain in the throat.

August 11th. Much worse; liver and spleen more enlarged; pulse 120, and weak. There were many patches of ulceration in the mouth, insides of the lips and throat; throat very red; body jaundiced; eyes bloodshot and jaundiced. There was a papular eczema over the surface of the body and limbs. The abdomen was swollen. The mind was wandering at times. The patient was very restless. At 5 P. M., pulse, 134; and respiration, 36; no second sound of heart; the skin was cold and clammy.[2]

The patient died early in the morning of the 12th, and I at once took charge of the body and had it removed; and at 1 P. M., (nine hours after the death), I made an autopsy, in the presence of Drs. A. F. Holt and J. L. Hildreth, as witnesses, and found the following appearances:

Rigor mortis was fairly well marked. The pupils were moderately dilated. The dependent parts of the body were of a dark bluish color; other parts of the body and limbs were covered with blueish spots, irregular in outline, varying in size from half an inch to several inches in diameter. Scattered over the body were some blackish spots, varying in size from a pin's head to that of a pea (ecchymoses). Careful inspection revealed no external marks or signs of violence. The inside of the mouth and the tongue were covered with deep ulcerations. On making the cut to open the great cavities, the muscles were seen to be of a bright red color, and those of the chest were well developed. There was about six ounces of straw-colored fluid in the abdominal cavity; the peritoneum was everywhere clear and glistening; the intestines were distended with gas.

The liver was enormously enlarged, nearly filling the abdominal cavity, and was of a bright yellow color.

There were about eight ounces of dark, bloody fluid in the left pleural cavity; a little less, of a lighter color, in the right.

Both lungs were adherent at the top and back. In other parts, the pleuræ were clear and glistening.

There was about two ounces of straw-colored fluid in the pericardial sac. The pericardium was clear and glistening on its inner surface. The heart was about the size of the right fist. A small quantity of dark fluid blood flowed from the cut vessels in removing the organ. There was a little fluid blood in the right side of the heart, and a very small well-organized clot. The auriculo-ventricular opening admitted three fingers. The left side of the heart was empty. The auriculo-ventricular opening of this side admitted two fingers. All of the valves of the organ were normal in appearance, its cavities of normal size, and its walls were of normal thickness. The muscular fibre of the organ was of a red color, and slightly soft.

The left lung was generally of a dark red color; the vessels were full of blood; the bronchi were filled with frothy mucus; a quantity of dark bloody fluid could be squeezed from the cut surface. The right lung was generally in the same condition as the left, with the exception that it was of a lighter color in the upper portions. The trachea contained a quantity of frothy mucus. The œosphagus was normal.

The spleen was enlarged to twice its normal size, and was of a bluish color; on section nothing abnormal was found. The left kidney was a little enlarged, of a uniform bluish color; its capsule was adherent, tearing the tissues on its removal. Section showed the blood-vessels to be moderately full of fluid blood; the cortical portion was of a reddish-gray color, normal in thickness; the tubular portion was of a bluish color, and the vessels in it could be seen as red lines. The right kidney was slightly larger than the left, and like it, with the exception that the cortical portion was of a grayish-yellow color, and the vessels could be seen in it as well as in the tubular portion. The ureters and bladder were normal; the latter contained about four ounces of urine.

The large intestines were distended with gas, and contained a yellowish-green material, as well as some small semi-solid portions of fæcal matter. There were a few spots, especially in the lower part, that were red, and the vessels were injected about these. The spots were about the size a five-cent piece.

The small intestines contained a quantity of yellow, gelatinous material; the mucous membrane was red in spots. The mucous membrane of the duodenum was of a red color and the rugæ were almost black.

The stomach was dilated to the capacity of a quart, and contained about half a pint of dirty, greenish liquid. Its external coat was of a grayish color except in the dependent parts, where it was red. The mucous membrane was red in patches, and scattered over a greater part of it were a large number of small ecchymoses. The vessels were injected.

The liver was of a striking yellow color, reddened in spots and greatly enlarged. The cut surface was of the same yellow color, and the acini could not be made out. The vessels were partly filled with fluid blood. The gall-bladder was filled with a reddish watery pile; its duct was free. The pancreas was normal in appearance.

No blood flowed from the cut vessels of the scalp. The skull was normal in thickness and appearance. The dura mater was of normal thickness, translucent and glistening on its inner surface. The pia was everywhere clear and glistening, its vessels were moderately full of fluid blood, particularly on the left side; those of the base were empty. Careful section of the brain and great ganglia showed them to be everywhere normal in appearance.

The organs were carefully sealed and delivered to Prof. E. S. Wood and Dr. Charles Harrington for analysis. Both of the chemists found large amounts of arsenic in the organs delivered.

This case was one of a series of cases of poisoning by the use of arsenic, — a series unequalled, I believe, in the history of crime. There are many cases on record where a woman has poisoned several persons, either from hatred or for some other motive; but for a mother to poison her own children is, I believe, without parallel.

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[2] For the above history, I am indebted to the kindness of Dr. E. L. White, as I did not see the patient till August 11th.

Mrs. Robinson's career in arsenical poisoning began in Chelsea, thirteen years ago. At that time, Joseph Field, who married Mr. Robinson's sister, became attached to Mrs. Robinson and left his family and went to board with her. He had a large amount of money and government bonds, which he kept in a box in his room. Shortly after he went to board with Mrs. Robinson he was taken sick with symptoms of poisoning, and died. After his death no trace of the money or bonds was ever found; but Mrs. Robinson went to Dr. Bean, who attended Field, and asked him how she could get money for a government bond which she had. At that time the doctor thought that Mr. Robinson had poisoned Field from jealousy.

Later, the Robinson family went to live in a house owned and occupied by Oliver Sleeper and his wife. While there Mrs. Sleeper died, and Oliver took his meals with the Robinsons. Sleeper received something over $10,000 in money, and carried it home with him; and directly after this he was taken sick and died. His sickness was due to slow poisoning; and arsenic was found in his remains when exhumed. When the administrator took charge of his effects the money was gone. Mrs. Robinson nursed him during his sickness. Sleeper died August 10, 1881.

July 23, 1882, Moses Robinson (Mrs. Robinson's husband) died, after an illness of six days. The prominent symptoms were vomiting and diarrhœa. Shortly before this, Robinson made application for insurance to the New England Relief Association for $2,000 which was made payable to his wife. Just before his sickness Mrs. Robinson went and asked if his insurance papers were all right. She brought suit to recover the insurance but failed to recover for some technicality. Arsenic was found in his body.

The Freeman family consisted of four persons, Mr. and Mrs. Freeman and two children. Mrs. Freeman was a sister of Mrs. Robinson. Prince Arthur Freeman had his life insured in favor of his wife, and this wife, Annie E. Freeman, was taken sick with symptoms of poisoning, and died February 26, 1885. Mrs. Robinson nursed her during her sickness. Arsenic was found in her body.

The baby, Elizabeth Bell, died April 16, 1885, Mrs. Robinson being her nurse. No arsenic was found in this case, although the baby was nursing at the time of the mother's sickness.

After the death of Mrs. Freeman, Mrs. Robinson persuaded Freeman to come and live with her; and the insurance policy was made payable to her, the idea being that, should anything happen to Freeman, Mrs. Robinson might have money to bring up the boy. Freeman died June 27, 1885, after an illness of six days, the symptoms were those of poisoning, and arsenic was found in his body.

Lizzie A. Robinson, a daughter of Sarah Jane, died at Somerville on February 22, 1886, after an illness of four weeks and five days. This illness commenced with an attack of acute rheumatism; but, during the course of the disease, she developed symptoms of acute Bright's disease. She also had severe vomiting and diarrhœa, and finally died, according to the death certificate, of acute Bright's disease. The physician who attended her made every effort to secure an autopsy, but her mother would not allow it. She was insured for $2,000. Arsenic was found in her body.

Thomas A. Freeman (son of Prince A.), living at Mrs. Robinson's, died July 23, 1886, after a very obscure illness. Arsenic was found in his remains. The motive in this case was to get rid of the boy, so that she might use the whole insurance money of the father.

Next came the case of William J. Robinson, who died August 12, 1886. He was insured for $2,000 in favor of his mother.

There was the same method employed in all these cases; the plan being to call in some physician for a comparatively slight sickness, and then administer the arsenic. In all of the cases physicians of good standing were called, and before they realized what had happened, the patient was dead. The result was, that, in a few years, nine persons died under the care of Mrs. Robinson; and in all of the cases except Field and the baby, arsenic was found in large quantities after death. In all of these cases the physicians who attended the various patients have made statements of the symptoms of their patients, and all of these statements correspond with the history of arsenical poisoning. One of the most remarkable things about these cases is the skill which was used by Mrs. Robinson in administering the poison; and this very skill would lead one to think that some one familiar with the properties and uses of arsenic must have been associated with her.

Mrs. Robinson was tried for the murder of her son, William J. Robinson, but the jury failed to agree on a verdict. Subsequently she was tried and convicted for the murder of her sister and family.

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A CASE OF FRACTURE OF THE THIGH, WITH NON-UNION.

BY THOMAS H. MANLEY, M.D.,
Surgeon to Harlem Hospital, New York.

In the early part of January, a lame man came into the Harlem Hospital, seeking relief to the distraint of an injured limb, and giving the following history:

He said that nearly two years (twenty-two months) before, while pursuing his usual occupation of lumberman, he got caught between two logs, and fractured his left thigh. He was brought to one of our largest hospitals for treatment. On entering, he was examined, and told that the bone was broken near the joint. A Buck's extension, with weights, was applied, and he was kept quiet for two weeks, when more extension was made, and plaster of Paris put on. In this the limb remained eight weeks. After removal, it was found that there was no union. Then he was etherized, and the ends of the bones rubbed together, and again the plaster was adopted as a splint.

At the end of three months this was cut down, but still no union. At this time a council of surgeons was held; and it was decided that there was probably something between the ends of the bone, which should be removed, and that while removing any impediment to union, they would wire. Again he was anæsthetized, an operation performed, and another layer of the powdered lime applied.

He said, that after this he suffered great pain for a long time, and had a profuse and long-continued discharge from where the wound was made. In the mean time, his weight had been reduced from one hundred and seventy to one hundred and ten pounds. After the wiring of the femoral shaft, he was kept in the hospital thirteen months, most of the time in bed. He was then discharged, and was informed that the bone was united, and that, with use and friction of the limb, it would in time become supple and strong. He remained at home six months, and found no improvement whatever. On the contrary, pain was constant at the seat of the incision; and now, too, he discovered that the scar commenced to ulcerate.

Condition on entering Harlem Hospital. — He came in on crutches, and though more than two years had elapsed since the accident, he found himself, even now, unable to put any weight on the foot of the injured side. His general health seemed fair. On examination of the affected limb, it was seen that the knee-joint was motionless unless considerable force was used, when he would complain of its giving him some pain, more particularly in the region of the injury.

It was evident that the knee was not anchylosed (not as we understand it) from arthritic lesion, but was immovable through being firmly held by the unyielding hamstrings, vasti, and femoral rectus. The leg below was wasted and feeble; and, above, those once heavy, powerful muscles of the thigh, when compared with their fellows, were seen to be greatly shrunken and atrophied, from constant, continued pressure, and non-use. On the front aspect of the thigh, just anterior to the lesser trochanter, there was a long linear cicatrix, but broken in the centre, through which a thin, serous discharge exuded. Though there was some motion in the hip-joint, it was, nevertheless, very limited, and was attended with some pain when made with any degree of freedom,

The question was, What could we do towards improving our man's condition, and relieving him of his infirmity? It seemed to me that we could do very little. He was at the meridian of life, — forty-five years old, — and was altogether a different subject to operate on than a youth with active recuperative processes. He was especially anxious to get the use of his knee; but this we could not promise him, as it was evident that in the reparative processes about the seat of the wound lymph was thrown out in every direction, between and among all those large muscle-sheaths of the upper part of the thigh, extending from the bone to the skin, and, becoming organized, had formed a tough, leathery bond, sealing and soldering together everything promiscuously, — bone, tendon, vessels and muscles, — and preventing forever that free, sliding, easy motion of one muscle-sheath over the other, and hence the normal potency of the joint below.

We could do one thing, however; we could follow the fistulous opening, and remove, perhaps, the cause of it. But why, with good union, he could walk only with crutches, seemed a mystery. We examined the thigh, we thought, very thoroughly on his entrance, and felt assured of the solid continuity of the femur. The measure of relief we offered was very inconsiderable, yet he quickly consented to our efforts in the way of doing everything which might, in any degree, relieve him.

I commenced the operation by making an incision, in the same direction as the original, on the anterior aspect of the thigh, but about half an inch to its outer side, in other words, to the outer border of the sartorius and inner of the tensor-vaginal femoris muscles, directly over and through the rectus femoris, till the periosteum was reached. We found the tissues indurated, and inseparably matted together. The traces of former suppuration and extensive connective-tissue formation were well marked.

In following along the tortuous course of the fistula, we came to a small, angular piece of necrosed bone, which had, no doubt, been reduced in size from the solvent action of the discharge which its presence was the cause of. After removing this small, foreign substance, we cautiously groped further, avoiding the large nerve trunks and vessels which lie convenient to the femur in this situation.

Shortly we reached the bone, when, to our amazement, we found no osseous union whatever; but, owing to the false joint being so firmly embraced by the large muscles which run in the same direction as the shaft, and the large amount of new tissue formation, we were, as well as the surgeons in the hospital which he originally entered, deluded into believing there was true union. I would have readily sworn, that, to the best of my knowledge and belief, there was osseous connection of the shaft.

The wire used in holding the broken ends could be seen, blackened, but deeply lodged, on the under surface of the limb; and considerable dissection was necessary to reach it.

I did not wish to take the chance of deep suppuration, which might entail the loss of his limb or even life, and was contented with approximating the edges of the incision, and draining from below, with horsehair. The wound healed up in a few weeks, when the pain ceased. Not being able to safely do anything further for him, he was dismissed.

This case, it would seem, is well worthy of recording, especially just now, when, owing to the presumed impunity with which tissues may be indiscriminately explored or opened, with antiseptics, considerable wiring of bone is being done. The case illustrates what has *always* been my experience, namely, that, for some reason not yet well understood, wiring shafts of bones does badly, no matter what care is taken. On the other hand, it is not unattended with danger; for, do what we will, pus will almost invariably form and infiltrate. The only exception is in children; where there is much displacement and shattering, the wire does not seem to cause the irritation it does in adults. It is the ideal treatment, *if practicable*, as the bones can be at once accurately apposed and held together, but the ends of them will either necrose, or the wire cause so much harm and inconvenience as to require removal.

I think, then, that it may be set down, almost as an axiom, that, in the adult, wiring of a bone is never justifiable, except when there is a compound fracture with shattering, or great displacement. Under any other circumstances, though its application seems simple, it is a dangerous and useless experiment.

— Dr. R. Jamin reports (*Abeille Médicale*, May 13, 1889) favorable results from the electrical treatment (eleven applications) in a case of nocturnal incontinence of urine in a young girl of fifteen, who had wet her bed nightly for years, and in whom he and others had obtained no amelioration by prolonged medicinal treatment. He used direct faradization with an olive-tipped bougie applied to the urethra, after the advice of Guyon. — *New York Medical Journal.*

Clinical Department.

A CASE OF LIGATURE OF THE INTERNAL JUGULAR VEIN: RECOVERY.[1]

BY E. H. BRADFORD, M.D.

The following case of unusual surgical emergency, in operating for section of the sterno-cleido mastoid, deserves record as a warning. The patient was a girl of eight years, with wry-neck, with the usual contraction of the sterno-mastoid muscle. It was decided to divide that muscle by an open incision. The incision was made in the usual way, half an inch above the clavicle, the skin and platysma divided, and both sternal and clavicular attachments of the muscle incised. The head could now be straightened, but before the wound was sewed up, the finger was inserted into it and a small tense fibre belonging to the deeper portion of the muscle, which had escaped incision, was felt. It was thought advisable to divide this, to make a permanent correction more certain.

The fibre was therefore raised between two pairs of forceps, and an incision carefully made between them. A slight amount of venous blood came from the wound, but it was readily controlled by pressure-forceps. An attempt was made to ligate this point, but the ligature came away on irrigating the wound. This was followed by a recurrence of bleeding, which was not profuse, but persistent. Several attempts made at ligature were unsuccessful. No vein could be seen, and it was thought that the bleeding came from an anomalous vein lying in the muscular tissue close to the deep fascia. An attempt was made, by passing a needle, to secure the small mass of muscular tissue which appeared to overlie the bleeding-point. The hæmorrhage was easily controlled by pressure-forceps, but became quite profuse when the forceps were removed. It was then determined to carefully expose the bleeding-point by incision, and it was found necessary to incise the deep cervical fascia. When this was done, the blood was seen to come from a small incision in the internal jugular vein about an inch above the clavicle. The vein was distended about the size of a little finger. A bent probe was passed under the whole vein, with a silk ligature threaded through the eye end. This was carefully pulled through, and the vein was tied above and below the bleeding-point. The hæmorrhage then ceased, and the wound was sewed up. Aseptic precautions had been observed, and the wound healed, by first intention under the usual aseptic dressing. No disturbance followed the ligature of this vein. The patient recovered perfectly, with thorough correction of the deformity.

The case may serve as illustrating two points: (1) That, incising the deeper portions of the attachment of the sterno-cleido mastoid, it should be borne in mind how near they lie to the internal jugular vein, being separated from it (if the neck is straightened) only by the layer of deep fascia. (2) That, in dividing any remaining contracted fibres, the deep tissues should not be raised by forceps, as a portion of the vein may readily be pinched and raised also.

It would also appear from this, that thorough division by a tenotome of all the contracted fibres must be a hazardous procedure; for, if wounding of the artery is a possible accident in an open incision, where reasonable care is used and the parts are more or less under inspection, the danger would be greater if a tenotome were freely and thoroughly used. The imperfect division of the muscular attachments by tenotomy is probably not uncommon, and may explain the failure of attempted correction after tenotomy, and the necessity of prolonged mechanical correction.

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[1] Reported at the meeting of the Surgical Section of the Suffolk District Medical Society, May 1, 1889.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

G. H. MONKS, M.D., SECRETARY.

Meeting, Wednesday evening, May 1st, Dr. E. H. Bradford in the chair.

An enormous

MULTILOCULAR CYSTOMA OF THE OVARY,

which had been removed by Dr. John Homans was shown, and the history of the case related by Dr. John Homans, 2nd.

The patient, a woman of seventy-four, had suffered from a tumor for about ten or twelve years, and had been tapped half a dozen times. The fluid in the cyst weighed seventy pounds, and the cyst-wall seven pounds. Photographs of the patient before operation were also shown.

Dr. John C. Munro read a communication on

THE TREATMENT OF MALIGNANT GROWTHS BY ESCHAROTICS.[1]

Dr. J. C. White said that his experience with the use of caustics in malignant disease of the skin had been principally confined to nitric acid, with which, however, he was thoroughly satisfied in all cases in which such methods or treatment were appropriate. He applies the acid on a pointed stick of wood, with which he bores well into the diseased tissues. He considers such an escharotic treatment of value in those superficial forms of epithelioma only, which frequently appear on the face and hands. A growth involving the deeper structures he refers to the surgeon for excision.

Dr. G. W. Gay said that his first experience with escharotics for removing malignant growths was with arsenical paste, which had been recommended by Dr. Marsden. Dr. Ingalls gave the method a trial, but abandoned it on account of the pain, which was sometimes so excessive as to require full doses of opium. The slough which was formed was apt to be quite large.

Dr. Gay had used liquefied carbolic acid, with some oily substance, with considerable benefit. The pain was not very severe; and, when the slough separated, a clean, deep ulcer was left. He had found this application very satisfactory in the treatment of flat growths, as upon the face. Now, however, he uses caustic potash. The pain is not great, and the action of the caustic can be limited by acids, and the growth while small can be kept well under control. Recurrence is pretty certain, but the treatment can be repeated. Care should be used in selecting proper cases for this treatment. He would not use it in growths larger than the thumb nail. On the whole, perhaps, the very best thing to do is to remove the growth with the knife, and apply the caustic afterwards.

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[1] Publication deferred.

Dr. J. C. Warren had used nitrate of silver in a large number of cases after curetting. The stick should be bored into the growth in various places. He had, in office practice, occasionally used the Pacquelin cautery, after having injected cocaine. He always endeavored to inject the cocaine as near as possible to the source of the nerve supply, rather than into the growth itself. He had found, however, that all the caustic he had used in the more malignant epithelial types of face and hands, had only a palliative effect, and he considered the knife better.

Dr. M. H. Richardson did not believe in the use of caustics, except in the most superficial forms of malignant disease. He considered the process painful, clumsy and not thorough. He thought that caustics, which are only temporizing means anyway, are often used at just the time when the knife might do some permanent good.

Dr. E. O. Otis spoke of the deformity which might result from the use of caustic in careless hands, and referred to a case of cancer of the lower lip, which had been cauterized extensively with apparently a good result, but with a very disfiguring scar.

Dr. Richardson reported a

CASE OF REMOVAL OF FOREIGN BODIES FROM THE KNEE-JOINT.[2]

Dr. Warren called to mind how much in old days any operation in which the knee-joint was opened was dreaded by the surgeon; but that, now, with strict antiseptic precautions, the danger of bad result is not great. He spoke of about half a dozen cases which had recently been operated upon at the Massachusetts General Hospital, with the greatest success.

To what an extent a patient with a movable body in the joint was disabled he had always been impressed, and he thought that any operation which offered a reasonable degree of success would be justifiable. The surgeon should not forget, however, that occasionally adhesive inflammations in the joint glued down the foreign body to the walls of the joint, thus effecting a cure. Dr. Warren related a case in which this occurred.

Dr. Richardson spoke of the importance, in all such operations, of keeping the hands and particularly the nails, strictly clean surgically.

Dr. Scudder spoke of the antiseptic methods employed in Roosevelt Hospital, in New York, which he had recently visited.

Dr. Bradford described, in detail, the methods of Esmarch, in Kiel.

Dr. Bradford then reported a case of

REMOVAL OF LOOSE CARTILAGES FROM THE KNEE-JOINT,

and said: The following case illustrates the origin of loose cartilage in the knee-joint. The patient was a man of fifty years, who had had symptoms of loose cartilage in the knee-joint for several years. One of these bodies could be readily felt to the outside of the patella, and an operation for its removal was undertaken. It was easily found and removed. On exploring the knee-joint with the finger, a second body was found inserted on the synovial membrane, beneath the quadriceps tendon. This was gradually separated by careful pressure with the finger, and removed. A third bit of cartilage, of the size of a ten-cent-piece, was found firmly imbedded in the synovial wall, and it could not be removed without undue violence. It was, therefore, allowed to remain. The wound healed perfectly, aseptic precautions having been taken and the joint irrigated. In a few weeks the patient recovered entirely, with perfect motion at the knee-joint, and with disappearance of his previous symptoms.

Dr. Bradford also reported a

CASE OF LIGATURE OF THE INTERNAL JUGULAR VEIN.[3]

Dr. Warren said that he fully realized the danger of wounding the vein. He recently operated on a case of wry-neck, and as he was about to divide the last fibres of the sterno-mastoid, the child coughed, and the incision laid bare the vein at once.

Dr. Richardson spoke highly of the open incision as recommended by Dr. Bradford in a paper read some months ago, and stated that since that time he had used that method only. There was less danger of wounding the vein than in subcutaneous tenotomy. He had frequently noticed in the dissecting room that, if traction is applied to a vein it loses its characteristic appearance, and appears like a band of fibrous tissue. He had abandoned the use of scissors near veins, and merely pressed the knife down upon the tense tissues, (without drawing the knife), in which case the fibrous tissues only are divided, and the vein slips out of the way.

Dr. Bradford stated that he believed many cases which were operated on by the subcutaneous method were only half cured, the surgeon hesitating to divide the last few fibres of the sterno-mastoid.

Dr. F. H. Hooper showed a

RHINOLITH

which he had recently removed from the nose of a woman of fifty. For twelve years the patient had suffered from pain, and discharge from the left nostril, as well as obstruction. The septum was deflected to the right. The stone weighed five grammes and ten centigrammes. No nucleus could be found.

AMERICAN NEUROLOGICAL ASSOCIATION.[1]

SECOND DAY — MORNING SESSION.

The President, Dr. E. C. Seguin, in the chair.

Dr. George W. Jacoby, of New York, opened with a paper entitled,

A CONTRIBUTION TO THE STUDY OF ANÆSTHETIC LEPROSY, WITH SPECIAL REFERENCE TO PARTIAL SENSORY DISORDERS.

The points to which particular attention should be paid in all cases were, the electrical excitability of the muscles, the condition of the reflexes, the presence or absence of fibrillary twitchings, and the condition of sensation. Upon these data depended the diagnosis between anæsthetic leprosy and syringomyelia, as well as that of the central or peripheral localization of the leprous process. The conclusions arrived at by the author from the analysis of his own and other cases were that the differential diagnosis between the two diseases could not always be made; that partial sensory disorders are not characteristic of syringomyelia, but may occur in anæsthetic leprosy as well as in purely peripheral affections; and finally, that a differential diagnostic point between central and peripheral loss of temperature sense may lie in its complete loss in the one case and its partial loss in the other.

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[2] Publication deferred.

[1] Concluded from page 190 of the Journal

[3] See page 204 of the Journal.

Dr. Starr said that the same question as to the differential diagnosis between syringomyelia and anæsthetic leprosy had only recently occurred to him. Three weeks ago he had seen a case with Dr. Prince A. Morrow, of New York, in which there had been a gradual onset of an atrophic and anæsthetic affection of the right arm. He came from the Sandwich Islands, and had been exposed to leprosy. There was anæsthesia to temperature and pain, but not wholly to touch along the hand and part of arm. There were three small reddish brown spots on the arm which Dr. Morrow considered leprous in character. The idea of syringomyelia at once occurred to him, but the history of exposure in a leprous country sufficed to make anæsthetic leprosy at least the more probable nature of the disease; but without such history it would have been almost impossible to make the diagnosis. As to the matter of partial loss of sensation, in the cases of multiple neuritis and *beriberi* he had seen, the sensory loss was complete, with the exception however of muscular sense.

The President remarked that he had now under observation a case of leprosy, but had as yet made no careful examination of the temperature sense. His case illustrated the case of diagnosis at an early period, when confusion with syringomyelia could not occur. The patient had a wine-colored eruption on the entire left leg and part of the thigh, the foot being free, and there were three or four similar spots on other parts of the body. There was distinct analgesia and some anæsthesia in these areas, but there was no paralysis or atrophy. The patient had come from the Sandwich Islands. The well-defined limitation of anæsthetic areas showed that it could not be neuritis. Of late the anterior leg muscles had become paretic, but there was no reaction of degeneration. The left hand was beginning also to manifest similar symptoms. There were no ulcers.

Dr. C. K. Mills had seen two cases of leprosy. He thought the author's point with regard to partial sensory disorder very interesting, but he did not see why there should not be partial disturbance also in neuritis, and in fact in traumatic neuritis it was quite frequent. The nature of the sensory disturbance depended upon the extent of the injury to the nerve. In ordinary multiple neuritis it might be true, as Dr. Starr insisted, that there was complete loss of sensation, through destruction of all the sensory fibres. He did not see, however, why the sensation to cold should not be injured as much as any. It should be borne in mind that in all infectious diseases attacking the nervous system, there was a tendency to seize upon the central as well as the peripheral portions at the same time.

Dr. Gray agreed with the last speaker as to partial sensory disorders met with at times in peripheral neuritis. He had observed it also in multiple neuritis, where for instance there was impairment of touch and temperature sense, yet the pain was excruciating. He did not see that it was easy to diagnosticate syringomyelia, and Wichmann and Starr had given no rules for diagnosis in their pamphlets. He believed that no one had made a diagnosis of syringomyelia in life.

Dr. Starr stated that Schulze had made the diagnosis in three cases, which had been substantiated by autopsy. The points for diagnosis were the general conclusions drawn from a study of collected cases. Anna Baumler had brought together 116 cases, to which thirty or more had since been added.

Dr. Gray thought that these diagnostic points would apply to many other spinal lesions.

Dr. Birdsall had had similar ideas to those of Dr. Gray as regarded the diagnostic indications in syringomyelia until he had read Roth's collection of cases — in a certain number of such cases there were clinical pictures differing altogether from other spinal lesions and from peripheral neuritis. Disturbance of the temperature sense was the particular characteristic. Still the testing of this sense had been constantly neglected in studying other spinal cases, and it was possible that it might often be disturbed in other spinal disorders. It was hard to see how any other lesion could produce precisely the same symptoms as those of syringomyelia. It was a question whether tracts for temperature and pain could be localized in the cord. Peripheral nerve lesions might cause injury to some sense fibres and not to others, although generally all are injured, particularly where the inflammation is truncal in character. There might be partial sensory disturbance in dermal forms.

Dr. Gray said it was easy to localize disease in the anterior cornua, in the lateral and posterial columns of the cord, but the diagnosis of central lesions was very difficult. The fact that out of 150 cases of syringomyelia only three had been diagnosticated during life proved the truth of his assertion. The diagnostic suggestions given were therefore empirical. The presence or absence of temperature sense had not been sufficiently tested as yet. How would one distinguish a chronic central myelitis?

Dr. Birdsall stated that central myelitis began acutely, and thus differed from the slow advance of syringomyelia.

Dr. Mills thought the question of partial sensory disorder most interesting. But he thought that there would be more apt to be partial disturbance in a truncal neuritis than in a dermal.

Dr. Peterson asked the President if the tendon reflexes were exaggerated in his case of leprosy, and was answered in the affirmative. He had asked this because he had recently read an interesting study of the reflexes in anæsthetic leprosy made by Dr. Suzuki of Tokio, and published in the *Sei-a-Kwai Medical Journal*, in which there was an analysis of seventeen cases; one had normal reflexes, while all the others had increased tendon jerks, and in some of the cases there was even ankle clonus. The conclusions arrived at by the author were similar to those of Dr. Jacoby.

The President called attention to the fact that so many cases of leprosy were now being continually imported into the United States, it seemed as if the country were threatened with its domiciliation. It was a question whether it was not the duty of physicians having such cases to report them to the authorities.

Dr. Sinclair mentioned the recent presence of two cases in Philadelphia. The physician in charge had been fined by the Board of Health for not reporting them.

Dr. Prince wondered at the manner in which leprous patients were allowed to go about, and thought also that the attention of the authorities ought to be called to the disease, and reports to the Boards of Health ought to be required.

Dr. Gray knew that in the East where the disease is prevalent, isolation is practised. He wished to know what the actual danger of contagion was.

Dr. Brill said that the attention of the New York Board of Health had already been called to the matter.

Dr. Jacoby, in closing the discussion said that Schulze was altogether too positive in his assertions. This author went so far as to contend that cases of leprosy where cavities had been found in the cord were not leprosy at all, but syringomyelia. As for himself he thought a central lesion probably often exists in this disease, although it is well known that the essential pathology lies in a truncal neuritis. A simple dermal neuritis could not be assumed in leprosy. In his case for instance the indurated and swollen ulnar nerve could be distinctly felt. He did not agree with Dr. Gray that the diagnosis of syringomyelia could not be made. The only danger lay in mistaking it for leprosy. He had only last evening come across a work of Suzuki, mentioned by Dr. Peterson, but had noticed the identity of the conclusions of that author with his own, although they were reached from different points of view.

Dr. F. X. Dercum, of Philadelphia, then presented two contributions entitled respectively

A DESCRIPTION OF TWO CHINESE BRAINS,
and
A NOTE ON THE PLI DE PASSAGE INFERIEURE INTERNE IN THE HUMAN BRAIN.

He exhibited the brains described. Dr. Mills had made morphological analysis of one in 1886, and descriptions of three Chinese brains had been added to literature by Moritz Benedikt. The six brains thus far analyzed exhibited unusual complexity due to excessive sinuosity of the gyri, and a tendency to excessive transverse fissuration. The frontal lobes were especially large and complex. There was unusual confluence of fissures indicative of a low degree of development such as is often seen in the negro's and sometimes in the white man's brain. There was unusual length of the parallel and Sylvian fissures, and eversion of the orbital and temporal lobes.

Dr. Mills said that it was very important to keep adding to our morphological descriptions of such brains, until accurate deductions could be drawn from a very large number.

Dr. Spitzka stated that the dictum that a tendency to confluence of fissures indicated a low type of development was not accepted by most anthropologists. The more brachycephalic the skull the greater was the development of transverse secondary folds. The elephant, which stands among the highest of mammals, had a broad skull and a tendency to confluence of fissures. The Chinese were not low in development. The internal pli de passage in the negro and idiot was significant only when the general cortical development was poor. The real cause of the location of the chief sulci lay in the inherent architecture of the brain, and was due to the arrangement of groups of cells and fibres, but the secondary and tertiary sulci might be influenced by other factors such as the course of vessels. While we might never be able to localize the higher functions of the mind, there was something in the physiognomy of the Chinese brain which struck him as differing altogether from that of the Caucasian. But it was not the same difference as was noticeable between the negro and Caucasian brains. The peculiar moral attitude of the Chinese pointed to some relation between the structure of their brains and the character of their minds. Still he had observed a great difference between these two Chinese brains, and there was no feature in them which might not be reproduced in the Caucasian brain.

Dr. Dercum had not wished to imply that transverse fissuration was indicative of a low type, but thought the unusual confluence showed a lack of cortical development. He did not consider them brains of a low type, but many features, such as were found in the brains of the negro and ape, were found here also. The excessive sinuosity, however, indicated a higher cortical development. For instance, in one brain there were five well-developed frontal gyri.

Dr. Spitzka had the same idea as Dr. Dercum. As compared with the Caucasian brain, the Chinese was in some respects inferior, and in others exhibited a superabundance of gyri. He spoke of the resemblance between negro and ape brains. The differences between the brains of the ourang outang and chimpanzee were greater than those between the brains of the chimpanzee and a human being. There was no uniform appearance of the ape's brains. Vogt and another had classified the human brain into three types, the negro, Mongolian and Caucasian, corresponding somewhat to the three lower types of the gorilla, chimpanzee and ourang outang.

Dr. M. Allen Starr, of New York read a paper entitled

THE PATHOLOGY OF SENSORY APHASIA, WITH AN ANALYSIS OF FIFTY CASES IN WHICH BROCA'S CENTRE WAS NOT DISEASED.

In all of these cases collected by the author some form of sensory aphasia was present, and in all the lesion lay in the posterior lower third of the brain. In seven of the cases there was pure word deafness, and in these the lesion was limited to the posterior portion of the first and second temporal convolutions. In eleven cases there was pure word-blindness, and in these the lesions were found distributed either in the angular gyrus, the occipital lobe, the temporal convolutions or the inferior parietal region.

In seven cases word-deafness and word-blindness were co-existent, although the use of language was not lost; and in these the temporal convolutions were involved, extending in some to the inferior parietal, angular and occipital convolutions. The practical application of the localization of aphasia lesions is obvious, for the regions concerned in speech are especially accessible to the surgeon.

Another fact of interest is that it seems to be proven that there is no ideational centre. An idea may be impaired but cannot be wholly destroyed by a single cortical lesion. Thought being regarded as the play of consciousness, a long association of fibres between sensory centres cannot be localized.

Dr. Lloyd had now a case of simple homonymous hemianopsia without psychical or word-blindness, and wished to know whether there was any diagnostic importance in this condition as to localization. Was there a preponderance of one hemisphere over another as regarded sensory memories of language?

Dr. Starr said that the matter of psychical blindness had recently been discussed by Wernicke and another. A lesion affecting bilaterally both occipital lobes or the association tract produces psychical blindness, but a lesion along either tract itself does not cause this condition. Nine cases of psychical blindness from lesions of one hemisphere alone had been reported.

The election of officers for the ensuing year being then in order, the following were chosen:

President, Dr. E. C. Spitzka, of New York; *Vice-Presidents*, Dr. Wharton Sinkler, of Philadelphia, and Dr. H. M. Lyman, of Chicago; *Secretary and Treasurer*, Dr. G. M. Hammond, of New York; *Councillors*, Dr. Henry Hun, of Albany; Dr. C. L. Dana, of New York.

AFTERNOON SESSION.

Dr. J. H. Lloyd, of Philadelphia, read a paper entitled

A LATER HISTORY OF A CASE OF FOCAL EPILEPSY FOR WHICH TREPHINING AND EXCISION OF THE MOTOR CENTRES WERE PERFORMED.

Full details of the case had been recorded at the last annual meeting of the Association. At that time but three months had elapsed since the operation, and Dr. Ferrier, of London, had stated in a discussion that the time was too short for a decisive result as to the usefulness of the operation. Now that more than a year had passed, further details could be given. Before the operation the patient had had many seizures daily. There was no fit for four months after the operation. Since that time however, there had been some ten seizures in nine months.

Dr. Spitzka said there was a minority, but a powerfull minority, of clinicians and physiologists who hesitate to accept the dictum that spasms were always of cortical origin when clonic in character and local in manifestation. There were well authenticated cases of spasms such as are generally described as cortical, which undoubtedly had their origin in the pons or medulla. He, therefore, thought it premature to advise surgical procedure when there was still doubt as to the position of the convulsive centre. He was of opinion that the seat of irritation in the great majority of cases of epilepsy was in lower centres, such as Nothnagel's convulsive centre.

Dr. Mills mentioned the case of a man subject to unilateral convulsions beginning in the hand. There was a scar upon the head, and trephining was done at this spot in order to relieve severe pain, probably due to trigeminal irritation in the scalp or dura. This operation relieved the pain, but caused the Jacksonian epilepsy upon the other side. The operation was repeated in the same spot, the membranes and cortex being removed to some extent, and with great success. It was an apparent illustration of the fact that convulsions may occasionally be the result of operations themselves.

Dr. Dercum had seen the same case and stated that the dura was not opened in the first operation. At the second trephination the membranes were found united. There was a pachymeningitis. The patient had surgical epilepsy. Six months elapsed between the operations.

Dr. Lloyd said it was a question whether one could have localized epilepsy from irritation of lower centres, as Dr. Spitzka had intimated. He had always held the idea that such spasms were of cortical origin. In the case he had just described the absence of fits for four months led him to believe that he had removed the parts concerned in their manifestation. He had been hopeful of the efficacy of this method in the relief of such a disorder, and was not yet willing to give up the idea that something may be accomplished in this way. He thought it would be justifiable to operate again in this same case.

Dr. Spitzka asked if the cortex removed had been examined microscopically, and what was the pathological condition found.

Dr. Lloyd answered that the microscopist had reported atrophy of the cortical cells.

Dr. Spitzka remarked that atrophied cells could scarcely be very potent in the production of epilepsy.

Dr. Landon C. Gray, of New York, then presented a paper upon

THE DIAGNOSTIC SIGNS OF MELANCHOLIA.

in which he called particular attention to the difficulty of diagnosis of simple melancholia at times. It was usually when in mild degree confused with neurasthenia. He had recently made a study of eighteen cases of this form, and pointed out what he considered the three cardinal symptoms; namely, depression, insomnia and post-cervical ache. The last named he thought especially characteristic. This pain was sometimes neuralgic in character, at others vague and continuous. Simple melancholia, such as this, should not be confounded with neurasthenia, or melancholy states dependent upon hepatic or nephritic disease, or with non-typical forms of insanity.

Dr. H. S. Upson, of Cleveland, then read a paper in which he considered the relation between

MULTIPLE NEURITIS AND INFECTIOUS CEREBRO-SPINAL MENINGITIS.

Dr. Mills had first suggested the possibility of connection between the two. His own case was briefly as follows: A woman, age twenty-seven, had intense pain and tenderness in the extremities, with stupor and slight opisthotonos, no electrical examination could be made because of the extreme hyperæsthesia. She had had a multiple neuritis a year before but recovered. The autopsy revealed congestion of the pia of brain and cord with marked serous effusion, and a microscopic examination of the ulnar nerve revealed interstitial inflammation there. In the opinion of the author, the nerve trunk inflammation was not parenchymatous, but rather of the membranes, and was analogous to the process in the brain and cord; the nerve fibres were secondarily involved. He had not looked for bacteria.

Dr. Mills naturally felt interested in the case. He had had an autopsy on one of his own cases. Portions of nerves and sections of the brain and cord had been examined by Dr. Gray of Washington, and this examination proved conclusively the association of neuritis with the cerebro-spinal meningitis.

Dr. Spitzka referred to the vacuoles in the author's sections, and said retarded lymph outflow might be important in causing the death of tissue and the formation of gas bubbles which these vacuoles must be considered to represent. He had noticed also two bodies in the section, larger than ordinary leucocytes, very delicately stained, which the author should have carefully delineated.

Dr. C. K. Mills, of Philadelphia, then gave an abstract of a paper by Dr. J. T. Eskridge, of Denver, on a

CASE OF ABSCESS OF THE BRAIN; OPERATION; DEATH ON THE NINTH DAY.

The patient had had typhoid fever. Two months later there was purulent inflammation of the middle ear, and not long after, symptoms of brain irritation followed, such as headache, delirium, persecutory delusions, together with paralysis of the right hand and right angle of the mouth. The skull was trephined over the face and hand centres, and a purulent inflammation was found under the dura. The wound was then dressed, and the patient died nine days later. A widespread suppurative meningitis was found at the autopsy. Dr. Mills thought the case of great practical value. He thought trephining should have been performed in two places, at the centre which had been properly localized and also over the mastoid region where the inflammatory process had originated.

Dr. B. Sachs, of New York, read a paper on the

PERONEAL FORM OF PROGRESSIVE MUSCULAR ATROPHY.

The author reiterated his statement of last year that this form was closely related to Duchenne's type. He gave very full details of the cases of two brothers that had recently come under his observation through the kindness of Dr. Gibney. The boys were thirteen and ten years of age. There was a gradual development of double club-foot in both at the age of five years, followed by an atrophy proceding upward, beginning in the leg and toe muscles and spreading to those of the thigh, in one case also involving muscles of the upper extremities. The knee jerks were present. In one there was general anæsthesia, in the other paræsthesia. There was full degenerative reaction in some of the muscles of one boy, partial in the other. The progressive wasting rendered treatment of this form of club-foot less satisfactory than that of congenital cases. He would suspect this peroneal form in all cases where acquired club-foot was associated with progressive wasting of the leg muscles, and particularly if heredity or family occurrence of the disease could also be established.

Dr. Sinkler could recall several similar cases, one in particular of two brothers. But doubtless more would be seen if careful attention were paid to the matter.

Dr. Birdsall did not think the presence of knee jerk so important a diagnostic point as the author seemed to regard it. He had seen a few cases of old poliomyelitis where the paralysis and atrophy were below the knee, and yet the knee jerks were quite active on both sides. It could not therefore be an essential point in diagnosis. Dr. Bullard had also observed the presence of the knee jerk in old cases of poliomyelitis.

Dr. Prince asked if the author had said that the absence of pseudohypertrophy was a diagnostic point between this form and primary myopathies, and was answered in the affirmative. He did not consider this true.

Dr. Spitzka asked if the symmetry and the coincidence of time and intensity as shown in the photographs were always the case, and was answered in the affirmative.

Dr. Sinkler corroborated two of the speakers as to the presence of the knee jerk in cases of old poliomyelitis, and cited an instance from his own experience.

Dr. Gray objected to the division of progressive muscular atrophy into groups. Why should there be an arm type, a face type, a leg type? Such division might be carried out indefinitely. A more useful classification would be upon the pathology of the disease, a division into central, muscular and peripheral nerve lesions.

Dr. Sachs said he did not lay great stress upon the presence or absence of the knee jerk. Yet in extreme atrophy of the vasti from poliomyelitis the knee jerk was always absent; and if it were present he should consider it a case of progressive muscular atrophy. He had himself tried to discard subdivisions as much as possible, but the present classification was a clinical necessity. A better might be made when the pathology is more accurately determined. At present there were spinal and non-spinal cases, but there was no certainty as regarded peripheral nerve cases.

Dr. Morton Prince, of Boston, then exhibited some microscopic specimens from the muscles of a case of

PSEUDO-HYPERTROPHY.

The patient was now twenty-eight years of age. The specimens showed a large quantity of connective tissue, hypertrophy of a few fibres, and great atrophy of many of the fibres. There was also great loss of striation, but no fatty or granular degenerations and no vacuolization.

The following papers were read by title:

A SERIES OF CASES OF CEREBRAL HÆMORRHAGE OF UNUSUAL INTEREST,

by Dr. J. H. Lloyd, of Philadelphia.

THE HISTOLOGICAL EXAMINATION OF NERVES REMOVED FOR TRIGEMINAL NEURALGIA,

by Dr. J. J. Putnam, of Boston.

THE PATHOLOGICAL ANATOMY OF CHOREA,

by Dr. C. L. Dana, of New York.

PARANOIA IN TWO SISTERS,

by Dr. Frederick Peterson, of New York.

The following new active members were elected: Dr. Hobart A. Hare, of Philadelphia; Dr. J. P. C. Griffith, of Philadelphia.

The meeting then adjourned.

In the evening a banquet was given by the Association at the place of meeting, the West End Hotel, at which some thirty members were present.

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FIFTH DISTRICT BRANCH OF THE NEW YORK STATE MEDICAL ASSOCIATION.

Fifth Annual Meeting, held at Brooklyn, N. Y., May 28, 1889, the President, Wm. T. Lusk, M.D., in the chair.

MORNING SESSION.

ADDRESS OF THE PRESIDENT.

In opening, Dr. Lusk congratulated the Branch Association upon its prosperity, the rapid growth in membership, the zeal exhibited for the principles for which the organization stands, and the scientific merit of the work performed at these annual gatherings, which he said were all prophetic of a long and useful life.

He then proceeded to narrate two cases which he had hitherto refrained from publishing, in order to present them first on this occasion.

I. LABOR AT FULL TERM: UNDILATABLE CONDITION OF THE CERVIX DUE TO CICATRICIAL TISSUE, SPONTANEOUS RUPTURE OF THE UTERUS.

The patient aged thirty-three years, was brought late at night to the Emergency Hospital, exhibiting signs of the most severe suffering. The temperature was 99½°, the pulse 140; and the woman was semi-maniacal. This was her second pregnancy, as far as could be learned. Her first confinement had been a prolonged one. and had been terminated by instruments. The present labor had then lasted about thirty hours. Dr. Lusk was hastily summoned, and on his arrival he found that the membranes had long been ruptured, the uterus was firmly retracted upon the child, whose body was apparently situated in an oblique position, with the head directed to the left, and rupture of the uterus seemed imminent. A digital examination showed that no dilatation of the cervix had taken place, and that this fact was due to firm cicatricial tissue situated at the internal os and extending somewhat over the lower uterine segments. With the impending danger of rupture, he decided upon the Cæsarean section; but the cries and importunities of the patient at sight of the preparations for the operation led to hesitation, and this hesitation proved fatal.

While the question of operation was under debate she called for a chamber, saying that she wished to pass urine; and when placed upon the vessel began, in spite of every attempt to control her, to make violent straining efforts. Suddenly she fell back unconscious. The pulse was almost imperceptible, and the entire surface of the body became intensely pallid, and covered with clammy perspiration. It was evident that uterine rupture had taken place, and the patient, who did not rally, died in almost two hours. The autopsy was made by Dr. T. Mitchell Prudden, and he reported that on making the abdominal incision the body of the child was found corresponding to the long axis of the mother's abdomen, with the back directed to the front, and the head bent sharply to the front. There was a considerable quantity of soft red blood-clot in the abdominal cavity, and the rent in the uterus extended obliquely across the uterus from the upper cervical portion to the right side of the fundus. The uterine walls were about one centimetre thick, and the ragged edges of the rent were deeply stained and infiltrated with blood. The placenta was firmly attached to the left upper segment of the uterus. which contained about sixty cubic centimetres of dark soft blood-clots. The os externum was lacerated from the previous labor, the upper portion of the cervical canal was narrowed by dense cicatricial tissue, so that its diameter was about two centimetres; and the anatomical diagnosis therefore was: Rupture of the Uterus, with old firm cicatricial contraction of the Cervix Uteri.

The case was rare, Dr. Lusk said, inasmuch as the cicatricial contractions were situated at the internal os and the lower uterine segment. Dilatation by incision or other antiseptic means was impossible. When cicatrices were limited to the lower part of the canal, as was usually the case, the obstacle to the birth of the child was usually removed by the employment of the knife to sever the limiting bands. Again, the case furnished a new illustration of the fact that in spontaneous rupture the laceration is not of necessity confined to the thinned lower uterine segment, as has been maintained by some of the extreme partisans of Bandl's theory.

He thought that the early performance of the Cæsarean section or the Porro operation would probably have saved the patient's life; although at the late period of her admission to the hospital either procedure would have partaken of the nature of a forlorn hope. Spontaneous rupture during labor, he went on to say, is not so rare an event that those engaged in busy practice can afford to be ignorant of the means of combating the tendency to a fatal result by all the resources of modern science. To Bandl belongs the merit of showing that nearly all ruptures begin in the lower uterine segment. In normal labors during each pain the fundus and body of the uterus thicken, while the lower segment is stretched and thinned by the ovum or the presenting part of the fœtus. So long as no obstacle is met with which hinders the descent of the ovum or the fœtus, this process ends in the conversion of the uterus and vagina into a continuous canal. Ordinarily, in advanced labor, the lower circumference of the body is distinguished from the stretched lower segment by a thickened ridge termed the contraction ring, or ring of Bandl, though in easy labors this ring is often but slightly indicated.

When, however, the descent of the fœtus is hindered by any cause the resistance of the ligaments which hold the uterus in position is overcome by the continued retraction of the fundus and body, and, as a consequence, the contraction ring is withdrawn upwards, the lower segment is thinned, and, in extreme cases, nearly the entire uterine contents may occupy the distended passive inferior segment. Under these circumstances the contraction ring is strongly marked, and may be felt through the abdominal walls above the pelvis, or even in the neighborhood of the umbilicus. This movement upward of the contraction ring is limited somewhat by the pelvic and round ligaments and by the direction downward of the abdominal pressure; and as these restraining agents operate more efficiently in first than in subsequent labors, it is not difficult to comprehend the relative frequency of rupture in women who have borne many children. As a result of the continued retraction of the body of the uterus the lower segment may become so distended as to form little more than a membranous covering to the fœtus, and the conditions favoring rupture are established. It has been maintained upon theoretical grounds that spontaneous rupture is arrested by the contraction ring, and this is certainly the rule where there has been no art intervention; but the case in question shows that the rule has its exceptions.

Undoubtedly the popularization of Bandl's teachings has contributed greatly toward the adoption of an intelligent prophylaxis in difficult labors. The situation of the contracted ring, which, when well defined, can usually be felt through the abdominal walls, furnishes in many cases an index of the degree of the threatened danger. The risks are further increased in cross births, in hydrocephalus of the child and in lateral and anterior displacement of the uterus, owing to the augmented pressure exerted under such conditions upon a limited portion of the already over-distended tissues. If rupture occurs under these circumstances the accoucheur cannot wash his hands of responsibility. He ought to know that the faulty uterine positions should have been early connected by judicious bandaging, the hydrocephalic head reduced by puncture, and that in all forms of obstructed labor there comes a time when patient waiting ceases to be a virtue and active intervention is demanded. The new learning teaches us that when the uterine efforts have proved unavailing to fix the presenting part, and the increasing distance of the contraction ring from the pelvic brim points nearly to a dangerous thinning of the uterine muscle, the physician must decide promptly upon the indicated measure of relief. These, in head presentations are version, craniotomy and the Cæsarean section. In neglected shoulder presentations only, cautious attempts at version are justifiable, and the operator should never forget to support the head with one hand through the abdominal walls in such a way as to relieve the strain upon the over-distended tissues. In case of failure the persistent use of rude force is criminal.

Dr. Lusk stated that his object in dwelling upon these points was the fact that he did not believe that rupture of the uterus is by any means so rare as statistics would seem to indicate. While, however, insisting upon a rule of personal accountability as regards the accoucheur, he said it was necessary to recognize that to Bandl's scheme there are exceptions. Now and then, cases are reported in which primary rupture has occurred in the fundus and in the body, and where the lower segment has given way without antecedent signs or warnings. Having mentioned such a case in his own experience, he said that rupture may be complete or incomplete. In the latter the tear is confined to the muscular structures, and the peritoneum remains intact. In most instances the hæmatoma resulting from the bleeding vessels dissects up the peritoneum for a certain distance beyond the tear. In the complete form the peritoneum likewise gives way, but to a less extent.

When the shock, the sudden stoppage of the uterine pains, the recession of the presenting part, the bloody discharge, the lateral tilting of the fundus, or its apparent disappearance in the case of the passage of the entire child into the abdominal cavity has led to a diagnosis of rupture, the first indication for treatment is the speedy removal of the child. In selecting the manœuvre for accomplishing this, the important consideration to be kept in view is that it shall to the least possible extent increase the dimensions of the already existing rent. In general terms he said it might be stated that with an undilated cervix, or in cases of extreme pelvic contraction, or after the passage of the head and arms through the rupture, and in all cases where the child passes entirely into the abdominal cavity, laparatomy is the more conservative measure. There is not only less shock, but the opening of the abdomen enables the operator to remove effused blood and amniotic fluid from the peritoneal cavity. Still, the not uncommon impression that the ruptured uterus furnishes a promising field for abdominal surgery does not take into account, that in many of the cases where laparatomy is clearly indicated the patient is practically moribund.

The employment of the suture to close the uterine wound in view of recent Cæsarean processes seemed reasonable, but it was to be borne in mind that with ragged borders infiltrated with blood, with the peritoneum stripped off, and sometimes with air infiltrated into the sub-peritoneal connective tissue, the conditions for union are in no way comparable to those which exist in Cæsarean section. The Porro operation, he thought, promised better results, though the deep situation of the tear would make it difficult to secure a healthy pedicle. There should, however, be no hesitation about the suturing of the peritoneal surfaces, as the rupture is thus converted into an incomplete one, with its more favorable prognosis.

When the child could be removed by the natural passages without increasing the extent of the rupture, and when the latter was confined to the lower segment, he considered laparatomy of doubtful value. In many such cases recovery as far as life was concerned had been secured by the employment of antiseptic irrigation and filling the gap with antiseptic gauze. At the same time drainage should be secured by means of iodoform wicking or the bent rubber tube, both drainage and packing being most effective when the tear is situated in the posterior wall. This plan of treatment is, of course, only useful where no infection of the abdominal cavity has taken place at the time of the rupture, and the best results are obtained, therefore, in cases of complete rupture. At the same time that drainage is used, compression of the fundus and body should be employed by means of the hands through the abdominal walls, and in case of hæmorrhage efficient aid can be furnished by pressure made upon the aorta. It may be necessary to maintain manual compression for hours. Finally, a carefully-graduated compress should be placed around the uterus to maintain firm contractions. For this purpose he prefers the disc-shaped hydrostatic bag partially filled with water; and in this condition and in all forms of post-partum hæmorrhage he has found it most effective. It adapts itself nicely to the contour of the contracted uterus, and it has sometimes seemed to him to work as intelligently and surely as the skilled hands of the accoucheur.

The second case was one of Cæsarean section resulting fatally. The patient had a contracted pelvis and kyphosis, with an abscess from which there was a large accumulation of pus under the psoas muscle, and Dr. Lusk expressed the opinion that if in this instance he had performed the Porro operation, and thus by the removal of the uterus relieved the pressure upon the intestines and other structures, the patient's life would probably have been saved.

Dr. Thomas H. Manley, of New York, read a paper on

THE GENESIS OF TUMORS.

Dr. F. E. Martindale, of Port Richmond, Staten Island, read a paper on

CALCIFICATION OF CARDIAC LEFT VENTRICULAR WALL FOLLOWING SUBACUTE VERRUCOSE ENDOCARDITIS.

This case, he said, was first reported in the "Transactions of the Medical Society of the State of New York," for the year 1887. The patient, a man aged seventy-three years, was suddenly attacked, April 13, 1886, after half an hour's ride, with intense pain in the precordial region, accompanied by a cold perspiration and dyspnœa with a sense of impending dissolution. After three hours of active treatment partial relief was secured, but the dyspnœa remained as a permanent symptom of some serious derangement of the circulatory apparatus. Dr. Martindale was called to the case April 15. The general appearance of the patient was indicative of exhaustion. The face was flushed and anxious; the temperature 101½°, and the pulse 100, weak, and intermitting every third beat. There was an occasional dry cough, and auscultation revealed some coarse râles at the base of the left lung and an indistinct friction sound near the junction of the third and fourth ribs with the sternum. The respiratory murmur was exaggerated over the middle and lower lobes of the right lung, while the upper part of the left lung was less resonant on percussion. The cardiac area was moderately enlarged laterally and upwards, and the apex beat was scarcely perceptible, a feebly pronounced purring sound taking its place. There was a marked epigastric tenderness, and the area of hepatic dullness was enlarged.

The diagnosis made was subacute endo-carditis, with circumscribed peri-carditis at or near cardiac base. The etiology was obscure, as there was no history of either acute or chronic rheumatism or nephritis or any exanthematous disease since childhood. Under appropriate treatment there was a gradual abatement of the symptoms and of the physical signs, with the exception of the friction sound, which remained and seemed more distinct than at the onset of the attack, demonstrating, as was believed, an extension of the imflammatory process from the serous lining of the pericardium to that of the left lung. By April 27 there was an intermitting of only one beat in seven; the systolic impairment being supposed to be due to a mitral insufficiency. By May 1st, the intermission of the heart-beat had entirely disappeared, but the apex murmur still remained as a symptom of endo-cardial irritability.

The dyspnœa, which had been the cause of the patient's chief distress, ceased, and the relief experienced from its disappearance, with an improved appetite, encouraged the hope of permanent relief from his disability, when on May 3d, Dr. Martindale was hurriedly sent for on account of sudden and severe pain in the right fore-arm. Examination showed the right hand cold and livid, and the radial pulse absent, that of the brachial at its bifurcation being full and regular. A curious complication in connection with this complication was the alteration noted in the supposed mitral bruit, which had been previously quite pronounced. Thereafter it became much less distinct, while the force of the cardiac contraction was increased. The lesion was at once diagnosed as an embolic infarction of the right radial artery; the point of occlusion being at or near the brachial division, as manifested by the lividity and low temperature of the forearm, and the combined numbness and pain referred to the elbow. Subsequently the patient had two attacks of marked dyspnœa, with pain in both legs and œdema of the feet and ankles. By the 1st of July a very appreciable improvement had been again inaugurated; but it was not until the early part of August that the rythm of the right radial artery had become at all comparable with that of the left. In the meanwhile but slight modifications of the precordial bruit were observed.

From a careful inquiry into the previous history of the patient it was learned that in June, 1873, he had been suddenly attacked with a series of symptoms, alarming in their intensity as those of the initiatory stage of the then existing disability, and that a diagnosis of some cardiac lesion, the precise nature of which could not be obtained, was made by the physicians in attendance.

The history of the case thus given was that presented at the meeting of the New York State Medical Society referred to. By August 1st, the patient's general health and the distressing symptoms from which he had been suffering were greatly improved; but the auscultatory evidences pointed to a chronic mitral insufficiency, representing probably, to some extent at least, the first, and certainly, to a much greater degree, the last endo- and peri- cardial attacks, and it was now clear that even should he survive for any length of time, he would unquestionally labor under a permanent cardiac insufficiency, with more or less remote compensatory hypertrophy and dilatation and the functional disturbances resulting therefrom. In December, œdema of the feet and ankles reappeared; the cardiac insufficiency recurring again progressive, with its accompanying dyspnœa, and pericardial line of dulness again rising. Subsequently the patient's disabilities were again relieved to a considerable extent, but by the following April œdema of the lower extremities was again on the increase. The percussion note over the lower third of the pericardial triangle was flat, and the indications generally pointed to a gradually progressive infiltration of the connective tissues. By July 3d, the œdema had extended to the middle third of the thighs and implicated the scrotum and prepuce, while dyspnœa had again become so serious as to render the recumbent position impracticable. By the middle of September the anasarca had become general, and the patient died from œdema of the lungs on October 23d.

At the autopsy there was found general anasarca, with a considerable hæmorrhagic effusion in the pericardium. The apex of the heart was drawn backwards, and was firmly attached to the middle lobe of the left lung; the adhesions involving the two layers of pericardium and pleura. The left ventricular wall had undergone calcareous degeneration, and was very thin at this point. There was considerable cardiac hypertrophy and dilatation, but no valvular lesions were found, with the exception of a single tendinous spot on one of the mitral folds, if that could be regarded as such. The original diagnosis was at fault, therefore, only in attributing the apex murmur to a mitral stenosis, rather than to a roughened and unyielding endocardial surface.

In reviewing the history of this rare case, Dr. Martindale said some important questions relating to the etiology of this lesion arose. (1) Was the initial attack, in 1873, an endo- or peri- carditis, and to what degree were either or both attacks concerned as factors in the subsequent permanent calcareous degeneration? Although the history did not make this apparent, there must have been an etiological factor behind the first attack, since all leading authorities agree that primary idiopathic pericarditis is of extremely rare occurrence. In regard to primary endocarditis, also, there is absolutely nothing known of a positive character. We are, therefore, forced to the conclusion, that the cardiac disability of 1873, in this case, must have had its origin in either a rheumatic or an exanthematous lesion at so early a period in the patient's life that it produced no permanent impression. There could be little doubt, he thought, that the first lesion, in 1873, was a circumscribed pericarditis, with a possible implication, to a limited extent, of the muscular tissue of the heart. In the initial stage of an acute pericarditis marked derangements of respiration are noticed, particularly if the cardiac muscular tissue becomes involved. Severe pains in the chest and epigastrium have also an influence in determining the degree of dyspnœa; and these, together with the pressure of the pericardial effusion upon the heart, are usually quite sufficient to establish the cyanotic and collapsed conditions so frequently observed in these cases, and which were the marked features of the one under consideration in its early development. Upon a careful examination of the specimen, he said it could be seen that the endocardial surface of the calcified ventricular wall was smooth and polished, while the myocardium was the chief seat of the calcareous deposit; which further tended to substantiate the view that the disability of 1873 started as a pericarditis, but that the myo- and endo- cardium were not seriously implicated until the recurrence of 1886, for it was hardly to be regarded as possible that the pathogenetic conditions of the latter date (even though greatly modified in degree, as compared with those observed in the specimen) could have existed thirteen years without any subjective symptoms whatever.

Another interesting question, he went on to say, had reference to the etiology of the embolic infarction of 1886. For this, there was needed no more reasonable hypothesis (assuming the myocardial lesion existing at this period to have been a sequence of the secondary pericarditis of 1873), than that the left ventricular pericardium was at this time attached by circumscribed adhesions to the left pleura; its contractile power being not only restricted by this, but likewise by the gradual degeneration of the cardiac muscular tissue as well. The blood current through the left ventricle must have been churned, as it were, by the irregular and imperfect contraction of its normal muscular fibres upon the dense and non-contractile myocardial wall; and from this resulted, no doubt, the formation of a small coagulum and its subsequent localization, through the innominate, right subclavian, and brachial arteries, at the seat of the radial infarction.

At this point, he said, the inquiry forced itself upon us as to the possible agency of sepsis in the etiology of cardiac embolism as illustrated in the case before us; and, having referred to several modern authorities, he stated his conviction that it was clear that nothing positive could be affirmed regarding sepsis as an etiological factor in the remarkable cell metamorphosis observed in this specimen.

In conclusion, Dr. Martindale said that the etiology of the tissue change resulting in the calcareous degeneration, involved a question of more than ordinary scientific interest. The hypothesis would seem to be a reasonable one, that its starting-point, in the earlier attack, was the visceral layer of the pericardium, the myocardium having been involved in a slight degree only. The lesion, in the course of the year's disability, became chronic and finally terminated in resolution, with compensation and measurably impaired cardiac contractility, under which a fair degree of health was enjoyed for thirteen years, from June, 1873, to April, 1886. At the latter date, the etiological factor must have been a subacute endocarditis, with possibly circumscribed pericarditis, subsequently implicating the interstitial and connective tissue of the myocardium. That the endocardium must have been involved early in the second attack, the blood-clot and radial infarction would seem to have established positively; but it could only have been in the later stages of that attack that the circumscribed myocardium became wholly destroyed by tissue metamorphosis, with the resultant thin long septum seen in the specimen.

(To be continued.)

Recent Literature.

A Manual of Diseases of the Ear, for the use of Students and Practitioners of Medicine. By Albert H. Buck, M.D. Clinical Professor of Diseases of the Ear in the College of Physicians and Surgeons, New York, etc. Octavo, pp. 411. William Wood & Co. 1889.

The present work is a modification of the author's Diagnosis and Treatment of Ear Diseases, published in 1880, and we must say very much improved in every way. It has been rearranged, in many places rewritten, is much more systematic than the previous work, and constitutes now a manual of great value.

Anatomy and physiology are treated briefly and well in an appendix only, the book itself being given up to a thoroughly practical treatise in which etiology, pathology and treatment are the prominent features, and many illustrative cases are cited. All subjects are discussed with candor, fairness, without dogmatism, and throughout the book there is a personal flavor which brings one in close and pleasant relations with the author, and reminds one of Watson's Practice, in which this characteristic was so marked as to make that work one of the delights of our student days.

Obstetric Aphorisms for the Use of Students Commencing Midwifery Practice. By Joseph Griffiths Swayne, M.D. Ninth edition. 16 mo., pp. 159. Philadelphia: P. Blakiston, Son & Co. 1888.

The appearance of the ninth edition of this well-known book attests its continued popularity. It is a pity that in this edition there should not have been incorporated the most recent and improved teachings in regard to aseptic obstetrics, and that clear and explicit rules should not have been given for the student's guidance. The section on puerperal fever is painfully inadequate and antiquated. But in spite of these defects, which must be remedied by the teacher, the book is of great service to students who begin their clinical work in obstetrics before they have received a full course of didactic instruction.

Questions and Answers on the Essentials of Obstetrics, prepared especially for Students of Medicine. By William Easterly Ashton, M.D. 16 mo., pp. 220. Philadelphia: W. B. Saunders. 1888.

The object of this little book is indicated by the title. It is based on Parvin, Lusk, Playfair, and other standard authors, and will no doubt prove useful to students in preparing for examination. The book is neatly printed and bound, and has a good index.

— We notice in the northern papers an advertisement of an estate for sale in Virginia, with the following comprehensive statement of hygienic advantages, "Location for climate, health, lungs, rheumatism and asthma unsurpassed."

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FŒTAL MALARIA TRANSMITTED BY THE FATHER.

The very considerable susceptibility of the fœtus in utero to various diseases, infectious and otherwise, has been naturally most widely associated with conditions of the maternal organism, from the fact of the long-continued and intimate connection of the child with the mother as compared with that which it has with the father. The mother's power for infecting the fœtus is, in other words, twofold; namely, by a vitiated ovum, and also *post conceptum* by influences operating through the placental circulation; while the father has but one such opportunity, namely, by a vitiated spermatozoon.

In the case of one malady, syphilis, it is held by most authorities that the infection of the fœtus may be conveyed solely by the father, the mother remaining uninfected unless by the syphilitic occupant of her uterus.

Tuberculosis, if inherited, shows itself so much later than syphilis as greatly to complicate the problem of its transmission. A few instances in the human subject and in the calf seem to show that the bacilli can traverse the placenta from the maternal organism, and though Cohnheim, with others, taught that tuberculosis was transmissible in the semen and in the ovum, it must be confessed that the drift of recent opinion is against its being conveyed in the generative element of either parent, or at least of the male.

It is possible that in the study of fœtal malaria we may find an aid to the solution of some of these problems of pathological inheritance. For we have here a disease at once infectious and chronic, and like syphilis rather than tuberculosis, early in its manifestations after birth. The existence of fœtal malaria has been sufficiently demonstrated by the observation of interuterine and neonatal chills, accompanied by an enlarged spleen, occurring in the child of a similarly affected mother. If she was infected at the time of conception, she was obviously infected throughout the pregnancy, so that the transmission of malaria *per ovum* could not be demonstrated, because such transmission *per placentam* could not be eliminated. So far as we recall, no instances have hitherto been recorded where the child showing malaria, the father alone of the parents has had the disease.

We find, however, in the *Edinburgh Medical Journal* for June, two cases of great interest in this connection, recorded by Dr. R. W. Felkin, Lecturer on Diseases of the Tropics and Climatology, in the Edinburgh School of Medicine. In both, the father had well-marked malaria, and the mother was free from it; yet the child showed symptoms of the infection.

In the first case, the husband had contracted, on the west coast of Africa, both remittent and intermittent fever, on account of which he threw up his situation there, and went to the island of Madeira, where he met a Lancashire woman, and married her. They remained at Madeira eight months, and then went to Durban, Cape of Good Hope, the wife being eight months pregnant, and never having had any symptoms whatever of malaria. A week after her arrival Dr. Felkin saw her, complaining of a curious sensation in the abdomen, and he distinctly felt the fœtus shaking. The lady said the same thing had happened on several previous occasions, though never so markedly before. The phenomenon occurred at the same hour for four consecutive nights, when labor came on. Forceps were called for, and delivery was obstructed by the distended abdomen of the child caused by enlarged spleen. After birth the child had seven attacks of ague, characterized by the cold, hot and sweating stages. The paroxysm lasted seven hours in all, and the rectal temperature was 102°. The father stated that just before, and for the month following his marriage, he had had several very severe attacks of ague.

A possible objection to assigning the entire responsibility for this case to the father lies in the fact that, after removal to Durban, they were in a place where malaria might be contracted, though of course, the exemption of the woman from all symptoms, and her short stay, would make her a very improbable medium for transmitting the infection to the child; besides that she stated that similar though less extreme shakings of the fœtus had been observed by her before.

In the second case the child's parents had been married twelve years. The mother had never been away from Edinburgh. Three children had been born, all at full time, and quite healthy, during the first seven years after the parents' marriage. The father then went as fireman on a steamer trading with West African ports. The men were forbidden to land at the ports, but the second engineer and this fireman managed to escape several times, and had severe remittent fever. The engineer died, and his death so frightened the fireman that he did not go on shore again, although he remained another year in the service, suffering from ordinary ague. He had never suffered from syphilis. Ten months after his return home a child was born at full time, but it soon "pined away and died." Rather more than a year later another child was born, which was always ailing, and had a rather enlarged spleen, but was greatly improved by appropriate treatment.

In the last and sixth pregnancy Dr. Felkin observed an attack of pain and fluttering "like a bad quickening," which lasted an hour, and recurred twenty-four hours, and again forty-eight hours later. The woman described it as like attacks she had had with her two previous children. Labor came on after one of these attacks, and the child was born at seven and one-half months. After birth it had two attacks of ague, at intervals of twenty-four and forty-eight hours respectively, and died in the cold stage of the second. In the first attack after birth the cold stage was very well-marked, the child distinctly shivering, and continuing to do so for rather more than half an hour. The hot stage lasted about two hours, and was followed by fairly profuse perspiration, the cotton-wool in which the child was wrapped becoming quite wet. During the attack the temperature was taken several times, and the highest point reached was 102.6°. The post-mortem appearances were fairly confirmatory of the clinical diagnosis of malaria.

If these cases be substantiated by other similar ones, they will go to place malaria beside syphilis as one of the diseases which can be transmitted directly from the father to the child, without the necessary infection of the mother; and if the plasmodium malariæ can gain access to the spermatozoon, may not, after all, the bacillus?

INTESTINAL TROUBLES OF INFANCY.

Dr. L. G. Broughton, of Reidsville, N. C., writes to the *North Carolina Medical Journal* on the above subject. As the result of quite an extensive country practice, he has met with only three grand divisions of infantile diarrhœa — simple diarrhœa, cholera infantum, and dysentery. He is satisfied that, in the vast majority of cases, decomposition in the gastro-intestinal tract is the *fons et origo mali.* And he finds these three great indications predominant; first, to clear out the bowels; second, to arrest decomposition and putrefaction; third, to restore healthy action in the alimentary tract.

To meet the first indication there is nothing better than castor oil, provided the stomach can bear it. With many practitioners rhubarb, either in powder in syrup or infusion, answers well in cases where castor oil is objectionable. To meet the second indication he uses salicylate of soda. To a child of from six months to two years old he would give three grains every two or three hours. This, he thinks, may be advantageously combined with pepsin, two or three grains. Another antiseptic of which he speaks in high terms is the sulpho-carbolate of zinc, in the dose of one-sixth to two grains. The third indication is fulfilled by suitable nutrients, as pancreatized milk, scraped raw beef, and tonics, as per-nitrate of iron and columba.

Dr. Victor C. Vaughan, in a late number of the *Dietetic Gazette*, speaks of the requirements necessary in the preparation of food for infants in the intestinal troubles of summer. (1) Cow's milk used as food for infants, should be sterilized. This is best effected by boiling. (2) The proteids in cow's milk may be made to more closely approximate those of woman's milk by partial digestion, at least by conversion into the soluble form. All chemists are agreed that the proteids of woman's milk are more easily digested than the same food stuffs in cow's milk. Dr. Vaughan would, therefore, counsel the partial artificial digestion of cow's milk, when used as food for infants, especially for those of weak digestive organs. On the other hand, he is convinced that this digestion should not be complete. In the first place, the digestive organs would be greatly weakened if the food used for any great length of time should be completely digested before its administration. Moreover, the use of wholly digested proteids in quantity is not free from danger, as experiments have shown that if peptones be directly injected into the blood they are poisonous. Normally it is a function of the liver to arrest and alter the products of proteid digestion in the stomach and intestines; but if a great quantity of ready-made peptones be poured into the stomach, they will be absorbed so rapidly that the liver may fail to perform this function fully.

The deficiency of carbo-hydrates in cow's milk may be supplied by the addition of milk-sugar or dextrin. Milk-sugar is too expensive to be used on a large scale. Common sugar acts as an intestinal irritant, and causes diarrhœa. Starch is not digested by the young child. Dextrine is easily prepared, is not acted upon by the yeast ferment, but is converted by diastase and by the pancreatic juice into maltose.

MEDICAL NOTES.

— A physician of Philadelphia insisted upon driving a fractious horse, and thus disregarded the suggestions of his coachman. The horse ran away, the coachman was thrown out of the carriage, his skull was fractured, and one of his legs was twice broken. Now the coachman sues the doctor, putting his damage at $10,000.

— The subject for a prize competition of essays has just been announced by the Dutch Scientific Society in Harlem. It is a "Critical review and exhaustive description of the different kinds of bacteria contained in drinking water before and after its filtration through sand, and of the methods of determining the characteristics of every kind." The successful competitor will receive a gold medallion or 150 Dutch gulden. The judges will award an extra prize of 150 Dutch gulden if they consider the successful competitor worthy of it. All competitive essays must be filed with the Society's secretary before January 1, 1890, and must be written in the French, Dutch or German language.

BOSTON AND NEW ENGLAND.

— The annual festival in aid of the Carney Hospital will be held in Music and Bumstead Halls, the last Thursday of October next.

— A case is reported from one of the suburbs of Boston, in which a young man suffering from typhoid fever, in his delirium shot and killed his nurse, a woman fifty years of age, and tried to shoot one of his relatives as well. A revolver had, it seems, been left where he could get at it. In the present season of typhoid prevalence too great care cannot be taken to watch with unceasing vigilance patients who are, or are liable to become, delirious from this cause, and to keep them away from any opportunities of doing harm, in a sudden frenzy, to themselves and others.

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Miscellany.

AN EXTRA-UTERINE PREGNANCY DATING THIRTY-THREE YEARS.

M. Tarnier presented recently before the *Académie de Médecine*, says the Paris correspondent of the *Medical Press*, a woman, who had an extra-uterine pregnancy since 1856. This pregnancy arrived at the full period, the beating of the fœtal heart being plainly felt. The accoucheur having diagnosed the exact condition of the case, asked the advice of the late Paul Dubois as to a prompt intervention. The latter did not approve of an operation, counselling to leave matters as they were. At the end of a few days the fœtal heart seemed to have stopped, and the pains became much less intense, and finally disappeared completely. The woman returned to her usual duties. In 1859 she consulted the renowned surgeon, Nélaton, but he also refused to interfere. Her present condition is as follows: Beneath the umbilicus an extremely hard tumor is felt divided into two parts, one representing the head, the other the feet of the fœtus. To the touch it is not painful, and the woman seems not to suffer any inconvenience from its presence.

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THE INSPECTION OF THERMOMETERS.

At the thermometric bureau of the Yale College Observatory, during the last year, the comparison of thermometers has continued to be made by Mr. C. B. Peck, says *Science*. The number received for verification during the year ending June 1, 1889, was 7,475, being 249 in excess of the preceding, the maximum year. It is perhaps well to call public attention to the fact, not new, but continually overlooked, that the most accurate thermometers may be made to give false testimony by misinterpretation of their language. Although every certificate issued from this observatory, for other than clinical thermometers, contains a statement of the only conditions under which the correction therein given can be truthfully applied, they are continually called upon to explain, especially in the case of high-temperature thermometers, that, when only the bulb is immersed in a liquid of high temperature, the indicated temperature is too low by an amount depending upon the number of degrees of the mercury in the cooler stem and the difference between the temperatures of the bulb and stem. They have been called upon to show frequently that this error, which is independent of any correction due to the thermometer, may be as much as eight or nine degrees in the case of high temperature oils, as their temperatures are generally measured. A simple remedy for this indefiniteness of measurement would seem to be a special form of thermometer, in which nearly all the mercury should be immersed. Of the same nature is the correction of possibly 0.1° to be applied to clinical thermometers of the "Indestructible Index" form, when the detached column of mercury constituting the index is quite long (expressed in degrees), and is read after removal to a much cooler atmosphere; but the probable error on this account does not exceed the probable error of reading.

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CHINESE OBSTETRIC CUSTOMS AND SUPERSTITIONS.

Dr. A. M. Fielde writes interestingly on facts and superstitions concerning pregnancy and parturition as observed at Swatow, China, in the *Philadelphia Medical News* for August 24th.

Nearly all the Chinese women maintain a sitting posture during labor and delivery. A few are unable thus to bring forth the child, and these are called "recliners."

The umbilical cord is never divided until after the emergence of the placenta, because it is supposed that this would cause the contents of the womb to rise and remain among the internal organs, causing speedy death. After the appearance of the placenta, the cord is tied by a thread, about one inch from the umbilicus; a loop is made by bringing the distal portion toward the body; a second knot is tied securely upon the first over the double cord, "to prevent the entrance of wind," and the cord is then cut near the second knot. The part of the cord left with the placenta is not tied.

If there is much delay in the expulsion of the secundines, various methods are pursued in assisting the patient. The mother-in-law or midwife goes behind the house in which the patient lies, raps smartly with a carrying-pole on the wall, and shouts, "Is it out yet?" An assistant responds from inside the house, "It is out." This performance is repeated, with short intervals, until the desired result is effected.

Another method of hastening the expulsion of the afterbirth is to have the patient lean over a horizontal bar, supporting herself partially upon her hands. This sometimes starts the adherent placenta, but is discomforting to the attached infant.

Some midwives insert the hand and detach the placenta, but mothers greatly fear this operation. It is asserted that one woman had her liver pulled out by the attending midwife, and consequently died. Native male physicians are under no circumstances called in cases of childbirth.

A girl that is born face downward, or one that is guilty of micturition or defecation immediately after birth, is straightway smothered, because of a superstition that such a child would be injurious to its parents.

A pregnant woman is advised not to handle edged tools. If she does so, her offspring is likely to lack a finger or a toe, or to have a harelip or a split ear.

Two pregnant women will not sit together on the same bench. As each woman hopes that her child is a male, and as it is thought that there may be an occult exchange of sexes between embryos that are brought into vicinage, it is considered wise to avoid the risk of having the supposed masculine tenant of the womb superseded by a female.

If a child has been touched by a pregnant woman, and sickens soon afterward, its mother winds a skein of silk made up of threads of five colors around a potato and roasts the potato in ashes. If the silk is burned during the process of roasting, it indicates that the ailment was not caused by the touch of the pregnant woman. But if the silk is not burned, as sometimes happens, then the mother of the injured child throws the potato over her house, and it is believed to produce a miscarriage in the woman who has caused the disease, while the sick child recovers.

Many men have purses made by women approaching confinement, hoping that the woman's plethoric condition will be mystically reproduced in the money-bag!

◆

BLINDNESS IN ENGLAND.

The number of the blind in the United Kingdom, according to the last census, was 32,296, says the *London Times*, being at the rate of 879 blind persons per million of the general population, as compared with 950 in 1871, 964 in 1861, and 1,021 in 1851. The decrease in blindness would thus appear to be gradual but steady, even allowing for the fact that many who have very defective sight and are practically blind object to return themselves as such. The number of those of school age in England and Wales, is 1,710, or one-thirteenth, a surprisingly small proportion, which points to the fact. well known to specialists, that blindness, as a rule, supervenes in later life, the average age of the blind being forty-nine. Their general condition has been much improved of late years, owing to the prevalance of more enlightened notions and the increase of special institutions. But the Commissioners remark that, in spite of the large charitable funds and philanthropic efforts devoted to their welfare, they feel convinced much may be done to better the condition of the blind and render them more independent of charitable aid than at present.

Accidents from flying pieces of stone or chips of metal are accountable for 58 per cent. of injuries to the eye, and in the case of 4 to 4½ per cent. of such accidents the sympathetic inflammation of the remaining eye, which so often sets in, leads to total blindness. Shuttle accidents, formerly very frequent, were diminished by the introduction of shuttle guards, and the number of cases at the Royal Eye Hospital, Manchester, decreased from twenty-one in 1884 to nine in 1885. Strong protective glasses of talc or mica or fine wire goggles are a valuable safeguard against such calamities, and early surgical treatment is of high importance. Granular ophthalmia in badly-ventilated and badly-lighted dwellings is another cause, but with proper sanitary precautions this is preventible, and during the recent occupation of Egypt no loss of sight from ophthalmia occurred among our troops, owing to the excellent care exercised by the medical staff.

One of the most fruitful causes of blindness is the inflammation of the eyes of newly-born infants, and the Ophthalmological Society estimated that 30 per cent. of the inmates of the institutions, and 7,000 persons in the United Kingdom, had lost their sight from that cause. Various specifics are mentioned by the Commissioners, but they all seem to depend chiefly for their success on prompt application.

◆

THE TREATMENT OF LACERATION OF THE CERVIX BY THE OBSTETRICIAN.

In the Obstetrical Section of the American Medical Association, at its recent meeting, Dr. Henry C. Coe read an important paper on the above subject, in which he remarked, as reported in the *American Journal of Obstetrics*:

It is common to hear patients abuse the accoucheur for lesions resulting from parturition, for the cure of which they are obliged to consult the gynecologist. The gynecologist himself is not always prompt to defend his *confrère*. Perhaps it is because in many instances he cannot conscientiously do so. It is not the purpose of this paper to enter into a discussion of the question of actually preventing serious lesions of the genital tract by proper attention during parturition. There is great difference of opinion as to the percentage of lacerated cervices in which the tear might have been prevented. Of course the prophylaxis can usually be observed only where the accoucheur himself performs some manipulation within the os. In such cases, as well as in rapid labors and occipito-posterior positions, we should be on the lookout for laceration of the cervix, and be ready to treat it when it occurs. The tendency of scientific obstetricians now is to leave the genital tract as far as possible alone after parturition, on the same principle that the surgeon relies upon his antiseptic details during the operation and does not disturb the dressing as long as there is no rise in temperature. We may go to the other extreme. The "antiseptic pad" of Garrigues has led to abuses in the way of non-interference where local examination and treatment were urgently indicated. In our anxiety to avoid "meddlesome midwifery" we may make too light of lesions that are really serious. The accoucheur should never, in his exultation at having successfully terminated a difficult case of labor, lose sight of the fact that while the patient may forget that he saved her life, she can never forget or forgive his making light of a laceration of the cervix or perineum for which she must undergo a subsequent operation. Whenever we have reason to suspect that a laceration of the cervix has occurred, we should look for it and treat the case accordingly. The treatment may be immediate or secondary.

(1) *Immediate.* — In a small number of cases (version or instrumental delivery) the cervix is so deeply torn that the hæmorrhage from the circular artery is sufficiently dangerous to threaten. Here prompt action is necessary. One or two deep wire sutures should be introduced. The practice of introducing tampons, giving astringent injections, etc., under these circumstances is to be condemned. Follow the ordinary surgical rule — to ligate the severed artery.

(2) *Secondary* (*or subsequent*) *Treatment.* — Do not attempt to repair the laceration by sutures, either at the time the laceration occurs or during the puerperal month. Wait until involution has proceeded — at least three months. Rely on perfect cleanliness, anti-

septic vaginal injections, and iodoform suppositories. Local applications to the torn cervix during the puerperal month are reprehensible. Keep the patient in bed longer than usual. Be on the watch for septic infection, especially the insidious form of parametritis. When the patient goes about, support the uterus with a pessary if it remains large and tends to sag downward.

As a result of this treatment, many cases of extensive lacerations of the cervix heal during the puerperium. References to author's experience in private and hospital practice and Dr. Emmet's views confirmed this.

Conclusion. — We are still far from realizing the scope of preventive medicine. No reason why such a large proportion of female ills should originate from what we denominate a "physiological process." Nature is kind, but we sometimes trust her too much. It should be the aim of the obstetrician to forestall the gynecologist. Allusion has been made to only one puerperal lesion, but how many more serious troubles (salpingitis and oöphoritis) might be avoided by greater care of the woman during and after labor? The subject is not a new one, and the author merely seeks to reawaken interest in it. The general practitioner should feel his responsibility more. It should be his aim to look beyond immediate results to those more remote. His present triumphs should not be bought at the expense of future and well-merited blame.

Correspondence.

[From our Special Correspondent.]

PARIS LETTER.

Paris, August 16, 1889.

Mr. Editor, — That most important question anent the marriage of syphilitic subjects has been very ably treated of by Dr. Langlebert, Jr., the well-known syphilographer. He is far from the opinion of some medical men, who would interdict the marriage of all syphilitic subjects. Supported by the statistics of Diday and the long experience of his father, who is also a well-known syphilographer, he proposes certain rules by which, if acted upon, a syphilitic subject may marry without any fear of seeing his progeniture suffer from his antecedents. It is, of course, understood that the patient should not be the subject of contagious accidents. If he is affected with tertiary accidents, and consequently non-contagious, these accidents should not result in any persistent organic decay. A certain time should be allowed to elapse from the commencement of syphilis and the appearance of the last specific accidents. According to the statistical researches of Diday, for severe syphilis, the longest period that elapsed between two successive eruptions, was one hundred and thirty-two days. Dr. Langlebert admits that a person who, having had a slight attack of syphilis, properly treated during fifteen or eighteen months, and passed one year without being affected, may be considered cured. However, he would still recommend, as a test, another year; and when the marriage is decided upon, he would exact that the patient be again submitted, *ante nuptias*, to a specific treatment of two or three months. These rules appear simple enough, but some medical men affirm that syphilitic subjects may have fresh accidents after a more considerable time.

To this, Dr. Langlebert replies, that these accidents are not contagious, and consequently cannot be transmitted to the wife. Moreover, in a note previously published, the author admits that the father cannot himself alone transmit syphilis to his children; the children have nothing if the mother had not been previously infected. It is much more rare that a syphilitic woman desires to contract marriage. In this case, Dr. Langlebert admits that the absolute interdiction should be the rule.

In connection with this subject, I may here give the summary of a clinical lecture recently delivered by Dr. Mauriac, at the Hôpital du Midi, a hospital for venereal affections in the male sex. To the question, whether a man once affected with syphilis can marry without any risk of infecting his wife, Dr. Mauriac replies, that it is prudent to wait a more or less long time; and he does not think, that, as a general rule, a syphilitic man should be condemned never to marry. He should, however, be advised not to marry before the third year which follows the appearance of the primary chancre, or, at any rate, never before the completion of two years, and then only on the condition that the patient had been submitted to the usual anti-syphilitic treatment. The interdiction should be absolute when the chancre has assumed a phagedenic character, or when the organism is considerably damaged by the disease. In these conditions marriage should be postponed until cure, or the disappearance of the accidents should take place. When the chancre is of a mild type, when there are only slight secondary lesions which yield to the influence of treatment, the patient may, without danger, contract marriage eighteen months or two years after. As regards the treatment of syphilis, Dr. Langlebert, with his father, thinks that mercury is *the* specific which is certain and infallible against the accidents of the secondary period, but he recommends that this medicament should be given only during the existence of the eruptions, and always in small doses. He even attributes to a chronic mercurial intoxication a certain number of accidents which other medical men attribute to cerebral syphilis, — cephalic, tremors, contractures, clonic convulsions, epilepsy, hemiplegia, locomotor ataxia (in certain cases), and particularly in intellectual disorders. The author is far from adopting the extreme hydrargyrism of Professor Fournier. He preferably recommends the administration of mercury by the stomach, frictions and subcutaneous injections being reserved for certain grave accidents, ocular or cerebral, against which the rapidity of the therapeutic action is the only condition of success. The duration and the resumption of the mercurial treatment will be measured by the duration and the returns of the secondary accidents of syphilis. Corrosive sublimate should be preferred to the protiodide of mercury. It should be given preferably in small doses, as it then acts as a tonic and reconstituent; in large doses, it is debilitating and dangerous for the nervous centres. The iodide of potassium is, on the contrary, the veritable specific for the more chronic stages of syphilis. It is advisable to commence its use about the fifth or sixth month. The average dose should be from one gramme to one gramme and fifty centigrammes per day. This iodide medication should be continued for about eighteen months, with periods of rest sensibly equal to the periods of treatment. At the end of these eighteen months the treatment of syphilis may be considered as completed, although it may still be prudent to resume the iodide of potassium for two or three months in the three consecutive years.

At a recent meeting of the Academy of Medicine, Dr. Dumontpallier read a note on a new treatment of endometritis, by the introduction, into the uterine cavity, of sticks of the chloride of zinc which are rendered supple, so that when once in the cavity, they become bent in all directions. But before the introduction of these sticks, the vagina is washed out with a solution of carbolic acid, of one per cent.; then the hysterometer, previously rendered aseptic, is introduced into the uterine cavity, to ascertain the direction of the latter. These sticks are left in the uterus; then after washing out the vagina, a plug is introduced, but the latter is not indispensable. In general, the slough produced by the caustic is expelled in about five days after its application. Vaginal antisepsy is strictly carried out, and the cure is effected two days after the escape of the slough. There has never been any narrowing of the uterine cavity, and menstruation was soon restored. The author considers this method very inoffensive; for out of one hundred cases, there were ninety-six cures without complications, and four cures after complications due to imprudence committed by the patients. A certain degree of pain was caused by the caustic, but this soon became tolerable; but in many cases there was no pain. The general phenomena were *nil*, and there was no fever. From twenty-four to thirty-six hours after the cauterization a slightly rose-tinted discharge is observed, which precedes the escape of the slough. The vagina is then washed out with the liquor of Van Swieten.

DR. A. RICHET.

This gentleman is Professor of Clinical Surgery at the Hôtel Dieu; but he is now only nominally attached to this post, as for the last three years he has lived retired in his country house near Toulon, and has been replaced by *agrégés* of the faculty. This year he has been replaced by Dr. Kirmisson, a very distinguished surgeon. Dr. Richet was considered a very good surgeon of his time. He is now almost an octogenarian, and his doctrines are regarded as out of date. It must, however, not be forgotten that, about thirty years ago, Professor Richet was looked upon as one of the leaders in French surgery. His "Practical Treatise of Surgical Anatomy" opened out a new line, rendered the most eminent services, and obtained for the author a European reputation. This work, or as he proudly termed it, "The Book," is almost obsolete, as its contents are not altogether in keeping with the progress of the day. It will, nevertheless, be a lasting memorial to his fame. Notwithstanding his age, he had a certain amount of vigor, both mental and physical; but since the death of his wife, which took place about three years ago, under most painful circumstances, he gradually broke down and felt that he could no longer continue the active functions of his office. Before retiring, however, he has had the satisfaction of seeing his son, Dr. Charles Richet, grow to manhood, become successively Doctor and *Agrégé* of the Faculty of Medicine, and now become his colleague, as he is Professor of Physiology at the Faculty of Paris, which post he fills with great talent and honor.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 17, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	751	340	28.73	15.47	20.41	1.95	3.38
Philadelphia	1,040,245	389	192	25.48	9.62	15.86	4.42	3.12
Chicago	830,000	482	284	36.96	7.98	24.78	4.83	2.94
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	193	104	35.64	9.18	27.00	3.78	1.08
St. Louis	450,000	154	74	22.10	5.85	10.40	3.35	5.20
Boston	413,567	203	96	29.40	9.80	19.60	4.44	2.94
New Orleans	250,000	93	33	23.76	14.04	15.12	2.16	2.16
Cincinnati	225,000	—	—	—	—	—	—	—
Washington	225,000	113	54	26.70	22.25	18.69	1.78	1.78
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	54	27	24.05	7.40	16.65	—	—
Portland	40,000	21	6	23.80	19.04	23.80	—	—
Worcester	78,292	29	14	55.20	3.45	55.20	—	—
Lowell	71,518	47	26	38.34	8.52	25.56	2.13	8.52
Cambridge	65,552	32	15	40.69	12.52	34.43	3.13	3.13
Fall River	62,647	44	30	40.86	6.81	38.59	2.27	—
Lynn	53,334	28	—	42.84	10.71	35.70	3.57	3.57
Springfield	40,731	19	9	21.04	15.78	5.26	—	5.26
Lawrence	40,619	33	17	56.66	—	29.97	3.33	23.33
New Bedford	37,253	20	11	30.00	5.00	25.00	5.00	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	14	10	42 84	—	42.84	—	—
Brockton	28,813	8	3	37.50	—	25 00	12.50	—
Chelsea	28,167	11	2	18.18	18.18	18.18	—	—
Haverhill	26,058	10	4	50.00	—	40.00	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	6	5	16.66	33.33	—	16.66	—
Newton	21,553	11	8	54.54	—	27.27	—	18.18
Malden	19,774	13	10	30.66	7.69	23 07	—	—
Fitchburg	17,534	5	1	20.00	—	20.00	—	—
Waltham	17,332	2	0	—	—	—	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	11	4	9.09	18.18	9.09	—	—
Quincy	13,728	6	3	66.66	—	33.33	—	33.33

Deaths reported 2810: under five years of age 1382; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 862, consumption 596, acute lung diseases 137, diarrhœal diseases 596, diphtheria and croup 90, typhoid fever 87, whooping-cough 33, scarlet fever 19, malarial fever 18, cerebro-spinal meningitis 12, measles 4, erysipelas 2, typhus fever 1. From whooping-cough, New York 12, Chicago and Boston 5 each, Philadelphia and Springfield 2 each, Baltimore, St. Louis, Washington, Haverhill, Gloucester, Newton and Malden, 1 each. From scarlet fever, Chicago 6, Philadelphia and St. Louis 4 each, Baltimore and Washington 2 each, Lowell 1. From malarial fever, New York 6, Baltimore, New Orleans, and Charleston 4 each. From cerebro-spinal meningitis, Chicago 6, New York 3, Washington 2, Philadelphia 1. From measles, Chicago 3, New York 1. From erysipelas, New York and Chicago 1 each. From typhus fever, Philadelphia 1.

In the 28 greater towns of England and Wales, with an estimated population of 9,555,406, for the week ending August 3d, the death-rate was 21.0. Deaths reported 3763: infants under one year of age 1361; acute diseases of the respiratory organs (London) 182, diarrhœa 578, measles 79, whooping-cough 69, diphtheria 65, scarlet fever 59, fever 41.

The death-rates ranged from 14.1 in Brighton to 42.6 in Preston; Birmingham 23.1; Bradford 20.9; Hull 21.8; Leeds 23.2; Leicester 21.5; Liverpool 23.4; London 18.4; Manchester 27 0; Nottingham 19.7; Sheffield 20.7; Sunderland 28.8.

In Edinburgh 17.2; Glasgow 20.5; Dublin 20.7.

The meteorological record for the week ending Aug. 17, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Aug. 17, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...11	29.94	68.0	75.0	61.0	70	63	66.0	W.	W.	18	4	C.	C.		.0
Monday,..12	30.08	64.0	72.0	56.0	64	80	72.0	N.W.	W.	8	10	C.	C.		.0
Tuesday,..13	30.14	64.0	68.0	6 .0	79	82	80.0	S.W.	S.W.	8	4	O.	O.	1.05	.T
Wednes...14	29.90	64.0	68.0	60.0	97	72	84.0	N.E.	N.	13	9	R.	O.	14.25	1.48
Thursday,.15	29.83	58.0	61.0	56.0	94	89	92.0	N.E.	S.	8	4	O.	O.	0.10	.T
Friday,....16	29.91	65.0	74.0	56.0	83	63	73.0	W.	W.	8	7	F.	C.	.0	.0
Saturday,.17	29.99	67.0	77.0	57.9	70	65	65.0	W.	W.	8	9	C.	C.		.0
Mean for Week.															

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 19, 1889, TO AUGUST 23, 1889.

Leave of absence for one month is granted Lieutenant Colonel **Joseph C. Baily**, surgeon U. S. A.; Medical Director, Headquarters Department of Texas, San Antonio, Texas, August 17, 1889. S. O., 54, Headquarters Department of Texas.

Commanding officer at Jackson Barracks, Fla., telegraphs the adjutant general of the army, that Major Harvey E. Brown, surgeon U. S. A., died at Jackson Barracks, August 20, 1889, at 1.40 o'clock, P. M.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 24, 1889.

W. K. Scofield, medical inspector. Detached from the "Lancaster."

C. T. Hibbett, past assistant surgeon. Detached from the "Lancaster."

C. H. White, medical inspector. Ordered to "Pensacola."

F. A. Hesler, past assistant surgeon. Ordered to "Pensacola."

L. W. Curtis, past assistant surgeon. Ordered to the "New Hampshire."

W. H. Jones, surgeon. Detached from the "Pensacola." Placed on waiting orders.

L. Von Wedekind, assistant surgeon. Detached from the "New Hampshire" and ordered to the "Pensacola."

DEATH.

In Longmeadow, Mass., August 20th, Thomas L. Chapman, M.D., M.M.S.S.

SOCIETY NOTICES.

American Dermatological Association. — Programme of the Thirteenth Annual Meeting, to be held at 19 Boylston Place, Boston, Mass., September 17, 18 and 19, 1889.

First Day. — Morning Session at 10.30, A. M. Papers: Address by the President, Dr J. E. Graham; (1) Clinical Notes on Herpes Zoster, Dr. F. B. Greenough; (2) Microscopical Studies of Malignant Tumors of the Skin, Dr. C. Heitzmann; (3) Clinical Observations on Injections of Insoluble Mercurial Salts in Syphilis, Dr. H. G. Klotz. Afternoon Session at 3.30, P M. Papers: (4) Contribution to Dermatological Bibliography, Dr. G. T. Jackson; (5) Clinical Notes on Sycosis Capillitii, Dr. J. Zeisler; (6) Two Cases of Eczema Mercuriale, Dr. J. F. Shepherd; (7) A Case of Urticaria Pigmentosa, Dr. H. W. Stelwagon.

Second Day. — Morning Session at 10.30, A. M. Report of Committee on Statistics. Report of Committee on Nomenclature. Papers. (8) A hitherto undescribed form of New Growth of the Vulva, Dr. R. W Taylor; (9) Observations on a disputed point in Infantile Eczema — Some general suggestions in Dermatological Therapy, Dr. S. Sherwell; (10) Additional Cases of Dermatitis Palmaris and Plantaris, Dr. L. D. Bulkley. Afternoon Session at 3.30, P. M. Papers: (11) Dermatitis Papillaris, Dr C. Heitzmann; (12) On the Occurrence of Prurigo in America, Dr J. Zeisler; (13) On the alleged tolerance of the Iodides in Syphilis, Dr. H. W Stelwagon; (14) Relapse of Pemphigus Foliaceus after twelve years' quiescence — Case of Impetigo Herpetiformis, Dr. S. Sherwell.

Third Day. — Morning Session at 10, A. M. Demonstration of Cases. Retirement of Old and Induction of Newly Elected Officers.

All physicians are cordially invited to attend.

G. H. Tilden, M.D., *Secretary.*

American Pædiatric Society. — Organized in Washington, D. C., September 18, 1888. Preliminary Programme.

The meetings will be held at the Army Museum Building, Washington, D. C., on the 20th and 21st of September, 1889. One of the afternoon meetings will be held in the Johns Hopkins Hospital, Baltimore, Md., by invitation of the Director of the Hospital.

Papers. — Address by the President. A. D. Blackador, Montreal: Notes on a case of Ataxia in a child of ten years. W. D. Booker, Baltimore: A study of some of the Bacteria found in the dejecta of infants afflicted with Summer Diarrhœa (second communication). Dillon Brown, New York: Noisy Respiration. A. Caillé, New York: Prolapsus Recti due to large stone in the bladder, in a girl three years old; Two cases of Nystagmus associated with choreatic movements of the head in rhachitic babies; Septic Diphtheria with unusual sequelæ; Personal Prophylaxis in diphtheria. Charles W. Earle, Chicago: Subcutaneous Emphysema in children; The necessity of prolonged rest after some attacks of Diphtheria; Two cases of Carpo-pedal Contraction. J. Henry Fruitnight, New York: The treatment of Scarlet Fever and its complications. Francis Huber, New York: Spurious Meningocele; Double Empyema. A. Jacobi, New York: Aneurism in early life. John A. Jeffries, Boston (by invitation): A contribution to the Summer Diarrhœas of Infancy. H. Koplik, New York: Tuberculosis of the Testis in childhood. Thomas S. Latimer, Baltimore: Cases of Spastic Paraplegia. I. N. Love, St Louis: Scarlet Fever. Arthur V. Meigs, Philadelphia: The Artificial Feeding of Infants. W. T. Northrup, New York: ——. J. O'Dwyer, New York: Case of Diaphragmatic Hernia, with operation; The apparent physical contradiction involved in the reinflation of a collapsed lung while an opening remains in the pleural sac. William Osler, Baltimore: A case of simple Muscular Atrophy of the facio-scapulo-humeral type; Cerebral Sclerosis in children. A. Siebert, New York: Diphtheria. J. L. Smith, New York: ——. H. N. Vineberg, New York: Some practical points on diagnosis and treatment of Malaria in children. V. W. Vaughan, Ann Arbor: ——.

A. Jacobi, *President.*

T. L. Latimer, *Chairman Com. Arrangements.*
W. D. Booker, 851 *Park Ave., Baltimore, Md.*

BOOKS AND PAMPHLETS RECEIVED.

Death from Electrical Currents. Reprint. New York. 1889.

Yellow Fever. A New Treatment. A Forecast for 1889. New York. 1889.

Note on Nomenclature. By Dr. Donald Macalister. Co-Editor of "The Practitioner."

Roosevelt Hospital, New York, Seventeenth Annual Report from January 1, 1888, to December 31, 1888.

The Modern Frankenstein. By George M. Gould, M.D Chicago: The Open Court Publishing Co. 1889.

Annual Announcement of the New York Polyclinic and Hospital. A Clinical School for Graduates in Medicine and Surgery. Session of 1889-1890

Original Articles.

SOME REMARKS ON TYPHOID FEVER, WITH AN ANALYSIS OF ONE HUNDRED AND TWENTY-NINE CASES TREATED IN HOSPITAL, AND SPECIAL REFERENCE TO RELAPSE.[1]

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Having exchanged a summer for a spring service, and being consequently likely to have fewer cases of typhoid fever to treat in hospital, in coming than in past years, I determined to analyze, with reference to certain points, all the cases of this disease which entered my wards during my term of service in the years 1886, 1887 and 1888. The number of cases is not large enough to allow the deduction of any very general conclusions, and yet this analysis may be compared with those of others who deal with larger figures, may perhaps contribute in some small degree toward the structure of our complete knowledge of the subject, and has certainly proved interesting and instructive to me. The fact that the cases were nearly equally distributed between three successive years, diminishes somewhat the sources of error which may be connected with the study of the cases of a single year; and they were also under the care of the same person, in the same institution, and were treated on precisely the same general plan, — essentially the so-called expectant.

With very few exceptions the cases were in adults. Abortive cases have not been counted among the number, which includes only those to the diagnosis of which no reasonable doubt can attach. I find it difficult to understand how anybody who has studied the subject, and has had also a moderate experience, can deny that typhoid fever may abort, the intestinal lesions probably never reaching the stage of necrosis and ulceration. The characteristic lesions are not accessible to direct sight and touch in all cases, fatal and non-fatal alike, as they are in the more purely eruptive specific fevers, the existence of extremely mild and abortive cases of which is not questioned. There are, moreover, a sufficiency of house and local epidemics recorded in which some of the exposed individuals went through the fully developed disease, or died during its progress; while others, presenting prodromal and initial symptoms the same in kind, and of equal, less, or even greater severity, were apparently quite well again within a week, more or less. Indeed, it seems to me that there is absolute proof that typhoid fever may exist and even prove fatal, without the presence of fever at any time, with even sub-normal temperature throughout. Strube,[2] in a typhoid epidemic among the German troops besieging Paris, was struck by the low range of temperature which characterized the outbreak. He tells us that fourteen cases had a normal or subnormal temperature throughout. In one of these, the first rise was co-incident with suppuration about the rectum, which helped to carry the man off. At the autopsy, fully formed and typical typhoid lesions were found. In these cases all the usual symptoms, including even furious delirium, were present. Fraentzel,[3] in charge of another military hospital at the same time, was also struck by this peculiarity of the temperature. Again,[4] a soldier enters a hospital in India for eczema, is free from fever or other general symptoms, dies suddenly, and is found to present typhoid lesions on the autopsy table. These considerations are of importance in estimating the general mortality rate of the disease. Excluding, then, all abortive or otherwise doubtful cases, those cases are included which proved fatal within a few days of admission, the patients entering in a desperate condition.

I. The number of cases, by years, with the yearly and total mortality rate, is as follows:

Table I.

	1886.	%	1887.	%	1888.	%	Total.	%
Number of cases,	39		45		45		129	
Recovered,	35	89.7	42	93.33	41	91.2	118	91.63
Died,	4	10.3	3	6.67	4	8.8	11	8.37

A mortality rate of 8.37 % is not high, except as compared with the recent and large statistics of Brand and his followers. Hæmorrhage occurred in two of the fatal cases, but in only one of these it was sufficient in itself to excite alarm. Cheyne-Stokes respiration was noted in two; in a like number, broncho-pneumonia played an important part; in one, pericarditis was a complication; in one, general convulsions closed the scene after the fever had nearly run its course; one death took place during a relapse, the patient being fifty-four years of age; in four, deaths occurred within a week after entrance. In none of the fatal cases was unusually or continuously high fever a feature.

II. The state of the bowels, the occurrence of epistaxis, and the existence of splenic enlargement.

Table II.

	1886.	%	1887.	%	1888.	%	Total.	%
(a) *Bowels.*								
Diarrhœa,	11	28	6	13	15	33	32	25
Constipation.	17	44	14	31	16	35+	47	36
Alternating,	4	10	16	37	11	24+	31	24
Regular,	7	18	9	19	3	7	19	15
(b) *Epistaxis.*	18	46	14	31	16	35	48	38
(c) *Spleen.*								
Area of dulness,	26	67	27	57	16	35	68	53
Organ felt,	9	23	15	33	9	20	33	25.5

This table shows that in 51 % of all the cases there was no diarrhœa at any time; that in 36 % the bowels moved only after enemata, which, in these cases, I order every second day. In the cases included under the heading "alternating," looseness of the bowels was only a transitory feature; and in only 25 % was this symptom really prominent, a smaller percentage than what is said in the text-books would lead one to expect.

Splenic enlargement, I cannot help thinking, is not an absolutely constant accompaniment of typhoid. Of course there are cases in which a rigid or tense abdominal wall presents insuperable difficulties to satisfactory palpation; there are those in which tympanites completely masks the splenic dulness; while there are, again, others in which fæces in the descending colon may on one or two examinations give rise to a dulness simulating that due to splenic tumor. But I feel sure that I have watched a fair number of cases in which I should have been able to feel the organ if enlarged, and failed to do so in repeated examinations. Indeed, I never feel sure of enlargement unless I can feel the organ descend on deep inspiration.

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[1] Read before the Boston Society for Medical Improvement, May 27, 1889.

[2] Berliner Klin. Wochen., 1871, p. 357.

[3] Zeitschrift der Klin. Med., Bd. II.

[4] Dublin Journal of Medical Sciences, July, 1887.

No analysis of the frequency of rose spots, delirium, or tenderness and gurgling in the right iliac fossa was made.

III. The frequency and character of the complications and sequelæ, other than relapse, is shown in

TABLE III.

Intestinal hæmorrhage	7	5.4%
Venous thrombosis (femoral)	9	7
Furunculosis	10	7.7
Otitis media	3	2.3
Parotid or submaxillary swelling (in no case suppuration)	4	3
Periostitis	2	
Lobar pneumonia	2	
Melancholia	1	
Hemiplegia (embolic, early)	1	
Neuritis	3	2.3

The above list calls for no special comment; perforation is conspicuous by its absence.

IV. The next table shows the frequency of relapse, the significance attached by me to which term will appear further on.

TABLE IV.

1886.		1887.		1888.		Total.	
7	17.66%	8	17.77%	6	13.33%	21	16.28%

It is not an easy matter to ascertain the frequency with which relapse is encountered by leading writers on typhoid, owing to the lack of a uniform definition of the term. The Germans, as a rule, class under this head only those secondary attacks which are preceded by an interval of apyrexia of varying length; recrudescence denoting a secondary attack which begins before the complete defervescence of the primary attack. English writers, on the other hand, notably Pearson Irvine,[5] the author of the best monograph on the subject in our language, with which I am acquainted, uses "relapse" as denotative of the renewal of the complete typhoid process, irrespective of the time of its onset; while the term "recrudescence" is applied to the pyrexia, more or less transitory, attributable to a complication, sequela, or an error in diet. In other words, fever recrudesces; typhoid fever relapses. It seems to the writer that Irvine's definition is the better of the two; a relapse is a relapse, at whatever time it may begin, whether intercurrent or consecutive. It may be that in the former the fresh crop of bacilli starts from the intestinal tract directly; in the latter that the spleen or some other part has served as a sort of half-way house for the storage of potentially active bacilli which, again reaching the intestinal glands, reproduce their kind. This may be true, but is at present purely hypothesis.

Schmidt,[6] analyzing 561 cases, finds the percentage of relapse, in the English sense, to be 11.6 (intercurrent 1.8%); Ziemssen,[7] in 832 cases, finds consecutive relapse in 13%; Steinthal,[8] in 539 cases, in 7.5%. The event under consideration was, therefore, rather more frequent in my cases than in those of Schmidt, probably rather less so than in those of Ziemssen. By other authorities the frequency is set down as varying from 5 to 15 per cent. Ziemssen, following Gerhardt, thinks that relapse is to be expected if the splenic tumor does not subside with the subsidence of the fever of the primary attack. My experience has satisfied me of the truth of Irvine's observation, that a relapse may be so free from symptoms apart from the fever, which itself may be trifling, as to be entirely overlooked if temperature observations are omitted as soon as the primary fever ceases. It is, moreover, probable that a relapse may abort; may be of very short duration; may occur at such a period in the primary attack, may be overlain by a complication, or otherwise so obscured as to be extremely difficult, or even impossible, of recognition. In this analysis all doubtful cases have been thrown out.

Relapse occurred in twenty-one cases; in one of these it was repeated a second time; we have thus twenty-two secondary attacks for study.

(1) Intercurrent or consecutive.

In eleven the relapse began before complete defervescence, in eleven after; 50% in either case. By defervescence is implied the first normal evening temperature. This fact seems to me to show conclusively, if indeed the point needs any further demonstration, that we are now powerless to prevent relapse, and that errors in diet are in no way causative of it. In the great majority of my cases the relapse started without any change from the liquid, oftentimes exclusively milk, diet. This point seems to me worth insisting on, if for no other reason because the laity are still in the darkness with regard to it, which enshrouded us until comparatively recently. Constipation, nourishment unsuitable in kind or too large in amount, the excitement of a visit, or a number of other causes may produce a return or an exacerbation of fever; to produce a relapse there must be a re- or auto-infection.

(2) Interval.

In my eleven intercurrent relapses the renewal of the process took place from the third to the fifth week, but this is a point on which I do not lay much stress, as it is proverbially difficult, especially in hospital cases, to fix the onset of the disease. The apyrexial interval which separated the primary from the secondary attacks, in the eleven cases of consecutive relapse, is shown in the following table:

TABLE V.

1 day in 2 cases.
2 days in 4 cases.
3 days in 1 case.
6 days in 1 case.
8 days in 2 cases.
9 days in 1 case.

Of course there is a slight liability to error in fixing the date of onset, but it is very much less than obtains with the primary attack.

(3) Duration.

Of the twenty-one recoveries, — one patient, fifty-four years old, died on the eighth day of a relapse, — the duration of the secondary attack was as follows.

TABLE VI.

11 days in 1 case.
11 days in 1 case.
15 days in 2 cases.
16 days in 4 cases.
17 days in 3 cases.
19 days in 1 case.
20 days in 1 case.
21 days in 3 cases.
23 days in 1 case.
24 days in 1 case.
26 days in 1 case.
27 days in 1 case.
29 days in 1 case.

This gives an average of nineteen days, a period somewhat shorter than that belonging to primary attacks. This average duration corresponds closely with that which Irvine believes to represent the truth. Ziemssen and other German writers speak of relapses lasting four, five or six days, and their average duration is thus brought down to eleven to fourteen days. If abortive primary attacks take place there is certainly no reason why secondary attacks should not also abort. I believe that they may, but have excluded cases which might have been classed here, because I believe the clinical distinction between such very short relapses and some obscure complication, to be a difficult one, and my records are not as complete with reference to outbreaks of fresh rose spots and persistence or renewal of splenic tumor, as I could wish. The temperature curve alone may be sufficient for the diagnosis of a fully developed relapse; but other points must, it seems to me, be taken into account to establish the presence of an abortive relapse. The single death, a mortality of less than 5%, was in a consecutive attack. My limited experience does not bear out the German view that the intercurrent are much more severe and dangerous than the consecutive attacks. Ziemssen's mortality rate for the former is 15.5%, for the latter, 2.8%.

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[5] Relapse of Typhoid Fever, London, 1880.
[6] Deutsches Archiv. f. Klin. Med., 1888, Bd. 13, p. 127.
[7] Ibid., 1881 Bd. 31 p. 375.
[8] Ibid., Bd. [illegible] p. 357.

(4) Temperative curve.

This, according to Irvine, has in relapse two marked peculiarities: first, the maximum is reached with a striking, though not absolute, constancy on the fifth day; second, there is apt to be a decided fall on the eighth or ninth day, with a quick subsequent rise of some days' duration, before true lysis begins. An analysis of my cases, with reference to the first of these points, appears in

Table VII.

Maximum reached on fourth day in 5 cases.
Maximum reached on fifth day in 8 cases.
Maximum reached on sixth day in 5 cases.
Maximum reached on seventh day in 3 cases.
Maximum reached on eighth day in 1 case.

Thus in eighteen of twenty-two cases the fever reached its height on the fourth to the sixth day, and more often on the fifth than on any other one day.

With reference to the second point, my results do not correspond so closely to those of Irvine. In only six of my cases did the drop occur on either the eighth or ninth day; in some cases on the sixth; in more on the tenth or eleventh; in others no marked drop took place, but the fever terminated by an uninterrupted but gradual lysis.

Treatment. — As has been before indicated the treatment in the above cases was essentially expectant. In 30% no drug of any kind and no alcoholic stimulant was given at any time in the duration of the disease.

Table VIII.

	1886.	%	1887.	%	1888.	%	Total.	%
No medicine or stimulants,	9	23	14	31	15	33	38	29
Medicines, stimulants, or both,	30	77	31	69	30	67	91	71

Thus it will be seen that 29% of all the cases received neither drugs nor alcohol at any period of the disease. When it is too late to supply the deficiency I find that the analysis for the three years is not as complete as I could wish, with reference to the proportion of cases in which simulants alone, drugs alone, or the two in combination, were given. In 1888 33% had neither, 31% stimulants only, 35% both. The drugs most used were digitalis and cocaine for cardiac weakness — with the apparently prompt and marked effect of the latter in some cases I was much pleased; an opiate and the bromides for restlessness and insomnia; an astringent for excessive diarrhœa. In seven cases I gave a preliminary ten grains of calomel on entrance, followed by naphthalene, eighty grains daily, to see whether intestinal antisepsis could be secured, the disease aborted, or its course shortened. The number of cases is small, but the results were not such as to lead me to persevere. In two cases strangury resulted; and in one of these, hæmaturia. Two young men were admitted almost on the same day, with histories and symptoms clearly indicative of typhoid: one received the calomel and naphthalene, the other, owing to a misunderstanding, did not; both with equal promptitude aborted. My friend, Dr. G. L. Peabody, of New York, whose suggestion it was which led me to try this plan, tells me that his later experience has not justified the hope which his earlier experience encouraged. It has occurred to me that perhaps we can apply the principal of intestinal antisepsis with better results to the prevention of relapse, giving β. naphthol or some similar remedy, more or less of which passes unchanged through the canal. I propose to try this, and hope that some one with larger facilities than I am now likely to enjoy, may be willing to do the same.

The internal antipyretics I used a good deal in 1886, in primary attacks; scarcely at all in 1887 and 1888, only on the rarest occasions in relapses. I now give them only in the comparatively rare cases in which the fever in itself seems to interfere with the comfort of the patient. While we believed the continued range of such temperatures as we ordinarily encounter in typhoid to be productive of the nervous symptoms, as well as of the granular degeneration of the parenchymatous organs, particularly the heart, it seemed rational to adopt measures of one kind or another, the effect of which is to keep the temperature constantly within relatively safe limits. The knowledge which we have now, limited as it is, with regard to the formation and effects of the alkaloidal poisons produced in the living body, renders it, to say the least, highly probable that, in the influence of these compounds on the nervous centres, lies the cause of most of the grave symptoms and of the chief fatality of typhoid and some other processes. Whether we err here or not, that pyrexia is not the evil spirit we thought it to be, seems to be clearly shown, for instance, by Gläser's[9] analysis of 200 fatal cases of typhoid, out of 3000 treated in the Hamburg General Hospital. In only 8% of the fatal cases was the average temperature higher than that of the ordinary mild type of disease; and in none of the fatal cases were higher points reached than we all see in cases which terminate favorably. He shows, too, that in these Hamburg cases the duration of the fever was as innocent of the fatal result as its height. Here I can refer again to the reports of Strube and Fraentzel. The low temperatures which marked their cases has been already alluded to; but the following facts are also noteworthy: the symptoms in many were extremely severe, but these cases were, as a rule, of short duration, ending either in death or convalescence within two weeks. Fraentzel's mortality was 39% of 41 cases; Strube's was less, but reached 14.1% in the cases with a temperature of less than 102.2° F. while it was only 8.5% in those of higher range.

Brand and his followers, the most strenuous advocates of a method of treatment one effect of which is temperature reduction, while they bring ever stronger proofs of the beneficial effects of cold bathing, do not now attribute these effects to the temperature reduction as much as to the stimulation of the nervous centres and the deeper respiration which tends to prevent pulmonary complications. Brand[10] says that the difference between his method and the antipyretic is that his is directed against the process as a whole, while the other is only against a symptom. "The process causes the danger, not the temperature." And here I may add that the conclusion is forcing itself upon me that we must come to the cold water treatment in this country. Expense and trouble are not offsets to human life in the minds either of the profession or the public. One cannot read the writings of Brand, Juergensen, Ziemssen,[11] and others in Germany; of Bouveret[12] and other members of the Lyons school in France; or of such expositions of their results as have recently been printed in this country by Wilson,[13] Wood,[14] and Baruch,[15] without seriously questioning whether we are doing our whole duty by our typhoid patients. Contrast the following figures:

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[9] Deutsche Archiv. für Klin. Med. 1887, Bd. 41, p. 1.

Boston City Hospital,	1879-1888,	1846	cases,	mortality	13.98%
Mass. General Hospital,	"	969	"	"	17
Brand, cold bathing fairly strict,		5573	"	"	3.9
" " very "		1223	"	"	1

Not one of the twelve fatal cases in the last series came under treatment before the fifth day. These figures do not require further comment here.

The treatment in my cases was purely expectant, except that spongings with alcohol and water at a temperature of 60 – 70 F. was practised every two, three, four, six, eight hours, according to the degree of fever, 102.5 being generally considered an indication for the application. My mortality, 8.3%, is certainly not high; but the number of cases is relatively small, and a few bad ones would have raised the mortality materially.

AN UNCOMPLICATED CASE OF PROGRESSIVE OPHTHALMOPLEGIA EXTERNA, OR A SYMMETRICAL PARALYSIS OF THE EXTERNAL OCULAR MUSCLES.[1]

BY FREDERICK E. CHENEY, M.D.,
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THE patient, whose case I have to report, is a boy, thirteen years of age, of English parentage and birth. He first came to the Massachusetts Charitable Eye and Ear Infirmary, in March of the present year, during the service of Dr. Sprague. Ptosis was the only trouble complained of; and it was, in fact, the only defect of the eyes that had been noticed by himself or his friends. He was admitted as a house-patient a few days later, for operation, by which it was hoped to correct, in a measure, the faulty position of the lids.

The mother states that the eyes appeared perfectly natural at birth, and continued so until some time during his third year, when it was noticed that the upper lids drooped slightly over the fronts of the eyes. This drooping of the lids became more noticeable as the boy grew older, and continued to slowly increase until his ninth year, since when there has been no appreciable change.

There is no history of convulsions, headache, or injury, and with the exception of the usual diseases of childhood, he has always been well and strong. In view of the fact that a specific history is not unfrequently obtained in cases of this disease, it may be well to mention that the boy was vaccinated in his second year, and that soon after this quite an extensive eruption made its appearance. This soon disappeared, however, and was not accompanied or followed by other symptoms that would suggest specific inoculation. The family history is good: The mother has never had any miscarriages, and has given birth to four other children, three of whom are living, and are said to be perfectly healthy.

Examination. — The patient is found to be well-developed physically, and is bright and intelligent.

The ptosis is practically complete, on both sides — though the left is perhaps a little more marked than the right — and he is only able to separate the lids by bringing into action the occipito-frontalis muscle. By the action of this muscle, and by tilting the head backward, the lower half of the right and about one-third of the left pupil are exposed, so that he has little or no difficulty in seeing. On raising the lids the left eye is found to diverge slightly, and when he attempts to follow the movement of the hand with the eyes, symmetrical deficiency of motion is found in every direction; upward motion is almost entirely lost, downward is quite limited, and, although the inward and outward movements are fairly good, the borders of the cornea cannot be carried to either the outer or inner canthus, as they can when the internal and external recti muscles possess their normal form.

The pupils are moderately small, and react readily to light as well as to accommodation. He reads the finest print (Sn 0.5) at a distance of eight centimetres, which shows that there is no want of accommodation power. Diplopia is not complained of, but when questioned, he says that he sometimes sees double while looking at near objects. On raising the lids and asking him to look carefully at a white card at a distance of eighteen feet, I find that he sees it double, and it is made more noticeable when a colored glass is placed before one eye. Although there is some astigmatism, the sight is nearly up to the normal for distance, and is made quite so by the use of correcting glasses. Nothing abnormal is found in the transparent media, or fundus of either eye, and the fields of vision are not contracted in any direction, either for form or color.

Dr. Walton kindly made an examination of the boy's general muscular condition, and writes me as follows in regard to it: "I find no trace of muscular disturbance elsewhere; there is no fibrillary twitching, no atrophy, no weakness. His muscular system is everywhere unusually well-developed; the leg muscles being large, but not unnaturally so. All movements of head, trunk and extremities are normal. He gets up from the floor without using his hands. The tendon reflex is normal. The grasp by the dynamometer measures twenty in the left to sixteen in the right, to which I attribute no special importance."

Dr. Walton also suggests that iodide of potassium should be tried before operating. In accordance with which suggestion, beginning with five grains t. i. d., it

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[1] Read, by invitation, before the Boston Society for Medical Improvement, May 27, 1889.

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[10] Deutsche Med. Wochenschrift, 1887.
[11] Klinische Vorträge, II. 1. Leipzig, 1887.
[12] Lyon Medical, June 22, 1888.
[13] Annual of the Universal Med. Sciences, 1887 and 1888.
[14] Therapeutics, its Principles and Practice, 1888.
[15] N. Y. Medical Record, Feb. 16, 1889.

was rapidly increased to twenty grains t. i. d., and this was continued for a month without any noticeable change in the condition of the ocular muscles.

This case is undoubtedly one of uncomplicated, progressive ophthalmoplegia externa, and can be classed as one of the rarer forms of ocular paralysis.

The disease as first described by von Graefe in 1868, is characterized by a progressive, and as a rule, symmetrical paralysis of all the external ocular muscles; the upper lids drooping; the eye-balls becoming more and more limited in their movements, and in the end becoming almost completely motionless.

The intra-ocular muscles, in the uncomplicated form of the disease, do not suffer; the pupils retain their normal size and reaction, and the power of accommodation is unimpaired.

In 1879 Jonathan Hutchinson brought the disease into greater prominence by reporting seventeen cases; three of these were uncomplicated, while the remaining fourteen were complicated with other nervous diseases. Since the publication of Hutchinson's paper the affection has attracted a good deal of attention, and there has been quite a number of cases reported, both uncomplicated and complicated. I find but four of the uncomplicated cases reported in this country; two by Birdsall, one by Mittendorf, and one — a congenital case — by Tilley.

The disease, as a rule, occurs in otherwise perfectly healthy individuals. The atrophic changes remain confined to the ocular muscles; and as the accommodation and vision are not interfered with, the only inconvenience the patient is apt to suffer is from the immobility of the eyes, which, of course, necessitates more frequent movement of the head, and in some cases from the high degree of ptosis which compels him to tilt the head backward, so that the pupils may be brought below the borders of the drooping lids.

A few cases have been reported in which other nervous lesions, chronic bulbar paralysis, locomotor ataxia, and progressive muscular atrophy, developed in the course of this disease; but it is certainly not usual for other muscles to become involved when the atrophic changes begin in the ocular muscles. Although the pathology of this disease has not definitely been determined by autopsy, it is considered by Förster, Mouthner, and other investigators, to be a degenerative process involving the motor nuclei of the ocular muscles, situated upon the floor of the fourth ventricle and aqueduct of Sylvius, and is thought to be identical with the change occurring in progressive bulbar paralysis, and the spinal form of progressive muscular atrophy.

The centres of the motor oculi nerves are, as a rule, the first to become affected, and the corresponding muscles of the two eyes, supplied by these nerves, are usually involved at about the same time and in an equal degree. Exceptions to this symmetrical failure of power are rarely observed. Mouthner, however, reports one case, in which the ptosis developed in the left eye twenty years before it made its appearance in the right, and neither were the other muscles of the eyes symmetrically affected. At the time of Mouthner's examination some of the muscles still retained their normal power.

The levator muscles of the lids, in the majority of cases, never entirely lose their power, even when the other muscles supplied by the third nerves are completely paralyzed.

The degree of ptosis is therefore variable; it being sometimes so slight that it is not noticed by the patient, and causes him no inconvenience. It is usually, however, of a moderate degree, and is sometimes complete.

Diplopia is not often present, but it is sometimes complained of where the disease progresses with moderate rapidity, that is in cases where the loss of power becomes almost complete within a few months. In the larger proportion of the cases recorded the progress is very slow, and diplopia is not mentioned as being present. The case which I have just reported seems to be exceptional in this respect, as, although double vision is not complained of, it is found to exist, and is made more noticeable when the pupils are completely exposed by raising the lids.

In regard to the sex and age of persons afflicted with this disease, it is much oftener met with in males than females, and in most of the cases reported, the trouble has come on before the thirtieth year. I find the reports of three congenital cases, and of three others, including the case just mentioned, in which the trouble was first noticed during the third year.

Lawford reports one case, in which the lids began to droop when the patient was about fifty years old, and I do not find any others recorded where the trouble began later than this.

In regard to cause: a history of previous syphilis is sometimes obtained, though not as frequently in these uncomplicated cases as in the cases seen in connection with other nervous diseases.

The trouble is also sometimes dated from an injury. In Lawford's case, there is a possibility that the disease was hereditary, as the patient's grandmother and two male cousins are said to have drooping lids.

The prognosis, as far as any marked improvement in the ocular condition is concerned, is not good. A moderate increase in the movement of the eyes is sometimes observed, after iodide of potassium has been taken in large doses for a month or more, and there may also be some improvement in the ptosis.

Mouthner reports one case, a child eleven years old, that entirely recovered in two months, with no treatment whatever. The trouble developed rapidly in this patient; there being a complete double ptosis, three months after the first symptoms were noticed; there was also a slight facial paralysis, so that it can hardly be classed as a typical case of this disease.

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ARSENIC IN THE COURTS.[1]

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Inasmuch as arsenic is one of the best known of the deadly poisons, and as it is also one of the most easily obtained, owing to its extensive domestic use in the form of what is popularly known as "Rough on Rats," and its more extensive use in agriculture in the form of Paris green, it is not strange that by far the largest number of suicides by poison should owe their success to the ingestion of this particular one.

As white arsenic and Fowler's solution are practically free from taste or odor, and are readily administered in food or drink without liability to attract the attention of the victim at the time, it is not surprising that this drug has been a favorite with those contemplating secret murder.

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[1] Read by title before the Massachusetts Medico-Legal Society, October 3, 1888.

That its use for this purpose is constantly diminishing is wholly due to the gradually-increasing knowledge on the part of the general public that it is one of the homicidal drugs most certain of detection; and as modern chemistry has succeeded in removing much if not all of the mists and fogs which surrounded trials in past generations, the risk in the use of this poison has become so great that trials for murder with arsenic are becoming rarer year by year.

Yet, from time to time such cases do occur; and when they do, although the management of the trial must be wholly in the hands of the gentlemen of the legal profession, still they must rely largely upon the advice and assistance of the doctor. It is true, even if he be a medical examiner, his position is that of a witness only to tell what facts he knows, and such opinions as he can fortify; but he must also assist in clearing away any doubts which counsel eager in the defence of their client may seek to arouse in the minds of the jury while confining his own evidence within strict lines of impartial demonstration of scientific fact. The chain of proof in a trial for murder by arsenic will naturally include —

(1) The death and the cause of the death, namely, that it was arsenic in some form, and from nothing else; or, if from something else, directly, how far the arsenical poisoning was contributory thereto.

(2) That such death was the result of homicide, and not of suicide or accident.

(3) That the accused was the person who administered the drug, — this question involving motive, opportunity to administer, possession of the drug anterior to the crime, and other matters still more closely within the province of the lawyer.

It is with the first part of this chain of proof with which the doctor, and especially the medical examiner, has to do, and with the second part only to a limited extent. As in ordinary warfare inventions for defence have closely followed inventions for greater destruction, so in the legal warfare of murder trials, the skill of defence has been assisted by experience and the knowledge of increased means of medical proof, and to-day the closest attention to detail is necessary on the part of the physician. Formerly it would have answered every purpose to have demonstrated the presence of arsenic within the stomach. To-day such proof would be insufficient, as the presence of unabsorbed arsenic is consistent with a continuance with life. To-day the medical evidence must demonstrate not only the presence of the drug, but also, generally, that the drug has been absorbed, and also the method by which it has destroyed life, whether by the violent inflammation of the stomach and intestines coupled with the exhaustion of the violent vomiting and purging, or whether, at a later period, by the destructive effect of the absorbed drug upon the other viscera, notably the liver and kidneys, by producing fatty degeneration. A chemical examination of the vomitus and the urine voided, while of assistance in a capital trial, has not the importance that it would have in a trial for attempted murder where the victim survived, inasmuch as in such cases the proof of rejected and eliminated arsenic, combined with the history of the symptoms, would be the only proof of arsenic ingested or absorbed. But where death has occurred the pathological changes are so marked that it is not difficult to demonstrate that an irritant poison has been at work, and the chemist is able to demonstrate what that irritant was.

The medical witness must be prepared to demonstrate clearly the pathological changes. No jury would be warranted in finding a verdict of guilty in a case where, although chemistry might show a small amount of arsenic in the system, there was still no evidence that such arsenic had produced any deleterious effects upon the organism. This is of especial importance when the liability to error in attributing minute amounts of arsenic after Marsh's test to the presence of such drug in the body at time of death is considered. A still graver error is liable to result unless the utmost accuracy is observed in weighing the amount of organs delivered to the chemist, and also the amount retained for examination in case of accident to the first portions; for an error of little moment of itself, when multiplied for the purpose of forming an estimate of the whole amount in the body, would have a possible fatal effect on the life of the accused.

This was notably exemplified in the *cause célèbre* at New Haven, where two young men were put on trial for the murder by arsenic of one Jennie Cramer. Here, though *a priori*, from the place where the body was found, and from all the pathological conditions, the case was one clearly of death from drowning, as was later demonstrated to the satisfaction of the jury, the Government endeavored to establish the theory of homicidal arsenic poisoning.

In the report of the post-mortem examination there was absolutely no proof of any deleterious effects of the drug upon the organism; on the contrary, the condition of stomach and bowels showed the absence of either vomiting or purging, and no fatty degeneration of any organs, and no inflammatory action in the stomach. The chemist who analyzed portions of the organs and of the muscles, found, by Marsh's test, minute quantities of arsenic.

It is, of course, a question if there was any arsenic in the body during life; but when it was put in evidence that he had *about* one-half of the liver and *about* so much of other organs, and the minute fractions of a grain of arsenic in these *abouts* were multiplied, as if they were exact amounts, by the weight of the body, to produce an estimate of a little less than two grains in the whole body, a very dangerous plan was adopted, when human life was at stake.

This, however, belongs rather to the province of the chemical expert than the pathologist. It ought not to be a matter of great difficulty to demonstrate the changes produced by an irritant poison, and to undergo the ordeal of a cross-examination, when the poison has been the sole cause of death. When disease is present, or organic changes in various organs, it may not be so easy to make clear to a jury just how much the arsenic had to do with the death, especially if the quantity is small, and the exhaustion from the irritant action is the chief factor. Each case must be considered and treated of itself; and that evidence will have the greatest weight with the jury which does not claim too much, or assume infallibility. The present state of medical expert testimony in the courts would undoubtedly ensure a number of witnesses to controvert any extreme position, no matter how fully convinced the examining physician might be of the soundness of his theories.

In all trials where the results of chemical analysis show only a small amount of arsenic, the theory of accidental admixture after death will be urged, especially in those long buried. To-day not much weight, if any at all, is given to claims that the body absorbed arsenic from the soil in which it lay. The physician who makes the autopsy has only to demonstrate the caution he observed to prevent admixture from anything on his table or instruments, or the use of unclean dishes or jars, and leave to the chemist the demonstration of the impossibility of any artificial accidental admixture while the organs were in his charge. One thing is absolutely conclusive. No pathological change can occur after death. If the pathological changes of arsenic poisoning are to be observed in the body, it is entirely clear that the arsenic was ingested during life.

Most of the embalming fluids, so-called, contain arsenic; and it is often the case that the body has been injected before the cause of death is suspected. This need give the medical examiner no trouble; for the utter worthlessness of any pathological or chemical examination, as far as the demonstration of arsenic poisoning is concerned, is so clear that no prosecuting officer would proceed at all in the case, if the result depended on such examination. There were some such cases involved in the late trial of Mrs. Robinson; but they were not regarded as factors, either by the lawyers or physicians.

The question of accident, suicide, or homicide, is one to be determined by collateral evidence, and really to be decided by the jury. The form in which the drug was ingested, the quantity and time and place, social surroundings and mental conditions, may all have weight in arriving at a just conclusion; and the physician can be rather of service to counsel before trial in aiding him to a proper theory, than in actual testimony upon the stand.

The other questions occurring in arsenic trials are wholly within the domain of law, and so not within the scope of a paper before this Society.

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REPORT ON RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

TETANUS.

Von Eiselsberg,[1] in Vienna, has had an opportunity to investigate six cases of tetanus clinically and experimentally. Four ended fatally. In four cases fragments of skin, wound secretion, and blood were investigated, and used for inoculation experiments. In two cases splinters were removed from the wounds. In four of the cases the wound had been fouled with earth, when received. V. Eiselsberg's results corresponds with those of most other writers, except that he did not succeed in finding tetanus bacilli in the blood. Inoculation of animals with wound secretion, particles of skin, and wood splinters removed from patients subsequently affected with tetanus, were successful. In one instance tetanus followed inoculation with fragments of such a wood splinter which had been removed from a fatal case of tetanus two and one-fourth years before. With reference to prophylaxis, v. Eiselsberg recommends that even the smallest wounds which have been inoculated with particles of earth or foreign bodies should be most carefully disinfected, and all foreign substances removed at once; that all bandage material — soiled dressings, etc., that have been in contact with a tetanus patient — should be burned; that such patients should be isolated; and that an especial set of instruments and apparatus should be used for their treatment.

Of interest in this connection are the investigations of Dr. Joh. Raum, in Warsaw,[2] who has made a series of experiments by inoculating rabbits with earth. Earth from Göttingen which had been carefully shut up in a closed glass vessel for three and one half years, as well as earth from different parts of Warsaw, produced tetanus after an incubation period of from two and one-half to four days. An investigation of the cream-like mass at the point of inoculation invariably demonstrated the presence of the "Nikolaier bacillus."

Wiedermann,[3] of Stuttgart, was successful in his inoculation experiments with fragments of a splinter of wood taken from a fatal case of tetanus, and with the pus from the same patient although he did not find the bacilli in the latter.

Guelpa,[4] also, after an extended investigation, has confirmed the statements already made by Nikolair, Rosenbach, Brieger, and others. He concludes that tetanus is an infectious disease; that it is not, contrary to the opinion of Verneuil, a disease of equine origin, notwithstanding horses show the greatest susceptibility to it; that the tetanic symptoms are the result of the "toxine" produced by the bacilli, which increase in number during the first outbreak of symptoms only at the seat of inoculation. In general, the dissemination of the bacilli throughout the body is rare, and only occurs, if at all, in the later stages of the disease. That the indications for treatment are: (1) the extermination of the bacillus colony by active surgical procedure; (2) the elimination of the "toxine" from the system by cathartics, diuretics and diaphoretics; (3) to prevent the excitation of the nervous system by large doses of chloral.

OPERATIVE TREATMENT OF HERNIA OF THE BRAIN AND SPINAL CORD.

Hildebrand[5] reports three cases of operative interference in Koenig's klinie, in cases where congenital defects existed in the cranial vault, with protrusion of its contents. One was a meningocele-cerebratis; another, an encephalocele, the sac containing fluid and brain tissue; the third, a meningo-cephalocele. All ended fatally. Also five cases of spina bifida, with three deaths from suppuration and meningitis, or unknown causes. Hildebrand recommends the following rules in operating:

In all cases of cerebral and spinal herniæ, when the contents of the sac are fluid, incise, evacuate its contents and remove it. If the contents be brain substance, it should be reduced, if possible, and held so with a truss. If irreducible, the contents should be excised. Ligation of the sac base, without opening it, is only to be done with meningoceles containing only small amounts of cerebrum. Escape of cerebro-spinal fluid is avoided by immediate introduction of the finger through the incision in the sac, and occlusion with its tip of the communication between it and the interior of the skull. An elevated position of the seat of operation and narcosis are considered advantageous. The Schatz-Rizzoli methods are condemned.

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[1] Wien. Klin. Wchnschr., 1888, i, 10-13.

[2] Ztschr. f. Hyg., 1889, v. iii, p. 509.

[3] Ztschr. f. Hyg., 1889, v. iii, p. 522.

[4] Bull. de Thér., 1888, lviii, p. 508.

[5] Ztschr. f. Chir., 1888; Bd. xxviii, heft, 45.

THE REGENERATION OF BRAIN TISSUE AFTER TRAUMATIC LESIONS.

Coën and others have denied that a genuine regeneration of the cerebral tissue occurs, and claim that the newly-formed tissue contains no new nervous elements. In experiments during the past twelve months,[6] wedges of brain substance were excised from dogs, rabbits, and guinea pigs, or portions grafted from one hemisphere into the opposite one. Union generally occurred so perfect as to necessitate a careful microscopic examination to locate its site. A most complete regeneration of the cerebral tissue took place, the proliferation process at times being so active that the newly-formed tissue even rose above the level of the adjacent surface. Likewise an early and thorough union of the grafts with the adjacent surfaces occurred, except in those cases where a rather profuse bleeding occurred during the transplantation.

AFTER-TREATMENT OF TRACHEOTOMY.

Prof. C. Langenbuch,[7] Berlin, has tamponed the trachæ after trachotomy, on account of diphtheria, since 1882. For this purpose the low operation is performed, in order that the tampon can be introduced without interfering with the vocal cords. The tampon consists of small pieces of cotton soaked in an iodoform-ether solution. He claims that the percentage of recoveries has been raised from 22.4 to 36 per cent. The benefit of this method is especially marked in cases of tracheotomy in children under two and one-half years of age. His conclusions are based on the examination of 1192 cases, 593 of which have been treated in this way.

FURTHER IMPROVEMENTS IN THE TREATMENT OF MALIGNANT STRICTURE OF THE ŒSOPHAGUS.

C. J. Symonds[8] contributes an interesting account of his experience in "tubage" of œsophageal strictures. His detailed account of his cases is instructive, and is suggestive of further benefits to be gained in the treatment of this hopeless affection. The subject he sums up as follows:

The short tube I have now used in twenty-two cases; of these, seventeen have died under observation, five of which have been already published, while notes of the remaining twelve are given above. Two cases were submitted to treatment for a short time only, and left the hospital relieved, but without tubes, and three are at present under treatment. Of the fatal cases, nine died with the tube in position, swallowing to the last: four were able to swallow without a tube for some time before death; in one a long rubber tube was substituted and worn in comfort for four months and a half. In one other, a long rubber tube was used for three weeks after eleven months of the short tube. In two the long tube of Krishaber was used after cough on deglutition ensued, and gave rise to much distress from ulcerations of the mucous membrane over the cricoid. The majority, therefore, wore the short tube up to the time of death, or were able to swallow owing to the dilatation effected. It will be seen that the patients lived variable times after treatment began, depending upon the duration beforehand and on the form of the disease. The longest periods were six, seven, eight, and eleven months. If it be granted, from the evidence of the results of post-mortem examinations and of the patient's sensations, that this form of tubage does not hasten the growth of the disease, then it seems quite clear that the patients are more comfortable than after gastrostomy; they die from the unimpeded and unhastened progress of the disease. The majority of the cases of gastrostomy succumb, probably not more than one in five recovering. Only once has an accident occurred to me or to my dressers in an experience now of twenty-two cases, and this was not due to any injury inflicted on the stricture, but to a perforation of the pharynx high up. Besides these twenty-two cases, all under prolonged treatment and under various hands, we have treated quite ten other cases by bougies without accident. It may be said, therefore, that there is no danger in passing bougies; a great deal too much stress has been laid upon this point of danger. I have passed tubes and bougies in all conditions, and so have my dressers, without, so far, any accident, save the one mentioned, and that occurred to myself, and might have been avoided, and now, with the new introducer, certainly will be in future. The improvement in the patients is remarkable: one man, as stated, gained nineteen pounds in ten days, but he was nearly dead before treatment; while others have gained flesh less markedly, all have been benefited. The delight of a man at being able to swallow again is well worth seeing. It seems almost a miracle to him. We last saw under treatment a postman who came unable to swallow. He was admitted for one night and treated as described above. A No. 7 was passed, and he returned to his duties daily. During Christmas week he was swallowing freely, and a longer tube had been passed. From a perusal of this case it will be seen that all were able to move about, and some to follow their usual occupation; when this is not laborious it may be carried on till the strength be reduced by the progress of the disease.

In conclusion, I would claim for this method of treatment — that it is applicable to nearly every case of malignant stricture, and probably to all if seen early enough; that it affords the patient far more comfort than the long feeding tube; that it is superior to gastrostomy in the comfort it secures and in the freedom from danger; that life is prolonged in every case, and as long as after the most successful gastrostomy; that the tube does not give rise to any irritation, being tolerated by the most irritable patient; that, instead of favoring growth, it checks it, by allowing unhealthy fluids to pass from the œsophagus into the stomach; that the use of the short tube — and, when cough on deglutition arises, of the soft rubber tube — will enable us to treat all cases without resorting to gastrostomy.

ON THE TREATMENT OF SO-CALLED PERITYPHLITIC ABSCESS.

R. F. Weir[9] has contributed an excellent paper on the above subject, based on the observation of one hundred post-mortem examinations, and from thirty-two personal operations for so-called perityphlitic abscesses, his conclusions are as follows:

(1) That all such abscesses originate in the peritoneal

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[6] Prus. Wiadomosel Lekarskie, 1888, August, and Annals of Surgery, 1889, vol. ix, p. 225.

[7] Berlin Klin. Wchnschr., 1888, xxv, 41.

[8] Lancet, March 30 and April 6, 1889.

[9] Medical News, April 27, 1889.

cavity, and there develop to an appreciable size before invading extra-peritoneal tissues or viscera.

(2) That as stercoral accumulations or cæcal perforations are so rarely met with as causes of perityphlitic tumor or abscess, they should not be considered from a clinical view in any given case.

(3) That in an attack of perityphlitis originating, as it generally does, as a perforation, or as a gangrenous condition of the appendix vermiformis, all use of purgatives or enemata is in the beginning of a case to be avoided, and the immobilization of the patient is to be insisted on, and aided, if necessary, by anodynes.

(4) That if a tumor be found, it be opened by a lateral incision as soon as symptoms, constitutional or local, indicate the formation of pus.

(5) That if symptoms indicating an increase of the local peritonitis, such as the persistence of vomiting, spreading pain, abdominal resistance, and temperature elevation, continue with or without the formation of tumor, for a period of forty-eight hours, the danger of the disease is greater than the proposed lateral or median laparotomy, which should then be immediately resorted to. In many instances even a less time should be afforded the consideration of the disease before operating.

(6) If a general peritonitis be suspected, corroboration can often be obtained by abdominal aspiration with a fine needle employed in places other than in the right iliac fossa, and particularly by a deep, hypogastric puncture into the pelvis, the bladder being first emptied. However, if left in doubt, it is better to operate.

(7) (*Sub judice*). That if general suppurative peritonitis be found at a laparotomy, lateral or median, avoid too much handling of the intestines, and trust to either temporary irrigation with large glass tubes, (Tait's,) or, more rationally, to permanent or repeated irrigation and fluid distention of the abdominal cavity, as advocated by Greig Smith and by Penrose.

(8) (*Sub judice*) To meet the obstruction symptoms due to septic paralysis of the bowels, which often persists after a laparotomy for suppurative peritonitis, saline purgatives and repeated washing out of the stomach should be resorted to, even though vomiting be present to a marked degree. Enterotomy may also, in exceptional cases, be entertained.

CATGUT RINGS AS A SUBSTITUTE FOR BONE PLATES IN LATERAL ANASTOMOSIS OF THE INTESTINES.

Jessett and Horsley [10] have contributed an experience in experimentation in the forming of lateral anastomosis that clearly demonstrates its value. They reprint a large number of experiments, and give the results as follows: The operation, as at present practised by the Czerny-Lembert suture, gives a mortality of 86.6% as against 24.99% of enterorrhaphy by Senn's invagination method, and only 7.69% by the method of approximation plates. The time required by the Czerny-Lembert method, which necessitates fifty to sixty sutures, was an hour and a half; the method by Senn's plates required only twenty minutes, and needed but four to six sutures.

Abbe[11] has suggested the use of catgut rings instead of bone plates in the establishment of lateral anastomosis. The rings are made as follows:

"A moderately heavy catgut is chosen, taken from alcohol and juniper oil; it is wound loosely on a test-tube, and soaked in hot water. It soon kinks up, and, were it not on a tube, could hardly be unravelled. After a while it is straightened out, allowed to untwist, wound again loosely, and soaked in hot water once more, until it ceases to twist. It is then ready to make up into rings which will lie perfectly flat. Eight or ten turns over two pins, stuck in a cork two inches apart, will make a bundle somewhat smaller than a lead pencil. These may be tied at four places with fine silk, to secure the strands parallel while being wound round like a cable, with a continuous piece of the same catgut. The end of the piece is secured by threading it into a Hagedorn needle, and transfixing the whole bundle obliquely with it at the place of finishing. Thus there are no knots, and it is difficult to find the point of beginning.

"The ring is now a long oval, with an inside diameter of two inches, and in thickness smaller than a a pencil. Six strong but small braided silk threads are now fixed to each ring, equidistant, on the face looking toward the other ring which is to be laid against it. No knots are used. A needle pierces the ring between the strands, carrying the thread, which is drawn through all but eight inches, and wound once and a half round, sinking between the encircling catgut, piercing the ring again, and cut off. The rings, which have now been water-soaked, are ready for use, if needed for emergency; but, if possible, they should be kept a while in alcohol, under pressure between two glass slides, the threads being curled up within the oval, and the sides being pressed together after the glasses are tightly tied together. The ring thus becomes a long oval with parallel sides, and soon becomes harder and flattened on its faces. Moreover, it shrinks a trifle in alcohol, to swell again in the intestine and give additional security.

"In using the rings, I find it saves time to have each thread have its own needle. The intestine is pierced from within outward less than a quarter of an inch from its cut edge. The ring should be laid on a damp folded towel, with threads in order and needles stuck in the towel, which is held by the assistant close to the bowel, while the operator quickly pulls the thread through and passes the ring into the interior of the bowel. When the threads are tied and cut off, the apposition is perfect, but by a quickly made running suture outside all, a half inch of peritoneal surface is at once secured beyond the possibility of a leakage. More than this is superfluous, for the edges held between the rings act as valves.

"In invaginating the end of the cut intestine after exsection, one will delay a long while if he tries to turn in first one and then the other edge, and will also find the mesentery try to turn in after it on the attached side. My rule is to trim back the mesentery at least a half inch from the end. Then seizing both lips with toothed forceps, plunge them directly into the lumen. The entire edge usually follows, and one holds them by the left index finger and thumb while a quick running overhand suture of the slit thus formed is made."

COLECTOMY FOR MALIGNANT DISEASE.

Kendal Franks [12] reported two cases of malignant disease in which operative proceedures were undertaken. A statistical table, which accompanied the paper, gave details of the fifty-one cases hitherto published, including the operation and date, the seat of the disease, the length of gut removed, the treatment of the resected intestine, the situation and length of the wound in the abdominal wall, the result, and the reference to publication. From this list it appeared that the first operation was done by Reybard, in 1843, and was successful, the patient living for a year afterwards; and the list included cases by Messrs. Bryant, Marshall, Treves, Sydney Jones, Whitehead, and Pitts, in this country.

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[10] Lancet, March 16, 1889.

[11] Medical News, June 1, 1889.

[12] Lancet, March 2, 1889.

From a consideration of the cases, which numbered fifty-one, it appeared that the operation had proved fatal in 40.8 per cent. In twenty of those which survived operation the disease returned in ten, and in the remainder the period which had elapsed was too short to draw conclusions from. One case was alive four years after operation. The author drew the following conclusions: — (1) Colectomy rarely effected a cure. (2) As a palliative measure it was justifiable, and frequently demanded. (3) Recurrence usually took place in the liver or mesenteric glands, and death then was much easier than when the intestine was occluded. (4) The mortality after immediate suture of the intestine and after the formation of an artificial anus, was nearly equal. (5) Immediate suture of the divided ends was preferable to the formation of an artificial anus. (6) The death-rate had been reduced in the latter cases, and a further reduction might be anticipated.

(To be continued.)

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Clinical Department.

TETANY TREATED SUCCESSFULLY WITH URETHAN.[1]

BY DR. S. L. ABBOT.

A SEVERE case of tetany was under my care in the Massachusetts General Hospital, two years since, which yielded promptly to treatment with urethan.

The patient was a robust "'longshoreman," forty-three years old, accustomed to hard work. With the exception of an attack of typhoid fever five years before, he had been a uniformly healthy man. His habits were temperate. Six weeks before entrance he had been attacked, without any known cause, with severe cramps, which came on at first in the early morning, affecting primarily his legs. The spasms steadily increased in severity, affecting in time all the flexors of the extremities, the abdominal muscles in part, the outer muscles of the thighs, and those about the shoulders. They increased in frequency, so that on some days they occurred every half hour, and were easily excited by any muscular effort. Even crossing a foot over the knee of the other leg for the purpose of tying his shoe, would bring on a cramp of the flexed leg, extending up to the abdomen and involving the abdominal muscles of that side. For a few days before admission to the hospital he had suffered from darting pains here and there in the back of the neck, the chest and legs. He thought the attacks were somewhat relieved by micturition.

At the time of entrance the patient complained of pain down the outside of the left thigh, extending from a point near the left sacro-iliac synchondrosis, where he was very sensitive on pressure.

There was no apparent loss of strength. General sensation was normal, and the special senses were not affected. There was no headache. The appetite was poor, and the bowels were regular. Micturition was somewhat frequent, but nothing abnormal was detected in the urine, which was normal in color but of low specific gravity, 1005.

During his first night in the hospital the patient had one attack of cramps.

When first seen by me on the following morning, having in mind the very prompt effect which I had obtained in checking the spasms in a violent case of chorea by the administration of urethan,[2] I determined to try it in the present instance. Ten grains were prescribed to be given every two hours by day, the dose to be increased to fifteen grains at bedtime. Diet, six ounces of milk every two hours.

The patient had one or two attacks of cramps during the day, one of which was seen by my assistant, Dr. Jacobs. There was no general convulsion nor loss of consciousness, but there was a tonic contraction of the legs and left arm lasting about half a minute. The patient slept well most of the following night, having two or three slight cramps with little pain. On the following morning the general pains complained of on entrance had entirely disappeared. The tongue was covered by a thick moist coat.

On the next day the patient reported no cramps for twenty-four hours, and he was feeling generally much easier. Diet: soup, broth, milk, bread. Urethan to be continued.

Two days after the patient had had no more cramps, but he complained of some pain in the course of the sciatic nerve in the left thigh. This was less the next day and there was no return of cramps. On the ninth day after the treatment was commenced the patient was on full diet, sat up all day free from pain, and there had been no cramps since the second night after entrance. The urethan was omitted on the following day, and on the next he was discharged well. The temperature on entrance was 101.4°, and normal every day after. Pulse 100 on entrance, and ranged from 50 to 60 up to the last day, when it was 98.

It should be mentioned that previous to entering the hospital the patient had tried rest from work for a week without any relief to the cramps. Nine months after leaving the institution he was heard from, and reported that he had continued in perfect health.

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PARTIAL PLACENTA PRÆVIA IN AN EIGHTEENTH PREGNANCY.

BY A. J. ABBE, A.M., M.D., OF FALL RIVER.

MRS. O., a native of England, forty years of age, was seven months advanced in her eighteenth pregnancy, when, on May 24th, she was suddenly seized with hæmorrhage from the uterus. Upon my arrival I found her not flowing, but a vessel contained about two quarts of blood. On examination the baggy feeling over and behind the slightly dilated os confirmed the diagnosis of placenta prævia. Rest was prescribed, and the probability of the necessity for induced labor was explained.

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[1] Read before the Boston Society for Medical Improvement, May 27, 1889.

[2] Boston Medical and Surgical Journal, vol. cxiv, p. 419.

Five days later she had another hæmorrhage a little less in amount. I did not see her. A week later she had a third, and fainted. I advised immediate delivery, but was unable to obtain the consent of any member of the family, or even permission for a consultation. Impressing upon them the danger of delay, and leaving the responsibility with them, I departed. At intervals of five to fourteen days she had four more hæmorrhages. General malaise was marked throughout; "fainting spells" were frequent.

On July 5th, labor pains continued for several hours, the os becoming the size of a silver quarter, with but slight hæmorrhage. She was now willing to have anything done, but it was my turn to delay a little. Pains ceased until July 20th, when contraction again occurred for three hours, and then ceased for eight hours; when, upon my arrival, I found the os two-thirds dilated, head presenting. Drawing four ounces of residual urine, I dilated manually for a few moments, and ruptured the membranes; when contractions recurred and completed the dilation in thirty minutes (O L. A). Second stage lasted fifteen minutes; third stage, fifteen minutes. The placenta presented upon the lower edge of its maternal aspect an elliptical surface, three by one and three-quarters inches, which was smooth, and glazed with a membrane similar in all respects to the amnion. One drachm of ergot was given. Very little flowing. Mother and boy both well.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

Meeting of May 27, 1889. Dr. W. L. Richardson, President, in the chair.

A CASE OF TETANY

was shown by Dr. F. C. Shattuck.

A characteristic spasm was excited in the right arm and hand by pressure applied below the clavicle, and prompt relaxation was induced by the application of the constant current, — the negative pole on the sternum, the positive on the extensor surface of the arm and wrist. The patient was a well-developed, vigorous girl of twenty-one, who underwent a very severe attack of diphtheria, followed by paralysis of the fauces and right leg, five years ago. After recovery, she began to experience occasional cramps in the right hand, without prodromata or apparent exciting cause. The spasms were, at first, confined to the right hand and arm, lasted only one or two minutes, and were separated by considerable intervals. Gradually they have involved the other upper and lower limbs; sometimes now last an hour, and are much more frequent. Several days ago, in the midst of an attack, she sought advice at the Massachusetts General Hospital, and was admitted to the ward, the attack being promptly recognized by Mr. Chadbourne, the medical house officer. The Trousseau phenomenon is well marked, it being easy to bring on spasm in either or both arms by pressure in the axillary or clavicular regions. She has had two attacks in the left leg since entrance, but pressure on the nervous and vascular trunks of the legs has failed to invoke spasm. The case is thoroughly typical of a somewhat mild form of the disease, except that the peculiar change of electro-muscular contractility, first described in connection with this disease by Erb, is not present, negative closure producing contraction when the current is applied to the nerve before positive closure, in this case, as in normal conditions.

The only disease to be eliminated in the diagnosis of this case is hysteria, and that can be easily excluded by the intermittent and bilateral features of the spasms, and by the total absence of any other hysterical manifestation. In a case I reported[1] several years ago, the only other I have seen, the patient was a young man, and the spasms began and were very marked in the masseters, but were also severe in the trunk and limbs alike. The possibility of tetanus had consequently to be considered. The prompt relief which is brought in this case by the local application of electricity — both currents seem to act equally well — is noteworthy, and is not mentioned in any work on the subject which I have thus far consulted. My other case was cured by bromide and chloral. I propose to give this patient the former alone.

Dr. F. C. Shattuck also showed

TWO RENAL CALCULI

voided by a hospital patient under the following circumstances. A woman of middle age was admitted, and a diagnosis of debility was reached after careful and thorough examination. She was doing well until a week ago, when she complained of moderate dysuria, for which no explanation was found in the urine. A few days later she passed two facetted stones, one as large as the terminal phalanx of a woman's little finger, and, immediately afterwards, urine perfecfly loaded with pus. The next urines were clearer; and thirty-six hours after the stones came away the renal secretion was again perfetly normal. After the passage physical examination of the lumbar regions was as barren of results as before; and the lax and thin abdominal wall permitted thorough palpation. In the hope that we might ascertain which ureter was traversed by the calculi, Dr. O. K. Newell was so kind this morning as to make an endoscopic examination. He reports that he saw both orifices, and that the left ureter seemed somewhat dilated.

Dr. S. L. Abbot reported

A CASE OF TETANY TREATED SUCCESSFULLY WITH URETHAN.[2]

Dr. F. C. Shattuck read

SOME REMARKS ON TYPHOID FEVER, WITH AN ANALYSIS OF ONE HUNDRED AND TWENTY-NINE CASES TREATED IN HOSPITALS, AND SPECIAL REFERENCE TO RELAPSE.[3]

Dr. George B. Shattuck thought the position taken by the reader with regard to relapse was a sound one. These views accorded with those adopted by most recent authorities upon typhoid fever, and would probably be found to be in accord with the experience of practitioners having extensive opportunity for observation. The fact that relapse was independent of indiscretions in diet was incontestable, and abundant proofs were to be found in any large hospital service, having numerous cases of typhoid fever, by any one who chose to look for them. It was certainly very desirable that this fact should be thoroughly understood by the profession; he thought it questionable, however, whether it was equally desirable that it should be dwelt upon with the laity. There were real dangers and drawbacks attendant upon early indiscretions in diet after typhoid, and it was difficult enough under any circumstances to restrain the greediness of the half-starved fever convalescent.

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[1] Journal, 1887, i, p. 497.

[2] See page 230 of the Journal.

[3] See page 221 of the Journal.

The trouble with Brand's statistics is that they are too good. A moderate experience with his method has not induced its adoption outside of Germany and Lyons. A proper application of the method demands plunging the patients in cold water from the very beginning of a febrile process, subsequently called typhoid fever, every time the temperature reaches a certain point. If the claim now made is, that the object of this constant disturbance of the patient is simply the stimulation of the nervous centres, Dr. Shattuck had sufficient confidence in the ingenuity of physiologists and the resources of therapeutics to suggest methods of stimulation as effective as the cold bath, and more agreeable, and at the same time less cumbrous, less disturbing, and less costly in our country, both for patients and attendants.

Dr. F. C. Shattuck said, in reply, that until lately he has been disposed to take somewhat the same view of Brand's statistics, namely, that they are too good; but the evidence of other Germans, and especially of the French who are not prejudiced in favor of German ideas, is too strong to be disregarded. A more or less thorough Brand treatment has now been carried out in Lyons for fifteen years, with the best results, and the method seems to be winning its way in the French army hospitals.

Dr. Abbot said: It was very difficult to explain the cause of relapse in typhoid fever, or of the sudden rise of temperature which sometimes occurs in its course. It was certain that a very critical condition, such as unhealed ulcers in the intestines, might exist during apparent convalescence which gave no outward sign. He mentioned the case of a young man affected with typhoid, under his observation some years since. He had been left in his charge by the late Dr. Cabot, during a temporary absence from the city, and became apparently convalescent. He was so well that he was able to be up all day, and made no complaint. On Dr. Cabot's return home he resumed charge of the case. At his last visit Dr. Abbot gave the patient very strict directions about his diet, cautioning him against indiscretion, and assuring him that he was not yet out of danger of accidents, and he promised to be guided by his advice. On the next day, however, without consulting his physician, he ate a raw apple, which killed him. Severe abdominal symptoms at once came on, which ended in perforation of the bowel, peritonitis and death.

Dr. Whittier said: It is very evident, Mr. Chairman, that not much other than words of commendation can be said of Professor Shattuck's paper and the subject it places before us for discussion. He has not left much to be said on this most important and timely topic of cold bath treatment of fever, and particularly of typhoid fever.

The figures and the conclusions set forth in the paper present to us incontestable evidence of the need of a change from our long-practiced method of dealing with high temperatures, for figures like these are facts, and conclusions such as are here drawn are safe guides for treatment. It is only recently that it has been conceded by any considerable number of practical, every-day practitioners, that the underlying principle in the cold-bath treatment of fevers is more and better than the abstraction of heat already generated in the tissues, and that, after all, the influence on the nervous system, stimulating to new effort and imparting new power, is the chief effect of cold applied to the surface of the body; and the number of converts to this recently established view is constantly increasing, and in my opinion must continue to grow as men become better informed. We all recognize the obstacles to putting in practice the cold-bath treatment of fevers; large obstacles to the proper adjustment of the mechanical appliances. For instance, the bath should be at the bedside of the patient — an extremely difficult thing to arrange in private practice; we note the need of larger attendance and attention, for the patient must be lifted and not allowed to make any effort whatever; and yet larger difficulties in overcoming popular prejudice against so great an innovation, so radical a departure from previous and well-established methods. But our duty in the matter is none the less clear and positive, and it rests with the profession to insist upon and to carry out the changes in treatment advised and urged by Professor Shattuck.

Dr. J. P. Reynolds: Many instances of genuine typhoid cases, in which the typical course of the disease and its distinctive features are well marked, will, provided they occur in private practice, and therefore come early under judicious control, recover safely without other management than utter rest of mind and body, the securing of sleep, the simplest form of nourishment, a free use of diluents, and the very slightest medication. With this in mind, would any physician subject an average case of typhoid under his own roof to the continuous application of cold water?

Several speakers have referred to the habit of accrediting relapses to errors in diet. Were that fact generally kept in mind, upon which Liebermeister, in "Ziemssen" so justly lays stress, that no matter what improvement appears in pulse, in temperature, or in general condition, the risks of typhoid are continually present in every genuine attack for not less than thirty days; that at least until that time has passed the attendant must unshrinkingly exact entire tranquility of body and mind, relapses would be seldom if ever known. Errors in diet, rightfully interpreted, mean almost unfailingly, criminal disregard of the all-important clinical truth, that during the whole term mentioned diseased conditions invariably persist.

All that the limits of this discussion strictly permit has perhaps now been said; but one statement, many years since forcibly urged in a leading article of the *British and Foreign Medico-Chirurgical Journal*, appears of such paramount importance as to warrant its repeated mention whenever the treatment of typhoid comes up. The writer of that article maintained that if by simple means, for example, *pro re nata*, once, twice or three times daily, some such pill as the following,

Powdered Rhubarb	2 grs.
Comp. ext. Colocynth	½ gr.
Ext. Hyoscyamus	5-6 gr.
Oil of Caraway	q. s.

adding, in case of need, a simple enema, a daily dejection, fæcal in character, be secured during the first week of typhoid, the graver symptoms of the following period, which he thought justly characterized as those of septic poisoning, would not, to any marked degree, occur. Where such a care has been neglected it is believed that the best key to subsequent successful control has been lost.

No one questions the inestimable value of diagnosing early and of treating promptly every variety of grave disease, but this is never more indispensible than during the onset of typhoid; and the clinical gain would be immense, did every practitioner feel himself under bonds at least to entertain the question of impending typhoid, whenever, in the absence of distinctly localized inflammations, two conditions exist, inability to keep any longer erect and utter disappearance of appetite.

Dr. F. E. Cheney reported

AN UNCOMPLICATED CASE OF PROGRESSIVE OPHTHALMOPLEGIA EXTERNA, OR A SYMMETRICAL PARALYSIS OF THE EXTERNAL OCULAR MUSCLES.[4]

Dr. Wadsworth: The case reported by Dr. Cheney is a very interesting one, if for nothing else, from its rarity. It is the only entirely uncomplicated case of ophthalmoplegia externa that I remember to have seen. Such cases I believe are nuclear. Ophthalmoplegia complicated with other symptoms is not very rare. A number of years ago I showed a patient at this society with locomotor ataxia and ophthalmoplegia externa and interna. A few years ago I reported a case of ophthalmoplegia externa and double optic neuritis, apparently due to lead poisoning. At one time I was inclined to regard this case as one of nuclear disease, but am now disposed to think it one of peripheral neuritis. The paralysis of the ocular muscles was acute, and was entirely recovered from. Three days ago I saw a man of fifty years of age with ophthalmoplegia and simple optic atrophy. The ophthalmoplegia had begun twelve years ago, with sudden dropping of the left upper lid; the date at which the right eye was first affected is uncertain. Failure of vision was first noticed six or seven years ago. There is now in the left eye no perception of light; complete paralysis of all the ocular muscles; the right eye counts figures at two feet; ptosis is only partial, but all the other muscles are paralyzed except the superior oblique. It is remarkable that, with total inaction of all the other muscles, the right superior oblique appears to act with normal vigor. I discovered no other symptoms; there was nothing to point to locomotor ataxia, but I was unable to make an exhaustive examination at the time, and hope to have opportunity for further investigation.

Dr. Bullard stated that it was now generally admitted that chronic progressive total opthalmoplegia externa was always nuclear, and the lesion in these cases was disease and destruction of the cells of the nerve nuclei, similar to that which occurred in the gray matter of the cord in progressive muscular atrophy.

Dr. Wadsworth: I should like to say a word as to the nomenclature. Hutchinson first applied the term ophthalmoplegia externa to cases in which the external ocular muscles were paralyzed, in distinction to cases of paralysis of the internal ocular muscles, which he called ophthalmoplegia interna. But he soon after published a series of cases under the former title, in many of which the internal muscles also were paralyzed, and there were other complications. I quite agree with what Dr. Bullard has said regarding the nuclear origin. The term, I think, should not be applied unless more than one nerve is involved. The cerebellar affection referred to by Dr. Prince, involving the red nucleus, and so the fibres of the third nerve as they pass through it, would only affect one of the ocular nerves, and in such case the term would not be appropriate.

Dr. Walton: In connection with the question of neuritis, as causing symptoms similar to those of ophthalmoplegia, I should like to mention a case which I saw at the Eye and Ear Infirmary, at the request of Dr. Sprague. The patient was a middle aged man, who had complete immobility of the globe, together with lid drop in both eyes. He also had, however, optic atrophy and tenderness of the extremities, together with diffuse numbness and motor weakness. It was, therefore, a typical case of multiple neuritis, affecting, among other nerves, those whose nuclei are commonly attacked in ophthalmoplegia. The cause was probably tobacco. I do not mention this case with a view of advancing the theory that neuritis is the cause of the disease under discussion (which I think is undoubtedly nuclear, and analogous to bulbar paralysis), but to call attention to a possible source of confusion in diagnosis.

Dr. Cheney said: Dr. Prince must have misunderstood my statement in regard to paralysis of the intraocular muscles in this disease. My statement was: — "The intra-ocular muscles, in the uncomplicated form of the disease, do not suffer." I have examined the reports of between twenty and twenty-five of the uncomplicated cases, and in none of them were the intraocular muscles affected.

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FIFTH DISTRICT BRANCH OF THE NEW YORK STATE MEDICAL ASSOCIATION.[1]

Dr. T. H. Allen, of New York, read a paper on

TRAUMATIC PELVIC CELLULITIS.

This cellulitis, he said, was always associated with a unilateral or bilateral laceration of the neck of the uterus, and much more frequently with the former because this was almost always deeper than the bilateral tear. He did not believe that in every case of laceration the involution of the uterus is arrested; but numerous examples of subinvolution, associated with laceration, had led him to consider the relation of cause and effect to the positive and direct. He then proceeded to the narration of cases.

Case I. Mrs. R., aged twenty-nine years, has had three children, the last two of whom are living. After her last labor, nearly eighteen months ago, her health began to fail. The flow did not cease entirely until three months. Since her confinement she has become pale and anæmic; has had intense headache, radiating anteriorly and posteriorly from a point on the vertex, and also attacks of syncope increasing in frequency; pain in back and left iliac region; frequent micturition. Examination: Left lateral laceration, one-quarter of an inch in depth; uterus much enlarged; length of uterine cavity, three and one-half inches; thickening beyond the utero-vaginal junction in left broad ligament, circumscribed and intensely tender to touch. Tonics were given and hot water used faithfully after the manner advised by Emmet, but the tenderness persisted. Trachelorrhaphy was then performed in the usual way, five silver sutures being inserted. The patient was placed in bed and her water drawn with the catheter every six hours. Union was complete, and at the time of her getting up there was no tenderness, and the heat and pain on the left side had markedly diminished. She rapidly got well, and continues so at the present time, two years after the operation. The uterus measured two and one-half inches six weeks after the operation.

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[4] See page 224 of the Journal.

[1] Concluded from page 213 of the Journal.

Case II. Mrs. P., age twenty-nine; one child, stillborn, two years previous to consultation, labor tedious, instrumental delivery, lochia continued ten weeks. Since then her health had become seriously impaired; loss of flesh and strength; general facial acne; recurring hemicrania; pain in back and left ovarian region; irritability of bladder, dyspareunia; mental depression, and irritability; lack of self-control; suspicion; jealousy. An examination showed unilateral laceration of cervix and traumatic cellulitis of left broad ligament. The patient having already used hot water injections, under the advice of her physician, the operation of trachelorrhaphy was performed five days later. This was successful, and two months after operation she felt much better and her acne had almost entirely disappeared. There was no pain or tenderness remaining, and she was bright and cheerful. Since this time, over a year ago, the patient, whose marital relations were previously strained, has lived happily with her husband.

Having related four other cases, Dr. Allen said it must not be inferred from these that he is prone to operate in laceration complicated with cellulitis. This he would do only in exceptional instances. The opinion of the best gynæcologists he believed was expressed in the following quotation upon a paper read by Dr. C. C. Lee, before the Medical Society of the County of New York, in 1881. "When any decided inflammation exists about the uterus, or so long as any tenderness can be detected in the neighboring connective tissue, it is unsafe to operate." It was also true, however, as stated by Dr. Bache Emmet, in the "American System of Gynæcology." "In other cases the indurated and sensitive angle of laceration will be very marked and easily detached from the first, and in these cases there can be no question as to the necessity of removal of such a foreign body as a cicatrix." In this statement he thought Dr. Emmet had touched the keynote of the treatment, for he believed that this foreign body was the cause of the coëxisting cellulitis. There was a limited class of cases in which the use of copious intra-vaginal injections of hot water and other well-directed local as well as general treatment might improve, but not cure, a coëxisting cellulitis. This class of cases broadened the field for trachelorrhaphy, and to it, Dr. Allen said he had given the designation "traumatic pelvic cellulitis," to distinguish it from the more diffuse form of pelvic inflammation. It was primarily occasioned by a wound — a tear — and nature in her unassisted efforts to repair the loss of continuity in the uterine neck, built up a structure histologically different from the adjacent tissue, which operated in the same way as a foreign body. It was like cellulitis in the forearm of an insane woman, occasioned by stigmatization with small pieces of glass. The wound healed with the glass spiculæ remaining in the areolar tissue, but there was left a chronic form of inflammation which did not suppurate, but which resulted in cellular thickening, attended with pain and slight swelling, which increased to-day and diminished to-morrow, until finally relieved by excision. The operation of trachelorrhapy removed the cicatricial tissue (the foreign body) and completed the sphincteric arc of the neck with tissue identical in character, while it also had the effect of relieving by the bleeding caused by it, the congested blood-vessels and lymphatics, and of imparting a new impulse to the processes of nutrition. In concluding, Dr. Allen recapitulated the points of his paper as follows:

(1) Lacerations of the cervix uteri may result in the formation of cicatricial tissue which produces chronic traumatic pelvic cellulitis.

(2) In a limited number of these cases, local or general treatment, or both, will not subdue this inflammation and pain.

(3) Such treatment having failed, trachelorrhaphy may be performed successfully.

(4) The dense mass of cicatricial tissue operates similarly to a foreign body, and its removal by Emmet's operation is a logical remedy which precludes the possibility of its re-formation.

AFTERNOON SESSION.

Dr. J. A. Wyeth, of New York, gave an analysis, with comments, of a number of

IMPORTANT SURGICAL CASES

recently treated by him. They comprised supra-pubic lithotomy and other operations upon the bladder, ligation of arteries for various conditions, amputations and resection of the knee-joint. In regard to supra-pubic lithotomy, he said that after a career of varying fortune, in which at times it was unduly lauded and at times entirely abandoned, he believed this operation had now attained a secure position, which, on account of the improved facilities at the command of the modern surgeon, it would maintain permanently in the future. He also mentioned the various conditions in which it was applicable and in which it was, in his opinion, decidedly preferable to perineal section.

Dr. J. G. Truax, of New York, read a paper on

THE TREATMENT OF ACUTE LOBAR PNEUMONIA.

Within the last four months he said he had attended fifty cases of this disease. Of these he related two cases representing the conditions requiring the greatest variation in the treatment. The first was a patient in middle life, of medium size, and fairly well nourished. All the ordinary symptoms and signs of pneumonia were present, but the attack was not of great severity. The temperature two or three degrees above normal, the pulse rarely above 100, no delirium, no albuminuria, and the crisis occurring in from five to ten days. This class of cases comprised about one-half of those met with by the physician, and nearly all such patients would recover, whatever the treatment adopted.

In the second class of cases, while the difference in the physical signs might not be very great, the clinical history differed widely, and to conduct such a case to a favorable termination required all the care and skill of the intelligent physician. Here albuminuria and delirium were almost always present, the temperature rose to 104° or 105°, and the pulse was from 120 to 140; while there was great embarrassment of the respiratory circulation, and consequently a labored heart action.

Dr. Truax said he had tried almost all kinds of treatment, other than venesection, to relieve the heart when obstruction to the pulmonary circulation was very great, and death from heart failure imminent; but with no great success. He lost five patients in succession (all Italians) from this cause, none of whom had more than one lobe of one lung affected, and all having the appearance of comparatively robust men. With this experience before him, to take from such patients venous blood, thus relieving the right heart, and also to some extent diminishing the pulmonary congestion, appeared to him to be rational treatment. Accordingly, the next five patients coming under his care, who seemed to be in great danger of dying from heart failure, were bled; and they all recovered, all the more aggravated symptoms improving immediately after the venesection. He found also that, after bleeding, small doses of antifebrine and quinine were efficient in controlling the temperature and pulse for a long time, while, given in large doses before bleeding, these drugs produced no effect in the same cases.

Dr. Truax then proceeded to give a condensed report of the five cases bled; after which, he suggested the following general rules for the treatment of acute lobar pneumonia. When the patient is first seen, unless it is contraindicated, a brisk cathartic. Should there not be much embarrassment of the pulmonary circulation or a very high temperature, the treatment should be expectant, a liberal milk diet being all that is ordinarilly required. When there is great dyspnœa, high temperature, and a rapid, bounding pulse, active treatment is called for; and, to relieve these symptoms, the patient should first be given ten grains of quinine and three grains of antifebrine every four hours until some improvement is noted. Should improvement not occur within twenty-four hours, venesection should be resorted to, and enough blood withdrawn to relieve the patient. In the five cases reported, from eleven to seventeen ounces were taken; and Dr. Truax said that his experience had led him to believe that bleeding will save many patients when all other means would prove fatal.

Dr. Alfred L. Carroll, of New York, said that there could be no doubt that, in many cases of pneumonia, the need of arterial sedatives was manifestly indicated, and of all arterial sedatives venesection was the most powerful. There was, however, a third class of cases, not referred to in the paper, in which stimulus was urgently demanded on account of the feebleness of the patient. Take, for instance, he said, the average seamstress of the city. In the second class mentioned by Dr. Truax, there was danger of asphyxia, in other words, of the patient's drowning in his own fluid. In such cases, he did not think any intelligent physician, at the present day, was afraid of drawing blood from the arm. The lungs were engorged with blood, and the heart's action embarrassed, and venesection did not cure the pneumonia, but simply removed an obstruction. It was not, therefore, to be regarded as a curative; and in many instances, other arterial sedatives were sufficient to secure the desired end. When these other sedatives failed, it was unquestionably the physician's duty to resort to the lancet. The albuminaria spoken of by Dr. Truax, as occurring in many severe cases of pneumonia, was an indication of the venous congestion met with everywhere in the system.

Dr. E. R. Squibb, of Brooklyn, inquired whether Dr. Truax had ever used veratrum viride, the old substitute for venesection, which often accomplished what venesection would, in cases where the latter was inappropriate. He also asked whether Dr. Truax knew that he could get antifebrine for half the money if he bought it under its other name of acetanilide. The name antifebrine had been patented simply for the purpose of making money, and the same drug sold under that name cost double the price it did under that of acetanilide.

Dr. Murray, of Brooklyn, said that, by giving veratrum viride in doses of from half a drop to two drops every half-hour, he had never met with any difficulty in reducing the temperature. He was in the habit of carrying the drug to the extent of producing nausea; when he gave Dover's powder, and afterward stimulus, if it was required. Personally, he much preferred veratrum to venesection; and he should certainly give it a trial in any case before he resorted to bleeding.

Dr. C. S. Wood, of New York, said that, in former years, it was often noted that veratrum viride and antimony had a marked effect if they were administered after the patient had been bled, but did not exert their appropriate action if given upon venesection. He was firmly convinced that, in the class of cases described by Dr. Truax, there was nothing that could compare in efficiency with bleeding.

Dr. Truax, in closing the discussion, said that he entirely agreed with Dr. Carroll, that, in feeble patients, stimulants were clearly called for; and it was his practice to use them freely whenever they seemed indicated. In reply to Dr. Squibb, he stated that he had often tried veratrum viride; but cases were sometimes met with in which neither it nor anything else would take the place of bleeding.

Recent Literature.

A Text Book of Pathology, Systematic and Practical. By D. J. Hamilton, M.B., F.R.C.S.E., F.R.S.E., Professor of Pathology, University of Aberdeen. Vol. 1, pp. ix, 736. MacMillan & Co., 1889.

With each year the scope of a text-book of pathology increases, and from simply describing the appearances of the tissues and organs after death it now includes an inquiry into the causation of the various phenomena of disease, elucidated by experiment and bedside observation. It has to deal with pathological physiology as well as anatomy.

In the book before us the subject has been treated in this comprehensive way, to be completed in a second volume which is shortly promised.

The first part of this one is devoted to pathological technology. The manner and method of making post mortem examinations; the preparation of tissues and organs for microscopic work; and the obtaining and cultivation of bacteria.

To the methods of making autopsies which have been in use for the past twenty years, little that is new can be added, and the slight modifications advanced are rather to be regarded as personal preferences than any real advance. The author prefers opening the brain by a series of transverse vertical cuts through the whole organ, to first separating the hemispheres by a series of longitudinal ones. This is certainly the best method, if the brain is first hardened in Müller's fluid, as lesions can thus be localized with far greater accuracy than when simply examined in the fresh state at the time of the autopsy.

The part devoted to microscopic technique shows a thorough acquaintance with the subject, and only well-tried and thoroughly approved methods are given. It is especially explicit in directions for the use of the freezing mixture, which is greatly preferred for general use.

The part devoted to bacteriological methods adds but little, as it is not full enough to be of great practical value; for this department has become so extended as to be entirely beyond the field of the general pathologist, and its manipulation should be left to those who have had the extended training of the specialist.

The last part of the volume takes up general pathology and a few subjects in special pathology. In the arrangement there is nothing strikingly new. The latest information is given, however, without too strong a presentation of the author's personal views. But there is evident, throughout, original investigation on his part which carries weight in his judgment of the work of others.

The blood, heart and blood vessels are taken up in the special part and are fully gone into. The normal conditions are always placed before the reader for comparison, and are of great value in this respect. The numerous illustrations are mostly original and clear cut.

We can highly recommend the book as containing a great deal that is very good, clearly arranged and indexed, and if the second volume carries out the subject as well as it has been begun, the work will be a valuable contribution to our text books on pathology in the English language.

Studies in Pathological Anatomy. By FRANCIS DELAFIELD, M.D., Professor of Pathology and Practical Medicine, College of Physicians and Surgeons. Vol. II, Part III. Acute Bright's Disease. Pages 37-64, plates xl-lxxxii. Wm. Wood & Co. 1888.

This is a continuation of a work begun several years ago, of which the preceding parts, treating chiefly of inflammation and diseases of the lungs, have already been noticed.

As the title indicates, this number deals with the kidney. It is the aim of every one who has studied the subject to bring under general heads the various lesions which are found on the post-mortem table, and refer them to some systematic classification. This has been attempted here. The author first gives a capital short resumé of the various views that have been advanced since the time of Bright, and the successive advances which have been made in our knowledge. He then gives his own idea, and classifies all the diseases under the two general heads of Acute or Chronic Bright's Disease.

The former is alone considered here, and is subdivided into acute exudative nephritis, acute degeneration of the kidney, and acute diffuse nephritis. The first is defined as "an acute inflammation of the kidney, characterized by congestion, an exudation of plasma, an emigration of white blood cells, and a diapedesis of red blood corpuscles from the vessels, to which may be added swelling or necrosis of the renal epithelium and changes in the glomeruli. This form may be primary, but generally is a complication of the acute infectious diseases." The second subdivision is "characterized by degeneration or death of the epithelial cells of the tubules, and is caused by the infectious diseases, severe inflammations, and poisons, such as arsenic, mercury, and phosphorus." The third form he regards as the most serious and important. Its lesions are those belonging to the acute exudative type, with two additional changes: (1) A growth of connective tissue stroma; (2) a growth of the capsule cells of the malpighian bodies. This is one of the forms of scarlatinal nephritis. It occurs early and late in the course of diphtheria, is the most important variety of the nephritis of pregnancy, and it is especially frequent as a primary nephritis, with or without a history of exposure to cold."

As presented here we fail to see that there is anything essentially new in his classification, or that there is any distinct advance made. For our own part, we fear that hard and fast lines cannot be drawn, and that, although there appear to be certain end types which are fairly distinct from each other, that there also occur numerous intermediate and mixed forms which will always with difficulty be brought under any system.

His views are illustrated by forty-two plates, chiefly from micro-photographs. These are of large size and beautifully executed. The first ten are of the normal kidney, to be used for comparison. One of the supposed advantages of this mode of illustration is that the reader can study and compare the plates as he would microscopic slides, as they are exact transcripts of nature. We wish, therefore, that the same power had always been employed in the ones which are thus to be used, instead of varying it, as has been done in many cases; thirty diameters to be compared with fifty, four hundred with four hundred and thirty or with two hundred and twenty diameters.

This certainly is the ideal method of illustration, and as marking progress thanks are due to Dr. Delafield for the great trouble he has been at in giving us this handsome book. But we feel in the present stage of the art that the average reader who has not had considerable experience with the microscope will fail to appreciate the differences which are intended to be conveyed here, and which, under the hand of a skilful draughtsman, would have more clearly presented the author's views.

— Dr. J. T. McCormac, writing to the *Medical News*, says that the old saying, that "there is nothing new under the sun," is beautifully illustrated by the latest of Dr. Brown-Sequard's "discoveries." For over twenty years, to the personal knowledge of the writer, and probably for as many centuries, the Chinese have used the testicles of the sea lion for the purpose of stimulating the organs of generation in man, and as a general nerve stimulant.

A great many sea lions are killed, chiefly for their oil; but the bristles, and penis with testicles, are sold to agents of the Chinese. The first are used for ornaments, but the last two articles are used by them as medicine. At times as many as one hundred and fifty are seen drying in the sun. When needed, a portion of a testicle is grated into a vessel, and an infusion is made, which is administered *pro re nata.*

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PROPHYLAXIS OF TUBERCULOSIS.

Report of the Paris Commission. — Instructions to the Public. — The Discussion at the Academy of Medicine.

The Permanent Commission, appointed last year by the Congress for the Study of Tuberculosis, has just presented its report, through M. Villemin, Chairman. This report embodies certain instructions to the public, which the Commission deems of sufficient importance for general adoption. We can only summarize this report, a comparison of which with those issued in Berlin and New York, and previously referred to, offers interest.

Tuberculosis is, of all diseases, that which has the most victims, especially in the cities. More than one-fourth of the mortality of Paris, during the year 1884, was from tuberculosis in some of its forms.

Tuberculosis is a parasitic, virulent, contagious, transmissible disease, caused by Koch's bacillus. The microbe penetrates the organism by food, by air of respiration, and through the skin and mucous membranes by abrasions, excoriations, and divers ulcerations.

Certain diseases, as measles, chronic bronchitis, pneumonia; certain constitutional states due to diabetes, alcoholism, syphilis, predispose to tuberculosis.

The cause of tuberculosis being known, there is but little difficulty in preventing its dissemination and propagation, if proper prophylactic means are taken.

The parasite of tuberculosis may infect the milk, muscles, and blood of animals which serve for the food of man.

Raw meat, underdone meat, blood, may contain the living germ of tuberculosis, and should be interdicted. For the same reasons, milk should be boiled before being ingested. By reason of the dangers which attend the use of raw milk, the protection of young children, who are so susceptible to tuberculosis, should earnestly engage the attention of mothers and nurses. Lactation by a healthy woman is the ideal method. The tuberculous mother should be forbidden to nurse her infant, which should be confided to a healthy wet-nurse living in the country, or where the hygienic conditions are good. The risks of tuberculous contagion are less in the country than in the city. If nursing at the breast be impossible, and the infant is reared on cow's milk, the latter ought always to be boiled. Goat's or ass's milk is less objectionable, and may be given unboiled.

By reason of the dangers which attend the use of butchers' meat, which may come from animals that were tuberculous, though having every appearance of health, the public should insist that the inspection of all meats, as required by the law, should be rigorously enforced.

The only sure way of avoiding the dangers arising from meat derived from tuberculous animals, is to subject such meat to a thorough cooking, which shall include the entire substance in depth, as well as the surface; meats completely roasted, boiled, or broiled are alone safe.

As the germ of tuberculosis may be transmitted from the tuberculous to the healthy man, by sputa, pus, dried mucosities, clothing, or other objects impregnated with fine tuberculous particles, it is necessary for the public, in order to be protected against the contagion:

(1) To know that, the sputa of phthisical patients being the most formidable agents of the transmission of tuberculosis, there is danger in allowing these expectorated matters to be deposited on the ground, on carpets, on drapery, screens, towels, handkerchiefs, clothing, and bed linen.

(2) To be persuaded that the use of spittoons is obligatory on all phthisical patients everywhere. Spittoons should always be emptied into the fire and cleansed with boiling water. They should never be emptied on dung heaps, on garden soil, (where they may tubercularize fowl), nor into privies.

(3) To refrain from sleeping in the bed of a tuberculous patient; to remain as little as possible in a room occupied by such person. This caution is especially applicable to young children.

(4) To sequestrate from all places occupied by phthisical patients, individuals considered as predisposed to tuberculosis; children born of tuberculous parents, or that have lately had measles, small-pox, pneumonia, etc; all diabetic patients.

(5) To avoid using objects which a phthisical patient may have contaminated (garments, bed-clothing, toilet-implements, playthings, etc.) till after previous disinfection (in the hot-air stove, by boiling water, sulphur fumigations, etc.).

(6) To insist that the rooms of hotels, furnished houses, cottages occupied by phthisical patients at watering-places or winter stations, shall be equipped and tapestried in such a way that disinfection may be

easily and completely effected after the departure of each patient. It would be better that these apartments should have no hangings or tapestry, and that they should be whitewashed; the floors should be bare, either oiled or painted. Hotels and furnished cottages in which such hygienic precautions and measures of disinfection are taken should alone be patronized by the public.

At the meeting of the Academy of Medicine, August 6, 1889, this report was discussed. Dujardin-Beaumetz was in favor of suppressing entirely the sections pertaining to raw meat and raw milk. There is nothing that proves the possibility (in man at least) of the transmission of tuberculosis by butchers' meat. As for milk, if it be true that it may on certain occasions contain bacilli, we must not forget that in order that milk may be thus contaminated the cow must not only be tuberculous, but must also have tuberculous mammitis.

Germain Sée did not believe in the communication of tuberculosis by the air of respiration. The bacillus cannot live in the air; it never develops and multiplies outside of the organism of man or the animal; in the open air it dies rapidly, as, in order to live, it needs a temperature of 30° C. The matter of atmospheric contagion is a bugaboo, which has already wrought trouble in families by causing the poor consumptive to be treated like a leper — shunned and abandoned by his nearest relatives. It has been demonstrated experimentally, that air taken three or four yards from the bed of a consumptive patient does not contain a single bacillus; but if the air exhaled by a phthisical person is inoffensive, the sputa are not so, and too much pains cannot be taken to disinfect and destroy all expectorated matters.

With regard to the prohibition of meat and blood, it is a fact, said Professor Sée, that the blood is never virulent, and animal flesh, according to recent experiments (Nocard, of Alfort), far from containing bacilli, destroys them by the muscular juice which the flesh contains. Hence, there is no necessity, in order to destroy the bacillus, to boil meat to a pap, to forbid roast meat, or underdone meat, or even raw meat. If we were to hearken to the Commission, he thought we should be deprived of some of our best alimentary products, and nothing would be served on our tables that was not spoiled to the taste by over-cooking, as well as rendered more indigestible thereby.

With regard to the care that should be taken of those that were hereditarily predisposed to tuberculosis, he thought that excessive precaution was an evil; the best prophylactic is gymnastic exercises and hydrotherapy.

Professor Sée did not think persons especially liable to tuberculosis, who had been subject to colds, bronchitis, or who had had pneumonia, measles, whooping-cough, or small-pox. On the contrary, he had found such persons remarkably exempt from tubercular diseases.

TUBERCULOUS MEAT.

SIMULTANEOUSLY with the report of the Permanent Commission of the French Congress on Tuberculosis, we have before us a voluminous report from Glasgow,[1] giving the proceedings at trial, under petitions of the Glasgow local authority, against two butchers who exposed for sale, for human food, the carcasses of two tuberculous animals. Among those giving testimony at the trial we find the well-known names of Dr. J. B. Russell, Medical Officer of Health for Glasgow since 1872; Joseph Coats, pathologist to the Royal Infirmary of Glasgow, and Prof. J. McCall, Principal of the Glasgow Veterinary College. In addition, there were the medical officers for Edinburgh and Greenock, and for Leeds, Birmingham and Hull; three other veterinary pathologists besides McCall; and Mr. Mayland, as a bacteriologist and pathologist in addition to Dr. Coats. There were, in all, fifteen witnesses for the prosecution and nineteen for the defence. The conclusions of the French Congress, as well as of the Brussels Veterinary Congress of 1883, and of a Departmental Committee of the Privy Council, were frequently referred to in the course of the testimony.

The cases were test cases, brought to enable the medical officers of Glasgow to apply the same stringent standards as were already enforced in Edinburgh and Greenock.

The evidence showed that, in regard to one of the animals, "there were tubercles in the substance of the lungs themselves, in both the costal and pulmonary pleura, in the pleura connected with the diaphragm, and further in the cavity of the body enclosing the respiratory organs;" there was tubercular deposit in the lymphatics, and tubercular bacilli were found in the inguinal gland. In regard to the other, it was shown that there was active tuberculosis in the lungs and pleura, and bacilli were found in the prepectoral gland. The question before the court was, whether the meat of these animals after the carcasses had been "stripped" was "unfit for the food of man."

The prosecution laid down five propositions, and asked for conviction upon their acceptance by the court: (1) The disease called tuberculosis, whatever form it may assume, whether phthisis, or scrofula, or struma, is a widespread disease amongst animals and man, and to it may be attributed a large percentage of the deaths in the community, and a very large proportion of the ill health. (2) That the disease known as tuberculosis now, is identical in man and in the lower animals. (3) The disease is communicable from the lower animals to man, by, amongst other means, inhalation and ingestion. (4) The disease tuberculosis is due to the active presence of a specific organism known as the bacillus tuberculosis. (5) Given the signs of tuberculosis upon certain specific organs of an animal, you may and ought reasonably to infer that the virus of the disease is in other portions of the carcass of the animal, where there may be no outward and visible signs to indicate its presence.

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[1] Tuberculous Meat. Proceedings at Trial under Petitions, at the Instance of the Glasgow Local Authority, against Hugh Couper and Charles Moore, before Sheriff Berry, at Glasgow, on May 28, 29, 30, 31, and June 1 and 17, 1889. Interlocutors, June 20, 1889. Glasgow Printed by William Hodge & Co. pp. 111.

The defence held that: No one has ever yet heard of a case of tuberculosis contracted from the ingestion of tuberculous meat; but in the case of milk, the disease has been traced, and if in the latter, why not in the former; that cooking was a sufficient safeguard, and if people preferred to eat partially cooked meat, they should be allowed to take whatever infinitesimal risks might exist; that, even when the bacillus enters the alimentary canal, there must be a degenerated condition of the tissues before it can find lodgement and fructify; that to a healthy person, therefore, the danger is perfectly visionary; that the alimentary canal is the least favorable channel for entrance into the system; that the disease in these cases was so localized as not to affect the flesh in general; that, in any case, the danger to health and life must be extremely small, too small to justify the exclusion from the market or destruction of large amounts of good, wholesome food.

The prosecution pointed out the inherent difficulty of proving, as a matter of fact, and not merely as a matter of opinion, the actual communication of tuberculosis to human beings by the ingestion of the flesh of tuberculous animals; and adduced evidence that the flesh of animals affected with tuberculosis, more or less, and offered for sale for food in Glasgow, is one half per cent. in the year.

In summing up the evidence and the arguments, the court held that: Whether ingestion be or be not the commonest way in which tuberculosis is communicated, it must certainly be regarded as one mode of its communication; except on the footing that the meat was the medium of the transmission of the disease, it would be unnecessary and wasteful to exclude from the food-supply the carcasses of animals suffering from tuberculosis, however generalized and extensive; but the previously existent practice in Glasgow and elsewhere of condemning extensively diseased animals, clearly showed that the transmissibility of the disease by ingestion had long been recognized, and the evidence lead to the conclusion that it would not be proper to trust to cooking as a sufficient protection; that every animal suffering from tuberculosis, however limited in degree or apparently in locality, probably ought to be condemned, and that such condemnation would not cause a loss of food of more than one-quarter of one per cent; but, in the present instances, the disease, having extended to the lympathic glands, was undoubtedly generalized.

The number and character of the witnesses, the clearness of statement of the counsel, the respectability of the court and the Scotch reputation for shrewd, practical common sense, give the report and result of this trial a considerable interest, as bearing upon the present position of science and practice in regard to the questions involved. Should it ultimately appear, as we see by the published abstract of a paper, to be read at the approaching meeting of the Association of American Physicians, Dr. H. C. Ernst thinks he is in a position to prove, that the milk from a cow suffering from tuberculosis is dangerous as an article of food, no matter where the pathological change may be situated, and that Koch's limitation of the danger to tuberculosis of the lacteal tract was too restricted, then the position of those who condemn the meat, even of locally infected animals, would be greatly strengthened.

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THE MODE OF ACTION OF HEART TONICS.

Professor Stokvis, of Amsterdam, has recently performed some experiments to ascertain the mode of action of cardiac tonics. In order to do away with all external influences, he experimented with the heart of cold-blooded animals, isolated from the body of the animal, and traversed by an indifferent liquid rich in oxygen.

He observed that digitalis produces on the heart thus isolated an augmentation in the frequency and energy of the cardiac contractions; it acts on the vaso-motor centre, and on the muscular fibres of the small vessels which contract, giving rise to an augmentation of the blood pressure. He infers from these effects that digitalis is always indicated when the pulse is frequent, small, irregular, when there is accumulation of venous blood, and when diuresis is diminished.

Professor Stokvis has made experiments with other substances regarded as heart tonics, with these results:

Adonis vernalis and convallaria majalis have an action much less persistent than digitalis, and may also accumulate in the organism like the latter. On the other hand, strophanthus is more active than digitalis, but has no influence on the vaso-motor centre, and the augmentation of the blood pressure is due solely to its stimulant action on the heart.

As for sparteine, it diminishes the force of the heart, and does not act on the vaso-motor centre.

Caffeine possesses a very marked diuretic action; it acts in a special manner on the epithelial cells of the uriniferous tubes, and augments both the frequency of the pulse and the blood pressure.

◆

ON HYPNOTISM AND SUGGESTION IN THE TREATMENT OF MENTAL DISEASES.

At the recent Congress of Experimental Hypnotism, held in Paris, August 8–12, 1889, M. Aug. Voisin, of Paris, referee, spoke of the treatment of mental diseases by hypnotism. Till 1880, hypnotism in the insane was considered an impossibility. At this epoch M. Voisin succeeded in a case of acute mania; then he sought to hypnotize other insane patients, and succeeded in obtaining hypnosis in ten per cent. of the patients. He has applied hypnotism to combat the vices, the grovelling inclinations, the abuse of medicines, certain defects of the intelligence, the neuralgias, the contractures, etc., in the insane.

Much time and patience, he says, are required; one must repeat ten and even twenty times the attempts. Lethargy or somnambalism must be obtained, but better the former. Let the patient sleep half an hour or an hour at the first *séance*, and do not commence suggestion until the second.

M. Voisin takes up but one delirious conception at a time, and lets the patient sleep a long time, even twenty-four hours. The "suggestion" must be uttered distinctly and imperiously. The patient must be disengaged from all external influences, then each hallucination must be combated successively; his delirium *must be worn out piecemeal.* Then the patient is persuaded that a cure is possible, and lastly this is affirmed.

The lunatic sometimes manifests bad temper when his hallucination is combated; it is then necessary to insist until his consent is obtained. The operator should be careful not to suggest illusions of any kind; he should give only good advice, counsel work, etc.

Voisin claims excellent results from this practice, in the troubles and hallucinations of the senses or of the general sensibility in dyschromatopsia, in anæsthesia and hyperæsthesia, in neuropathic paralysis and contractures, and in onanism. He claims, moreover, to have found hypnotism very efficacious as a means of moral discipline in degenerate and profoundly vicious children. He has observed relapses in a tenth of the cases, and has found it necessary frequently to renew the treatment.

At the same meeting, Dr. De Jong spoke of the value of hypnotism in melancholia. This is one of the psychoses most favorably influenced. He has also known hypnotic suggestion to cure agoraphobia, the fear of thunder, the "*folie de doute*," and writers' cramp!

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MEDICAL NOTES.

— The 57th Annual Meeting of the British Medical Association was held from August 13th to 16th, at Leeds. The attendance was over 900. The address in Medicine was given by J. Hughlings Jackson; and that in Psychology by Sir James Crichton-Browne. The meeting was under the presidency of Mr. Wheelhouse, and it is said by our British contemporaries to have been one of the most successful ever held.

— The new building for Christ Hospital, in Palisade Avenue, Jersey City Heights, is now nearing completion. It will be finished in October, and will be opened and dedicated with interesting ceremonies. The new building is three stories high, built of red brick, with brown and gray stone trimmings. It is in the shape of a cross, and over the entrance is inscribed, "Christ Hospital, A. D., 1888. Erected in Memory of Richard Mason Abercrombie." The view to be had from the windows is beautiful, and all the rooms are commodious.

— The following call has been issued: "The members of the medical profession in Alabama, Georgia and Tennessee are requested to meet in Chattanooga on the third Tuesday in October, for the purpose of forming a Tri-State Medical Association. All will be admitted to the meeting of the Association, but the membership will be restricted to graduates of regular Medical Colleges in good standing."

This call is signed by committees from Jackson County, Alabama, Medical Society; Chattanooga, Tennessee, Medical Society; Cleveland, Tennessee, Medical Society; Cartersville, Georgia, Medical Society, and Dalton, Georgia, Medical Society.

— The *New York Medical Journal* says that some medical students have asked the Mayor of New York to allow them a certain number of condemned dogs from the pound, for experimental purposes; that functionary has duly considered the request, also the protest of a certain humane person who dreads the cruelty to which the dogs might be subjected by the students, and has come to the conclusion that he will allow the students a supply of dead dogs but no live ones. This generosity reminds our contemporary of Artemus Ward's, as exemplified in his answer to a person who had asked the privilege of seeing his show without paying — "No, you can't go in without paying, but you can pay without going in."

One of the latest inventions in sanitation is machinery for personal washing, says the *Popular Science Monthly.* A French colonel, according to Mr. Edwin Chadwick, ascertained that he could wash his men with tepid water for a centime, or one-tenth of a penny a head, soap included. The man undresses, steps into a tray of water, and soaps himself, when a jet of tepid water is played upon him. He then dries and dresses himself in five minutes, against twenty minutes in the bath, and with five gallons of water against seventy in the usual bath. In Germany they have an arrangement under which half a million of soldiers are regularly washed. By an adaption of the apparatus to the use of schools, a child may be completely washed in three minutes.

BOSTON AND NEW ENGLAND.

— A reporter gained access to the Boston Dispensary, the other day, and witnessed the application of the "suspension treatment" to a friend of his, presumably for tabes dorsalis, and after describing the apparatus, announces that it was first introduced into this country six months ago, and was the invention of Dr. Sayer, a Russian!

— A correspondent sends the following prescription. It was presented at one of our local drug stores, a short time since:

Bolsom kaparie.
Cramatarie spirits nitre.
sulphuratis zyne and rose water.

There were no quantities affixed. The disease for which it was deemed a cure is obvious.

— Dr. J. B. Andrews, of Mary Fletcher Hospital, has been elected Instructor of Physiology in the winter course of the Medical department of the University of Vermont; Dr. Linsley, who has held the position, being obliged to resign on account of his engagements in New York.

— The resignation of Dr. Charles E. Woodbury as Superintendent of the Rhode Island Hospital will take effect September 1st. The directors of that institution have chosen as his successor, Dr. John M. Peters, of Syracuse, N. Y. Dr. Peters is a graduate of Harvard Medical School, and during the year and one-half previous to May 1st, acted as house-officer at the hospital.

— Dr. Robert T. Davis, of Fall River, has been selected by Governor Ames as the third member of the Metropolitan Drainage Commission; the other two members (who have been confirmed by the Executive Council) being Hosea Kingman and Tilly Haynes. Dr. Davis, in addition to considerable political experience, including among other service that as mayor of Fall River, state senator, and member of Congress, brings to the Board a good sanitary knowledge. He was at one time a member of the State Board of Health.

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Miscellany.

PHENACETIN IN PERTUSSIS.

Dr. George C. Irwin, of Sabetha, Kansas, reports in the *Archives of Pediatrics*, August, 1889, a case of uncomplicated pertussis, with severe laryngeal spasms of hourly occurrence, in an infant aged three months, for which, after using atropia, antipyrin, quinine, and other remedies so often recommended for this disease, he gave phenacetin in one-half grain doses in ten drops of pure glycerine, which is a moderately good solvent, and was surprised to find that it immediately gave relief, so that the first night after using it every four hours the child obtained six and one-half hours' good rest, and there has been a steady and gradual improvement since.

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TREATMENT OF UTERINE COUGH.

The *Revue Gén. de Clin. et de Thér.* of June 27th, states that the valerianate of quinine will be found most valuable in the treatment of uterine cough. Its beneficial action is ascribed to its antispasmodic properties, as the affection itself is of a reflex nature.

I.

℞	Valerianate of quinine	grs. xv.
	Infusion of black coffee	f ℥ jv,
	Simple syrup	f ℥ jss M.

Sig. — One, two or three large spoonfuls after meals.

II.

℞	Valerianate of quinine	s. a.
	Extract of quinquina	

Divide into ten pills.
Sig. — One pill after each meal.

The drug may be prescribed either in solution or pill form, as above. If the former is used, the addition of an infusion of black coffee will be found valuable. — *Medical News*.

MEDICAL MINIMS AND SURGICAL SAWS.

The most effective instrument of medical surgery is the nail-brush.

The patient's interest in his own case is clinical; it is rarely pathogenetic, and never necroscopic.

A long prescription maketh no one fat but the druggist.

Better is aqua fortis with a ready stomach, than the best drug of the pharmacopœia and retching therewith.

Woman has some organs outside the pelvis.

Berlin makes a physician learned; Vienna skilful; the bedside wise.

The same channel brings their bread alike to the harlot and to the virtuous midwife.

The truly *necessary* calls upon a physician will about suffice to pay his tythes.

In the domestic republic the family physician is nominated by the husband, but confirmed in executive session by the wife.

The good medical Samaritan must needs look to it lest he be sued for the quality of his wine and oil, the speed of his beast, and the roominess of the quarters he provides in the inn. Albeit he gives of them all the best he has, he may find that the one who has most fallen among thieves is himself.

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THE DIAGNOSIS AND THE TREATMENT OF ECTOPIC PREGNANCY.

The above subject is considered by Dr. H. T. Hanks in the *New York Post Graduate Journal*, for July, 1889; and, after reviewing his own cases, the writer reaches these conclusions:

(1) *Electricity.*— If the diagnosis is made during the first three months, and if the symptoms have been only the early or premonitory symptoms of rupture, use electricity.

(2) *Laparotomy.*— If the diagnosis is not made until the fourth month and the severe symptoms continue, do a laparotomy, and remove the sac and contents in the most approved manner.

(3) *Laparotomy.*— If a diagnosis is made at whatever stage of ectopic pregnancy, and if the symptoms are alarming, and undoubtedly due to rupture and loss of blood, do a laparotomy at the earliest possible moment consistent with the patient's ability to endure an operation.

(4) *Delay a laparotomy until the seventh month.*—If the diagnosis is made after the fifth month, and the symptoms are less and less severe, the fœtus undoubtedly not in the Fallopian tube, and if the patient is anxious to bear a living child, and you are prepared to watch the patient, and be ready to meet, by laparotomy, at a moment's notice, any emergency which may arise, then delay is justifiable until the child is viable, in order that a laparotomy may be performed with the possibility and probability of saving *both* mother and child.

Operate in best manner for removal of dead fœtus.— When the pregnancy has continued beyond the ninth month, and the fœtus is found to be dead, the *amount* and *character* of *general* and *local disturbance* occasioned by the dead fœtus must determine when an abdominal section should be made, other operations performed, and the offending body removed.

A CASE OF ARROW POISONING BY CURARE.

Mr. Joseph White described to the Nottingham Medico-Chirurgical Society, as we learn from the *Lancet*, the case of a servant girl aged twenty-three, who, while standing on a pair of steps dusting some shields, etc., on the walls of the hall, fell to the ground, and in her fall had her right arm pierced by the point of an Indian arrow, which was arranged point upward in a stand below. The arrow was withdrawn in two minutes, and the patient was seen within half an hour of the time of the accident. When seen, the patient was in a state of collapse, with slow, shallow, jerking respiration and very feeble circulation. As the wound was throughout its track covered with brown (apparently vegetable) substance, it and the surrounding tissues were immediately freely excised and stimulants administered. The breathing becoming rapidly more slow and feeble, and then ceasing, an interrupted galvanic current was passed through the diaphragm, and artificial respiration kept up for more than an hour, during which time the heart acted extremely feebly. In two hours from the occurrence of the accident, and when artificial respiration had been maintained for about an hour and a half, respiration gradually returned and the pulse improved, and in a short time the patient was able to take small quantities of fluid nourishment, and during the day she gradually revived. For three or four days the girl remained in a very feeble condition. She was drowsy and disinclined for any mental effort, had persistent loathing of food, nausea, and constant headache, and during this time there was a large flow of urine of low specific gravity (1008), showing traces of albumen, and on the third day very slightly bloody. There was no trace of sugar. The wound on the arm after excision rapidly got well. It was believed that the arrow had been poisoned with woorari (curare), which was shown by experiments of Claude Bernard, Sibson, and others, to produce effects of a strikingly similar kind to those observed in this case.

TWO CASES OF ANTIFEBRIN POISONING.

The *Medical News* has collated two recent cases of antifebrin poisoning. The first case, reported in the *Münch med. Wochenschrift*, No. 19, 1889, was that of a man, aged thirty-four, who fancied he had symptoms of fever, and procured from a druggist six antifebrin powders, of fifteen and one-half grains each. Returning home he took one powder every hour until five had been taken, beginning at 8.30 P. M., the total amount being seventy-seven grains. At four o'clock in the morning the patient was seized with violent diarrhœa. At about noon his appearance was as follows: Conjunctiva, lips and mucous membrane of mouth were blue; pulse small, but of normal frequence; heart normal. The urine gave aniline reaction. Extreme weakness, dizziness and chills; temperature 99° F.; evening, 101° F. Temperature on the following day, morning, 95° F.; evening, 100° F. The diarrhœa persisted for several days, the stools being quite watery and of a grayish black color. The patient suffered from loss of appetite, and recovered but slowly. In ten days he was able to be about again.

The second was reported in the *Wiener med. Presse*, No. 16, 1889, and has the following history: the patient was a girl, who, to relieve an attack of hemicrania, had taken sixty-two grains of antifebrin. Immediately after taken the dose she experienced nausea, eructations, and later, pain in the region of the stomach, and copious vomiting of a greenish watery fluid. These symptoms were followed by cyanosis, at first only of the lips, later of the entire face, hands and feet, whilst the skin of the body was pale and very cold. Pulse weak, almost imperceptible, but frequent, 140 pulsations to the minute; respirations shallow and rapid; the patient almost entirely unconscious. Later, symptoms of cerebral irritation manifested themselves: enlargement of the pupils, muscular twitchings of the face, gritting of teeth, rigidity of the extremities, and delirium. The patient then sank into a deep coma, from which she awoke in three hours.

Eight hours after the poisoning her senses fully returned, pulse eighty-four, and fairly strong; respirations normal, temperature somewhat sub-normal. Patient complained of pain in the stomach, and dizziness. Cyanosis disappeared in twenty-four hours. In two days the patient was able to leave her bed.

Correspondence.

EFFICACIOUSNESS OF THE ELIXIR VITÆ.

Boston, September 2, 1889.

Mr. Editor, — A merry pal of the writer, who comes directly from the headquarters of the elixir vitæ, quotes the following tidbit from *Figaro:*

An aged *viveur*, upon the point of espousing a young and pretty girl, consults the inventor of this popular brew, with a view of obtaining a renewal of youth.

"Mais c'est bien facile, monsieur." The aged scientist, turning to his assistant: "Apportez moi un lapin seulment."

"Je ne veux pas de lapin," replies the to-be husband. "I must have the glands of some more noble animal, — a lion, *par example*, or, at any rate, a bull."

"Allez chercher le taureau!" And the injections were skilfully and quickly given.

Three months later the couple meet again in the street.

"Eh bien, monsieur; et votre mariage?"

The seeker for youthful virility says not a word, but, removing his hat, exhibits a pair of small but flourishing horns! Senex.

PARIS LETTER.

The Paris International Congress of Therapeutics and Materia Medica.

Paris, August 16, 1889.

Mr. Editor, — An International Congress of Therapeutics and Materia Medica is so unusual an event, that a few lines concerning it may interest the readers of the Journal, of whom I suppose some have remained in America, notwithstanding the fact that one meets here more medical acquaintances and more medical fellow-countrymen than at home.

This congress met in Paris during August, and was the first of its kind which has ever been held. It has awakened the interest of a large number of medical men, of whom more than five hundred were inscribed as members just before the congress opened.

The meetings continued through three days, with long sessions in both morning and afternoon. The morning sessions were in sections, — one devoted to therapeutics, the other to materia medica. The afternoon meeting had a more general character, and included both sections of the congress. The excellent arrangement of all that has been presented at the meetings was a characteristic feature. On the morning of the first day, only twenty minutes were required to transact the general business of the congress and begin its work.

The length of the communications to be presented was limited to ten minutes each, and irrelevant remarks were skilfully cut short. In this way it was possible to have a considerable number of communications presented, and then discussion was full of life and interest.

Socially, the congress was entertained by Professor Dujardin-Beaumetz and his wife at a brilliant reception at their house: it was much enjoyed by a large number of those who came to the congress. Another delightful evening was passed at a banquet in the marvellous Eiffel tower in the Exhibition grounds. After the dinner, through the kindness of M. Eiffel, an ascent was made to the top of this most wonderful structure. The view of the illuminated carpet a thousand feet below, including the Exhibition grounds and Paris, was a very beautiful sight.

From a medical standpoint the congress was full of interest; and, besides the value which the communications will have when published, there will remain the encouragement and enthusiasm which such a gathering imparts to those who have shared its activity and enjoyed the pleasure and profit of acquaintance and discussion. Further, it will develop a more comprehensive conception of the questions involved in the treatment of disease. The enthusiast for some special form of relief for a given disease may learn at such a gathering that other methods have been equally successful; he may also be lifted to a point where he can appreciate the true relation borne by his observations to the general principles which underlie the treatment of that disease. The opportunity to observe how the same problem affects minds of medical men of various nationalities is most suggestive and instructive, and the whole question of treatment, as well as the special topic under discussion, is presented to the listener with a sweep and breadth not easily attained in any other way. Frequent meetings of those who are active in this department of knowledge can be made of much service; everything which will assist medical men to study the problem of giving relief to their patients from the widest possible standpoint will promote the simplification and advance of therapeutics.

As an indication of what will be accomplished at future meetings the result of this congress is full of promise. There will be a second meeting of this congress two years hence in Brussels.

F. H. W.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 24, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	769	355	28.86	11.70	19.50	2 60	2.60
Philadelphia	1,040,245	426	202	18.63	8.75	11.73	4.14	.92
Chicago	830,000	436	239	34.04	9.20	22.77	3.45	5.52
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	200	90	28.00	8.00	18.00	6.00	2.50
St. Louis	450,000	155	63	17.55	6.46	7.80	5.85	2.60
Boston	413,567	235	88	30.10	5.59	17.20	4.26	6.02
New Orleans	250,000	—	—	—	—	—	—	—
Cincinnati	225,000	115	—	32.19	10.44	12.18	5.22	10.44
Washington	225,000	125	61	28.80	6.40	15.20	5.60	3.20
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	60	27	16.66	6.66	9.99	4.99	—
Portland	40,000	18	9	22.22	11.11	22.22	—	—
Worcester	78,292	29	15	37.95	13.80	31.05	3.45	—
Lowell	71,518	50	29	40.00	12.00	28.00	2.00	6.00
Cambridge	65,552	25	13	40.00	12.00	28.00	4.00	4.00
Fall River	62,647	41	26	31.16	7.32	29.28	2.44	2.44
Lynn	53,334	18	0	—	5.55	—	—	—
Springfield	40,731	8	5	—	—	—	—	—
Lawrence	40,619	28	10	—	—	—	—	—
New Bedford	37,253	23	13	—	—	—	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	16	8	18.75	6.25	12.50	—	6.25
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	—	—	—	—	—	—	—
Haverhill	26,058	16	7	12.00	12.50	6.25	—	—
Taunton	25,170	16	4	18.75	12.50	12.50	6.25	—
Gloucester	24,263	8	3	20.00	—	20.00	—	—
Newton	21,553	5	0	—	—	—	—	—
Malden	19,774	9	2	33.33	22.22	11.11	11.11	—
Fitchburg	17,534	10	3	20.00	—	20.00	—	—
Waltham	17,332	5	2	40.00	—	20 00	—	20.00
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	9	2	22.22	11.11	22.22	—	—
Quincy	13,728	8	3	37.50	25.00	25.00	—	12.50

Deaths reported 2863: under five years of age 1279; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 842, consumption 270, acute lung diseases 145, diarrhœal diseases 504, typhoid fever 109, diphtheria and croup 99, whooping-cough 30, malarial fever 16, cerebro-spinal meningitis 12, scarlet fever 10, measles 7, erysipelas 5. From whooping-cough, New York 16, Chicago 4, Philadelphia and Boston 3 each, Cincinnati Lowell, Cambridge, and Malden, 1 each. From malarial fever, New York 8, Washington 3, Baltimore 2, Philadelphia, Boston and Charleston, 1 each. From cerebro-spinal meningitis, Washington 3, New York, Chicago and Cincinnati 2 each Boston, Worcester and Gloucester 1 each. From scarlet fever, New York, Philadelphia, Chicago and St. Louis 2 each, Baltimore and Lowell 1 each From measles, Chicago and Cincinnati 2 each. New York, Boston and Haverhill 1 each. From erysipelas, New York 3, Philadelphia 2.

The meteorological record for the week ending Aug. 24, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Aug. 24, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...18	30.06	67.0	76.0	58.0	76	66	71.0	W.	W.	5	7	C.	C.		.0
Monday,..19	30.03	68.0	79.0	58.0	74	72	73.0	W.	W.	11	9	C.	O.		.0
Tuesday,..20	29.95	72.0	80.0	65.0	81	72	76.0	N.W.	S.E.	11	2	F.	C.		.0
Wednes...21	29.93	71.0	77.0	65.0	65	72	68.0	N.W.	S.	4	10	C.	C.	0.15	.T
Thursday,.22	29.88	76.0	82.0	69.0	70	59	74.0	W.	W.	12	8	C.	C.		.0
Friday,....23	30.04	70.0	77.0	63.0	63	71	67.0	W.	S.E.	4	4	O.	O.		.0
Saturday,.24	30.12	65.0	68.0	62.9	95	100	98.0	N.E.	S.E.	2	4	R.	G.	12.00	.39
Mean for Week.	30.00		77.0	63.			75.0							12.15	.39

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

SOCIETY NOTICES.

Association of American Physicians. — Programme of the Fourth Annual Meeting, to be held in the Medical Museum and Library, corner of Seventh and B Streets, Washington, D. C, September 18th, 19th and 20th, 1889.

Wednesday, September 18th — Morning Session, 10 A. M. (1) The President's Inaugural Address. Francis Minot, Boston. (2) General Business. (3) The Early Stage of General Paralysis C. F. Folsom, Boston. (4) Tetany. James Stewart, Montreal. (5) Tetany and a New Theory of its Pathology. John T. Carpenter, Pottsville.

Afternoon Session, 2.30 P. M. (6) Thrombosis of the Cerebral Sinuses and Veins. A. B Ball, New York. (7) Chylous Effusions into Serous Cavities. S. C. Busey, Washington. (8) Substitutes for Opium in Chronic Diseases. J. F. A. Adams, Pittsfield. (9) Remarkable Case of Slow Pulse. D. W. Prentiss, Washington.

Thursday, September 19th. — Morning Session, 10 A. M. (10) Discussion on the Relation between Chlorosis, Simple Anæmia, and Pernicious Anæmia, including Leucocythæmia and Hodgkins' Disease. Referee, Frederick P. Henry, Philadelphia; Co-Referee, F. Forchheimer, Cincinnati. (11) Primary Cancer of the Duodenum. E. N. Whittier, Boston. (12) Primary Cancer of the Gall Bladder and Ducts. John H. Musser, Philadelphia. (13) Gastric Neurasthenia. G. M. Garland, Boston

Afternoon Session, 2.30 P. M. (14) Specimens from two Cases of Cretinism. W. F. Whitney, Boston. (15) The Anatomical and Physiological Relations of Lesions of the Heart and Kidneys. H. F. Formad, Philadelphia. (16) The Contagium of Diphtheria. P. Gervais Robinson, St. Louis. (17) A Supplementary Inquiry into the Frequency with which Lead is found in the Urine. James J. Putnam, Boston.

Friday, September 20th. — Morning Session, 10 A. M. (18) General Business. Report on Nomination of Officers and Members. (19) Discussion on the Relations of Rheumatism to Rheumatoid Arthritis; Referee, William Osler, Baltimore; Co-Referee, Morris Longstreth, Philadelphia. (20) How Far may a Cow be Tuberculous before the Milk becomes Dangerous as a Food Supply? Harold C. Ernst. Jamaica Plain. (21) The Bacillus Tuberculosis. J. T. Whittaker, Cincinnati. (22) Hot Air Inhalations in Tuberculosis. E. L. Trudeau, Saranac Lake. (23) Concluding Business.

On Thursday evening it is proposed that the Association shall have an Annual Dinner. Definite information concerning this dinner will be given at the morning session of Wednesday.

American Gynecological Society. — Programme of the Fourteenth Annual Meeting, to be held in the Massachusetts Institute of Technology, Boylston Street, Boston, September 17, 18, and 19, 1889. Physicians are cordially invited to be present.

First Day. Morning Session at 10 o'clock. Roll-call, Reception of Guests, etc. Address of Welcome. Dr. J. P. Reynolds, Boston. (1) A Case of Interstitial Pregnancy — Rupture of the Uterus and Laparotomy. Dr. R. S. Sutton, Pittsburg. (2) The Use and Abuse of Antiseptic Injections in Obstetric Practice. Dr. H. J. Garrigues, New York. Discussion to be opened by Dr Fordyce Barker. (3) A Digest of Twenty Years' Experience in the Treatment of Cancer of the Uterus by Galvano-Cautery. Dr. John Byrne, Brooklyn. Discussion to be opened by Dr. Reeves Jackson. Afternoon Session at 3 o'clock. (4) The Nature and Limitation of Operative Treatment for Uterine Fibroids. Dr. P. F. Munde, New York. (5) The Diagnosis and Treatment of Fibroid Tumors. Dr. W. Gill Wylie, New York. The discussion of these two papers will be opened by Dr. T. A. Reamy, Cincinnati. (6) A Case of Sloughing Intra-Uterine Fibroid. Dr. E. Van de Warker, Syracuse. Discussion to be opened by Dr. S. C. Gordon.

Second Day — Morning Session at 10 o'clock. (7) A Case of Abdominal Lipoma Simulating Ovarian Tumor. Dr. Reeves Jackson, Chicago. Discussion to be opened by Dr. Wm. T. Howard. (8) The President's Address. Dr H. P. C. Wilson, Baltimore. (9) Electro-Therapeutics in Gynecology. Dr. G. Apostoli, Paris. Discussion to be opened by Dr. A. J. C. Skene. (10) Death from Visceral Lesions following Ovariotomy. Dr. H. C. Coe, New York. Discussion to be opened by Dr. H. Marion-Sims. Afternoon Session at 3 o'clock. (11) Renel Disease, caused by the Disease of the Pelvic Viscera. Dr. George J. Engelmann, St. Louis. Discussion to be opened by Dr. H. J. Kelley. (12) Pelvic Congestions *vs.* Pelvic Inflammations. Dr. S. C. Gordon, Portland. Discussion to be opened by Dr. T. A. Emmet. (13) The Relation of Uterine Retro-Deviation to Pregnancy. Dr. A. Martin, Berlin. Discussion to be opened by Dr. P. F Mundé. (14) Nephro-Lithotomy. Dr James R. Chadwick, Boston. Discussion to be opened by Dr. C. C. Lee. Evening Session at 8.30 o'clock. Business Meeting with closed doors.

Third Day. — Morning Session at 10 o'clock. (15) Results of Repression of Menstruation, Dr. E. C Gehrung, St. Louis. Discussion to be opened by Dr. E. W. Jenks. (16) Intermediate Trachelorraphy, Dr. H J. Boldt, New York. Discussion to be opened by Dr. Bache Emmet. (17) A Contribution to the Clinical History of Cystic Degeneration of the Ovaries,— with a Report of Cases and Specimens, Dr. R. B. Maury, Memphis. Discussion to be opened by Dr. W. M Polk. (18) Partial Rotation of the Ovum in early Pregnancy as a Cause of Placenta Praevia. Suggested by two cases in Practice, Dr. E. W Sawyer, Chicago. Discussion opened by Dr. A. F A. King. (19) The Protective Influence of Vaccination during the Intra-Uterine Existence of the Fetus, Dr C. Kollock, Cheraw, S. C. Afternoon Session at 3 o'clock. (20) The Value of Laparotomy in the Diagnosis and Treatment of Minor Forms of Intra-Abdominal and Intra-Pelvic Disease, Dr. T. A. Ashby, Baltimore. Discussion to be opened by Dr. A. W. Johnstone, Kentucky. (21) A Brief Report of my own Abdominal work, for the year ending September 1, 1889, Dr. R. S. Sutton, Pittsburg. Discussion opened by Dr. E. C. Dudley. (22) The Surgical Treatment of Posterior Displacement of the Uterus. Dr. W. M. Polk, New York Discussion to be opened by Dr. W. M. Baker. (23) The Effect of Ergot upon the Parturient Uterus, Dr. John Goodman, Louisville, Ky. (24) In Memoriam. — Dr. J. B. Hunter, New York. Dr. H. C. Coe, New York. (25) In Memoriam.— Dr. Ellwood Wilson, Philadelphia. W. H. Parish, Philadelphia.

OBITUARY. EDWARD G. UFFORD, M.D., M.M.S.S.

Dr. Edward G. Ufford, who was nearly eighty-eight years old, died in his home in Agawam, August 25th. He was born in East Windsor, Conn. in November, 1801. He was a graduate of the Yale Medical School, in 1845, and began practice in West Suffield, since then having practiced in South Hadley, West Springfield, and Agawam. For years he had been a member of the Hampden County Medical Society, and was formerly president of the Hampshire. He lived in South Hadley twenty-two years, and was one of the original corporators of the Seminary. He was one of the oldest Masons in the Connecticut Valley, having joined the order in 1825

BOOKS AND PAMPHLETS RECEIVED.

McGill University, Montreal. Annual Calendar. Faculty of Medicine Fifty-seventh Session, 1889-90.

Original Articles.

PARTIAL TENOTOMIES IN CASES OF NEURASTHENIA, WITH INSUFFICIENCIES OF THE OCULAR MUSCLES.[1]

BY MYLES STANDISH, M.D.,
Ophthalmic Surgeon, Carney Hospital; Assistant Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary; etc.

The ordinary symptoms of an error of refraction are well known, and are grouped under the descriptive title of Asthenopia; they consist of blurring of print, smarting of the lids, pain in the eyes and orbits, a heavy, dull pain in the temples or over the brows, and are often accompanied by occasional prostrating sick-headaches. All of these symptoms are aggravated upon any attempt to do near work, and some are relieved by the cessation of such work. There is no mistaking the cause of such a group of symptoms. The act of accommodation is evidently the source of the difficulty.

In normal eyes asthenopia is never felt until the accommodation has been sufficiently lost by the natural course of events to make near work difficult. In the hypermetropic eye (the short eye), on the contrary, asthenopia may appear very early in life. We do not have to search far to find a reason for this. Such a short eye, in order to focus a picture of a near object upon its retina, must do all the work that the normal eye does, plus the amount of its error. Moreover, such an eye must accommodate in order to see distant objects distinctly. Hence the constant strain and consequent fatigue. Astigmatism also is a common source of asthenopia, the cause of the nervous disturbance being, in this case, not so much due to the amount of labor put upon the ciliary muscle, as to the character of the work.

In an ordinary case of asthenopia, with all the symptoms present, the diagnosis, as I have said, is easy; but when the headache becomes very prominent, and the other symptoms are very slightly felt, or are not present at all, and especially when the headache does not appear until some hours after the use of the eyes, which has originated the nervous disturbance, then the diagnosis is not so apparent. To this class belong the large majority of school-children who have violent sick-headaches at frequent intervals; the many professional men who find it necessary to drop all work, and go off on short vacations every few months, and who return from such short trips with an improvement in mental and physical conditions which seems out of all proportion to the length of the vacation. To this class also belongs the business-man who spends his Sundays reading books and newspapers, and who invariably has a headache Monday morning. Herein lies the value of the change of scene, so advantageously prescribed by physicians in cases of physical depression of obscure origin. I believe that mere change of scene never improved a man who habitually lead an out-of-door life.

As I have implied above, refractive headaches bring in their train great impairment of mental and physical vigor. The dull, heavy pain in the head, accompanied as it generally is by a constant sense of fulness, is, in itself, very depressing; and when to this is added the occasional sick-headache, the result is a feeling of lassitude which is never absent so long as the use of the eyes is continually adding to that load already too great for the nervous system to carry.

Headaches and neurasthenic conditions are often much mitigated by the correction of errors of refraction when the starting-point of the reflex process is not in the eyes, but in the digestive or reproductive tract. In these cases the relief from the additional nervous irritation, caused by the strain upon the ciliary muscle and its auxiliaries, will reduce the severity of an habitually prostrating sick-headache to a so much milder form of cephalgia that the patient can go about and attend to his duties. The relief from the physical depression consequent upon such repeated prostrations may go far toward making successful the treatment of the original cause possible.

The treatment of an error of refraction is, of course, to place before the eye such a lens as will enable it to do its work with no more labor than would be required by a normal eye. The effect of such a lens is often marvellous. As soon as the eyes become accustomed to the new conditions, the headaches disappear entirely, together with irritability, choreic-like movements of the hands or head, and many obscure sensations and pains, previously referred to various causes. The patient, from being very nearly an invalid, is transformed into a well man, and is enabled to do his daily task with but a tithe of the accustomed fatigue. He is enabled to go to the theatre without paying the penalty of a headache the following morning, although the headache had always been attributed to the bad air of the theatre. He finds that he can do with impunity many other things which before always exhausted him, such as travelling on the railroad, visiting picture-galleries, etc. In short, he finds his general vigor and health much improved. In order to do away with the refractive strain in these neurasthenic cases, it is absolutely necessary that the correction of the error should be perfect, and that the lenses should be set in the frames with mathematical accuracy. If an incorrect lens is prescribed, or a cylindrical lens is set so that the axis is not correct, we have created an artificial astigmatism which is, when the glasses are worn for any length of time, as disastrous as the original error; although I have seen an incorrect lens give relief, apparently through doing away with the accustomed form of irritation, and to continue to so give relief until the cumulative effect of the fatigue from the new source of error was sufficient to develop the whole train of symptoms anew.

There is a certain class of cases in which the use of the eyes seems to stand as the direct cause of extraordinarily severe headaches, frequently accompanied by a condition of nervous prostration which utterly unfits its victims for the duties of life, yet when the errors of refraction are corrected only partial relief is obtained, and that not enough to be of material benefit. The direct relationship between the use of the eyes for near work and the most tremendous outbreaks of cephalgia and general nervous disturbance would seem to point to the eyes as in some way the direct precipitating cause, yet, as I have said, correction of refraction in the most careful manner utterly fails to give the relief we expect.

This class of cases is explained of late by attributing the cause to eye strain arising from an insufficiency of one or more of the recti muscles. This explanation has, a *priori*, many arguments in its favor. It is but natural to suppose that in the case of any abnormality in the strength of the recti muscles there should be as much difficulty and fatigue experienced in maintaining binocular vision as there is in keeping the eyes constantly accommodated for distant vision in an error of refraction. The ciliary muscle and the recti muscles have to a great extent the same nerve supply, and it would seem that a reflex irritation would be as easily obtained from one source as the other. The confusing effect of slight diplopia associated as it is with ocular vertigo is well known.

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[1] Read at the meeting of the American Ophthalmological Society, July, 1889, to which is added a few introductory remarks.

Although this source of reflex irritation would seem so probable but very little has been done by ophthalmologists for the treatment of these difficiencies of the ocular muscles. An occasional pair of prisms has been ordered and their continual use has generally proved unsatisfactory, or at rare intervals a tenotomy of the overbalancing muscle has been performed. As a rule, however, no treatment for the inequality of the muscular balance has been attempted. Within a few years Dr. G. T. Stevens has proposed that as prisms did not accomplish the hoped for result in these cases, it was logical and proper to adopt operative interference and proposed an operation similar in character and method to a strabismus operation with the exception that the tendon of the overbalancing muscle was only partially severed from the globe, and the portion cut was only the central portion of the insertion, leaving the outer edges of the tendon intact.

The results obtained by this operation have been loudly extolled by Dr. Stevens and a few enthusiastic followers. It has been claimed by them that the eye strain in cases of illy balanced ocular muscles was responsible to a very large extent for all varieties of functional nervous disturbance. Not only were severe headaches and neurasthenia cured by this operation, but also neuralgia, chorea, epilepsy, and insanity. One writer in a recently published work on nervous diseases goes so far as to credit this operation with the cure of a case of chronic dyspepsia. The extravagance of these claims has undoubtedly prejudiced many gentlemen against the operation, and as a result, this method of treatment has not been generally accepted. Many have urged theoretical reasons why this particular form of operation should not accomplish the mechanical result desired, but as yet very few have actually tried the operation and reported the results.

In this state of affairs the question can only be settled by the public record of the experiences of different operators, and that is my reason for reporting this short series of cases.

With cases of chorea, epilepsy, insanity, dyspepsia, etc., I have had no experience. My patients have all been persons invalided by constant and severe headache, accompanied by a more or less neurasthenic condition which has utterly incapacitated them for their duties in life. The condition of such patients is truly deplorable, the victims of a constant dragging headache which increases to intolerable torture if they stir abroad or use their eyes for reading or any near work at home. They retire at night greatly fatigued, and arise in the morning with an aching head and burning eyes. This condition of affairs goes on for years, and the patient becomes a petulant, peevish suffering invalid. Every practitioner of medicine has sooner or later found himself utterly helpless in the face of such a situation, and if it is possible by the relief of the strain caused by unbalanced ocular muscles to so lighten the load of nervous irritation, under which the patient is struggling, as to give him a practical cure of his asthenopia and neurasthenia, it is a possibility that should be thoroughly investigated.

It is true that very many such cases are entirely cured by the proper correction of errors of refraction, but a certain proportion of cases are relieved only for a short time by the lenses, and if tested will be found to have marked ocular insufficiencies.

The methods of examination as yet devised for the examination of the recti muscles are rather crude and inaccurate. The methods are two: —

First. In examining for the condition of the internal and external recti, for instance, a vertical diplopia is artificially produced by placing a prism before one eye with its base up. A lighted candle is placed at twenty feet in a darkened room. Then if one image of the candle flame is directly over the other the muscles are said to balance, but if there is a lateral displacement there is said to be an insufficiency. A similar test with a prism base in gives the balance of the superior and inferior recti. The measure of the amount of the insufficiency is obtained by placing prisms with their bases at right angles to that of the prism producing the diplopia, and recording the number of degrees required to place one image over the other. The variation at successive examinations in the number of degrees required to make the diplopia vertical in this test is sometimes very great. This is no doubt partly due to inherent difficulties in the method of examination which produce faulty observations, but I am sure that it is to a greater extent due to the physical condition of the patient at the time of the examination. If fatigued and exhausted a greater amount of insufficiency will be manifested than if the head is clear and the physical condition good.

Second. The practical strength of the muscles to fuse diplopic images into one, when such images are artificially produced, by placing a prism before the eyes with the base up or down, or in or out.

Theoretically one would suppose that these two tests would supplement and confirm each other, but practically I have often found this not to be the case at any single sitting. In fact, the results of these examinations of the ocular muscles are often exceedingly confusing, and vary greatly from day to day. It is customary to explain this variation by saying that the patient acquires the trick, after a while, of using his muscles under these new conditions, and so the different results are simply a record of the proficiency acquired in this new form of gymnastics. This explanation is to a certain extent true, and accounts, no doubt, for the much higher result obtained by the second method of examination after it had been repeated several times. It fails, however, to explain all the variations obtained, especially the results obtained by the first method of examination.

Recognizing the difficulties of accurate diagnosis by these methods of examination, it has been my practice to order prisms with the bases in the proper direction, to alleviate any strain that might be present from the supposed insufficiency as shown by these tests; to have them worn continuously for a longer or shorter period and see if any alleviation of the symptoms followed. I have a number of times confirmed myself in my opinion by reversing the prisms, and finding that with this change the symptoms were aggravated.

With these introductory remarks I will now report five cases which I have abstracted from my records, and which constitute the entire number of such cases upon which I have operated.

Case 1. First seen by me August 11, 1887. B. H. R., clergyman, thirty-one years of age. A man of healthy appearance and robust stature. Has had asthenopia for six or seven years and has been treated by several gentlemen distinguished in the profession. Glasses, Dyer's method of progressive use of eyes, etc., have been prescribed without relief. The last two years the headache from the use of eyes has increased so that he has been obliged to give up all reading, and now the least excitement prostrates him with a headache. He cannot go down town, ride in the horse cars or make a social call, except in the dark, without precipitating a violent headache. Has been obliged to give up his duties on account of his infirmity, and for eighteen months has been almost an invalid. Cannot read over two pages without being obliged to stop on account of the pain. V. O. U. $\frac{12}{\text{x}}$. Ophthalmoscopic examination entirely negative. Overcame prisms today when looking at a lighted candle at a distance of twenty feet, four degrees with the base up or down — eight degrees with the base in, and twenty-five degrees with the base out.

Græfe's vertical diplopia test, with same object and distance, showed a state of muscular equilibrium. In a state of accommodation when one or the other of the eyes is covered, it apparently converges a little. On August 22d, after a week's use of a solution of atropine and cocaine in each eye, there appeared a hypermetropia of 0.50 Diopters in each eye; but the muscles overcame prisms only to the following extent when tested as before, — three degrees base up or down, six degrees base in, twelve degrees base out. Vertical diplopia test, as before, requires three degrees, base out, to place one image over the other. The inconsistency of this examination is obvious. If the ability of the muscle to overcome prisms is of any value as measuring the strength of the muscles, the above examination shows an insufficiency of the internal recti. If, on the contrary, the Græfe vertical diplopia test is of any value when applied as above, then there is an insufficiency of the external recti.

These examinations were repeated at intervals of four or five days until October 3d. The results, with regard to the ability to overcome prisms, was not found to vary much as to the vertical muscles, but the lateral muscles varied very considerably. When the base of the prism was placed toward the nose, the eye could fuse the images some days with eight degrees before one eye, another day three degrees would give permanent diplopia. With the base turned outward, the variation ran from twelve degrees to twenty-one degrees.

The vertical diplopia test, however, remained pretty nearly constant, requiring four degrees to five degrees base out, to place one image over the other. On October 3d, prisms were ordered two degrees base out. before each eye for constant use. October 22d, the patient reports that his eyes feel much better. Has left off his blue glasses which he had worn for eighteen months, and wears only the prisms without experiencing any photophobia. Has read an hour at a time. Has considerable headache still. I then reversed the prisms, placing their bases in, and on November 14th he reports that his eyes have been extremely painful. Has not been able to read any; headaches have returned with redoubled violence, and is obliged to lie down in a darkened room most of the time. The ability of the muscles to overcome prisms, when tested under these conditions, did not seem to stand in any relationship to the manner in which the prisms were worn, as for instance, when the prisms had been worn base in, on one occasion, the eyes overcame twenty-one degrees base out, and on another, twelve degrees, exactly as happened when the prisms were worn with their bases out. On the other hand, during this period if tested by the vertical diplopia test, the equilibrium was found to be perfect, which would seem to show that the added muscular exertion required to overcome the prisms worn (four degrees bases in), continued after they were removed, and exactly counteracted the natural insufficiency of the externi. The prisms were replaced with their bases out for distant use; and I ordered +0.50 D. combined with prism one degree base out, O. U. for near use.

With these glasses his headaches were much relieved. He was able to read to a limited extent, and could go about without the great fatigue or the neurasthenic symptoms which of late had attended all exertion. The eyes were examined from time to time after the prisms had been replaced with their bases out, with somewhat varying results as to ability to overcome prisms, but with an average about as follows, — three degrees up or down, eight degrees base in, and twenty-one degrees base out. Such a condition of the muscles as the above average would indicate is about the normal standard, I believe, except, perhaps, that twenty-one degrees is rather low for the limit of power of the internal rectus. The Græfe test required five degrees base out for vertical images. This latter test, together with the fact, that, if he omitted wearing his glasses for several hours, he invariably had a headache, determined me in my diagnosis of an insufficiency of the external recti. A partial tenotomy of the tendon of the internal rectus of one eye was proposed with the idea of restoring the muscular equilibrium.

The operation was promptly accepted; and on May 21, 1888, Dr. W. D. Hall being present, I cut about three millimetres of the centre of the tendon of the left internal rectus at its point of insertion. Two days later the patient reported that he had omitted the prisms since the operation, and that his head had not felt so well for six or seven years. Has walked two miles to my office without fatigue. Felt like a new man. Had tried to read with his prisms, but found that they made his eyes water and that he could read quite well without them, Overcame prisms four degrees base up or down, — nine degree base in, and nineteen degrees base out. Vertical diplopia test showed an equilibrium.

On July 6th, reports that several weeks ago he resumed his clerical duties and could do them without fatigue. Has resumed the use of prisms for reading, otherwise goes without them. Can read two or three newspapers through without fatigue. Reads several hours daily. On December 11th, I found that one degree base out was necessary for equilibrium with the vertical diplopia test at a distance of twenty feet. This condition has remained up to the present time, and on May 8, 1889, the gentleman says that he never has headaches, that while his eyes do not admit of constant near work without fatigue, he is able to do all his work and some collateral reading. This report only lacks a few days of a year from the date of the operation, during which period he has had absolutely no treatment.

I have reported this case somewhat fully, in order to illustrate the difficulties of an accurate diagnosis, but the remaining four cases I will report in a somewhat briefer form.

CASE II. M. M., female, aged forty-two, teacher by occupation. She was first seen by me in June, 1887, complaining of asthenopia. Manifest hypermetropia found of 0.75 D. For reading, found that 2 00. D was necessary to give comfort. I ordered these glasses. The patient returned to me in May and June, 1888, complaining that she could only do her work with the greatest difficulty, on account of the pain in the head and eyes, and that the smarting of the lids was something extreme; and, as there was a distinct conjunctivitis, treatment by astringents was instituted, but this failed to give relief. The eyes were examined under homatropine, and hypermetropia of 2.00. D. O. U. found. The muscles overcame prisms two degrees base up or down, three degrees base in, and twenty-one degrees base out. Vertical diplopia test, at twenty feet, required two degrees base out. Ordered more persistent use of glasses and continual treatment of lids.

Although not teaching at this time, the patient's condition became gradually worse. Head ached most of the time. Pain in the eyes always present. Complained greatly of many rather fugitive pains. Was always greatly fatigued, and incapacitated from doing even her household duties. At my suggestion she was examined by her physician, who reported that the only cause he could find for her condition was overwork.

Her eyes were examined from time to time, and the ability to overcome prisms was found to be as follows: two degrees base up or down, three degrees base in, and twenty-five degrees base out. This condition remained pretty constant during the four months from June to November. The amount required to place one image over the other in the vertical diplopia test varied from two degrees to five degrees base out.

As the patient was now unable to attend to her duties, and seemed to be rapidly descending into a condition of nervous prostration, a partial tenotomy was advised and accepted. The operation was done November 13, 1888.

The operation was partial tenotomy of the internal rectus of the right eye. The insertion of the tendon was severed, so that the merest shred was left. When the operation was finished the divergence was quite marked, and diplopia was present. Eight hours after the operation, the visible divergence still persisting, and as the patient said all objects "looked funny," I thought best to approximate the edges of the cut in the tendon by a suture that was drawn up until I could see no divergence.

The operation was followed by considerable relief of the general fatigue; could work about the house. Headaches much relieved. There was still some pain in the eyes, however.

Examinations for the two weeks after the operation showed an ability to overcome prisms of two degrees base up or down, five degrees base in, and twenty-one degrees base out. Graefe test for distance required a prism of three degrees base out.

This patient has been able to do her work since the operation without fatigue, and her general condition is much improved. There is still considerable complaint of the eyes, It seems to me probable that we should have had a better result if I had drawn my corrective stitch less tightly.

CASE III. Mrs. R. W. B., fifty-one years of age, was referred to me by Dr. E. H. Bigelow, of Framingham. She gave the following history at her first visit on August 3, 1888: "Four years ago had an illness which was marked by pain in the region of the heart and hyperæsthesia. Said to have been accompanied by marked dimness of vision. During the attack light and sounds were extremely annoying." Has never been well since. Has headache pretty much all the time. Headache severe enough to incapacitate her from doing anything, and much worse upon any attempt to do near work. There is a constant sense of fulness in the head, accompanied by a feeling of extreme lassitude. The eyes are sore and painful, and patient dreads to move them about. Has worn dark glasses for two years. Patient kept the eyes closed most of the time when talking, and when asked why she did this, said it relieved the distressed feeling. Sensation of fatigue in eyes present upon first awakening in the morning. The slightest excitement, or the shortest railroad journey, brings on a violent headache, that confines the patient to her room for several days.

Upon examination, the condition of the eyes was found to be as follows: V. O. U. $= \frac{14}{x}$ not improved by any lens The muscles overcame prisms of two degrees base up or down, seven degrees base in, and eight degrees base out. Graefe vertical diplopia test, with a candle at twelve feet in a darkened room, showed muscular equilibrium at twelve inches; the same test required five degrees base in to bring the images vertical.

I advised, for experiment, a prism of two degrees base in before each eye for constant use. On August 27th, the patient reported that the prisms had given much relief to the ocular symptoms, but that otherwise she was about the same. Muscle test at this visit showed a power to overcome prisms of two degrees base up or down, eleven degrees base in, and eight degrees base out. The vertical diplopia test required, at twelve feet, three degrees base in; and, at twelve inches, seven degrees base in.

The bases of the prisms were then reversed, and upon September 14th, the patient reported that all her symptoms were much worse, as indeed her excitable manner during her visit plainly showed. This excitable condition produced a somewhat startling change in the tests with the prisms; for that day she overcame three degrees base down, four degrees base up, seven degrees base in, and *twenty-eight* degrees base out. The vertical diplopia test at twelve feet as before, required six degrees base *out*. Nevertheless, a partial tenotomy of the external rectus of the left eye was proposed, which was subsequently accepted, and on October 13th, I operated on the external rectus of the left eye. Cocaine was used. I cut the central third of the insertion of the tendon which was rather broad. An hour subsequently to the operation the vertical diplopia test showed equilibrium of the muscles for distance.

On November 14th, the patient reported that for two weeks following the operation she had felt perfectly well. Could not remember feeling so well since a child. Had attended some private theatricals and gone about very considerably. Since then the use of the eyes for near work had given some discomfort, and if long continued was followed by severe headache. She considers herself well by comparison. Has no sense of fulness in the head. The weariness had disappeared. Does not dread to look at people or to move the eyes as formerly. The eyes are now rested in the morning. Has no headaches except upon long-continued near work.

Prism tests of the muscles showed ability to overcome three degrees base up or down, nine degrees base in, and twenty-eight degrees base out. The vertical diplopia test at twenty feet required three degrees base in. I prescribed prisms one degree base in, before each eye, for near work.

December 19th, patient reported as follows: Has been very well, much better than ever before. Does not feel absolutely strong, and has a feeling as if it would be possible to overwork herself, if she was not somewhat cautious.

In February I wrote to Dr. Bigelow a letter of inquiry, and received the following reply: "Mrs. B. is very much improved in her general health since your treatment of her eyes. She seems like another person now, as I meet her. She certainly appreciates highly the help you have given her."

Case IV. Mr. W. B. N., twenty-seven years, student, married. Was first seen by me on September 22, 1888. Patient was a large, athletic-looking man, and in flesh and color appeared to be a well man. The history was, that ten years or more ago patient "broke down" during his college course; at this time he was troubled with occasional diplopia. Dr. Agnew was consulted in New York, and said that there was insufficiency of the interni; prescribed prisms, and hinted at a possible operation on the eye muscles. The prisms were worn a short time with relief, and were finally omitted on the advice of another eminent ophthalmologist. Within a few years his eyes had been examined under atropine, and Cyl. + 1, 00. D., axis vertical O. U., ordered for reading. Patient has had four years of nervous prostration. Has been better the last six months. Has used eyes more than usual of late. Still has many nervous symptoms, and is obliged to rest much, and to devote much time to sleep, if he would feel at all well. Two weeks ago he began to walk unsteadily. Saw double when he arose in the morning. Has been nauseated by this diplopia. Diplopia has continued of late for three-quarters of an hour after arising. Can ordinarily have diplopia or not at will. Of the false images in the morning, one was above the other, and some distance to one side. Diplopia crossed.

The power of the muscles to overcome prisms was as follows: one degree base down, four degrees base up, six degrees base in, and fifty degrees base out. This latter result was accomplished by blurring the image, and it is probable that the accommodation was exerted to its fullest extent in the attempt to overcome the prism. Graefe vertical diplopia test twelve feet, showed equilibrium of muscles.

After two days of complete rest the muscle tests were as follows: Overcame prisms, two degrees base up, two degrees base down, seven degrees base in, fifty-nine degrees base out. Graefe vertical diplopia test required five degrees base in, for equilibrium. Ordered prisms two degrees bases out for trial.

September 29th, patient reported that the glasses had nauseated him, and aggravated all his symptoms. The prisms were reversed, and on October 6th, the report was that the glasses had given relief to the eyes, but that other symptoms were the same.

After this, many variations of the prisms were tried, with bases up, down, etc., with rather indecisive results as to the vertical recti, but a pretty constant evidence of insufficiency of the internal recti, and on November 17th, I did a partial tenotomy of the external rectus of the left eye. The central transverse incision of the tendon was not over two millimetres. On November 28th, the patient's statement of his condition was, "Have had to go back to the two degree prisms bases in, but with them, am much better off than before with three degrees or four degrees."

On December 1st, I did a partial tenotomy on the external rectus of the right eye. This operation still left, when entirely well, an insufficiency of the internal recti; and although at first it apparently gave considerable relief, the patient has gradually fallen back into his previous condition.

An operation on one of the vertical muscles was not accepted; and on April 12th he wrote me in response to an inquiry: "I am somewhat dependent upon the cylindro-prismatic glasses; I still seem to have about six degrees of lateral insufficiency; health has been about as wretched as usual."

Case V. — G. P. H., forty-four years, clergyman, married. Seen by me on November 17th, 1888, and gave the following history: First broke down five years ago. Is said to have had nervous prostration. His condition has varied from time to time, but of late has steadily grown worse. Cannot attend to his duties, cannot read, sleeps very poorly. Is troubled much by pain in the forehead and back of the neck. Has sensations of weakness. If he attempts any work, has a nervous feeling or thrilling, which alarms him and incapacitates him for proceeding. Has a constant feeling of fatigue in the head. Has had two attacks of vertigo, after straining his eyes, which entirely disappeared upon closing the eyes. When he first began to preach, stammered, and overcame the fault with difficulty.

V. O. U. = $\frac{20}{xv}$ + Vertical diplopia test, at twenty feet, required prism one degree base out, to place images vertical. Muscles overcame prisms of four degrees base up, three degrees base down, four degrees base in, twenty degrees base out. Ophthalmoscopic examination revealed nothing abnormal.

Has worn, by advice, + 60 inch lens O. U. for reading, for the last few months. Advised prisms two degrees base out for constant use, for diagnostic purposes.

The gentleman returned to me on December 1st, and said that he had been very much relieved by the glasses. Had used his eyes freely. Headaches and other pains very considerably diminished.

Graefe vertical diplopia test showed an insufficiency of six degrees of the externi; and the muscles overcame a prism of four degrees base up, three degrees base down, eight degrees base in, and sixteen degrees base out, showing once more the inconsistency of these two tests, which are supposed to prove the same thing.

The glasses were then reversed; and four days later the patient reported that he could read very well with the prisms placed bases in, but that all his nervous symptoms, such as fatigue and distress in the head, had returned with their accustomed sequelæ.

The prisms were again placed bases out, and gave immediate relief. He was enabled to do some literary work, and did not become so exhausted upon slight effort. He was kept under observation for nearly eight weeks, and tested frequently. The relief afforded by the prisms, which was so marked at first, gradually diminished until, in the latter part of January, the eyes ached at night very considerably, and the patient was obliged to relinquish all work on account of the general symptoms. During this period the muscle tests ran pretty uniformly, as follows: Prisms overcome, at a distance of twenty feet, two degrees base up or down, six degrees base in, twenty-two degrees base out. Vertical diplopia test required five degrees base out, to place images vertical.

On February 2d, 1889, I did a partial tenotomy of the internal rectus of the left eye. About four to five millimetres of a very broad insertion were cut. Operated under cocaine. An immediate trial with candle and red glass showed a crossed diplopia. In five minutes, however, it had disappeared. The operation was not immediately followed by any gain, except that dizzy sensations in the head, to which he had before been subject, had entirely disappeared. Twelve days after the operation the Graefe vertical diplopia test showed muscular equilibrium.

On March 2d, patient reported that he felt distinctly better. His eyes were comfortable; his neuralgias had disappeared; he had no dizzy spells or trembling attacks; and, to judge by his face and general appearance, one would say that he was evidently much better.

In response to a letter of inquiry, the gentleman writes me, under date of April 16th: "I began preaching after I saw you, and have been able to keep it up every Sunday, once a day; but I have felt rather exhausted some of the time. On the whole, there has been a gradual improvement, — I ought to say, a very decided improvement in some respects, — and I am still gaining. . . . The ability to do some professional work must be attributable largely, if not entirely, to the operation; and this is a gain of incalculable value."

I have reported these cases more at length than I should otherwise have done, but for the desire on my part to emphasize the utter unreliability of the results of any single examination for proving the existence of insufficiencies of the ocular muscles.

If the cases are studied in detail, it will be found that the condition that was ultimately proved to be the cause of all the disturbance was rarely discovered at the first examination, and that it was only when the muscles had been relieved of their extra load, by the use of prisms, that the true state of affairs was revealed. Again, what is to be especially noticed in these cases is the fact that the von Graefe test for insufficiency and the ability to overcome prisms, which are supposed to be only different methods for arriving at the same facts, should so frequently show exactly opposite results. From my experience in these five cases I should say that, while I would not discard the trial of the ability of the muscles to overcome prisms, I should rely much more upon the results of the von Graefe test. I desire also to call attention to the fact that the constant use of prisms for a few days was a much more satisfactory method of trial. It is evident from the results obtained in these cases that when the weak muscle had an additional burden laid upon it by the prisms, that the disagreeable symptoms were aggravated, and *vice versa* when the burdens of the weak muscles were relieved and the severity of the symptoms abated.

With regard to the ultimate results in the cases reported, it would seem that if the incision had been a trifle freer, so as to have weakened the muscle a trifle more, that the results might have been better in the first, second and third cases. In the fourth case the result, although so far a failure, is so, apparently, because there is still a large amount of lateral insufficiency left, and also, probably, because there is a certain amount of vertical insufficiency which has never been corrected.

The results obtained in the first, second, third and fifth cases are highly satisfactory to the patients and encouraging to the operator, and have been accomplished after all other means had been tried and failed.

A word as to the number of such cases, and then I am done. From an ophthalmologist's point of view I should say that they were not numerous. The vast majority of cases of headache and neurasthenia, which have the eye for their starting point, are completely relieved by properly correcting glasses, and this too, when an insufficiency exists, according to the von Graefe test.

The correction of errors of refraction in neurasthenic cases should be done with the utmost care. An error of half a diopter in a spherical lens, or of ten degrees in placing the axis of a cylindrical lens, is sufficient to continue nervous disturbance.

A number of times, when I thought I had gotten another case to add to the number reported here today, I have found that I was mistaken, and that all that was needed was a more careful examination for errors of refraction than the patient had hitherto received, and a very slight alteration in the formula.

I say that these cases are probably rare, for the reason that I have been industriously looking for them for three years among all the clinical material at my command, and I have only found three cases in addition to those reported. These three cases all refused operation. It is probable that such cases may be more numerous in neurological than ophthalmological clinics.

In conclusion, while I am not in a position to judge as to the efficacy of partial tenotomies for the treatment of epilepsy, insanity, etc., I do believe that it is of great advantage in a certain class of neurasthenics.

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FRACTURE OF THE SPINE.

WITH A CASE TREATED BY THE PLASTER-OF-PARIS JACKET.—DEATH.

BY U. O. B. WINGATE, M. D., OF MILWAUKEE.
Visiting Surgeon to the Emergency Hospital.

THE advancement made of late in the surgery of the brain and spinal cord seems to call for a full report of all cases coming under observation, whether originating from traumatic or other causes.

The following case, together with the remarks appended thereto, is related simply as additional evidence to that long list of cases which may some time furnish material for useful conclusions.

F. R. D., a healthy man, thirty-six years of age, by occupation a carpenter, was struck in the back by a swinging blow from a heavy staging. He appeared much hurt, was first taken to his home, then brought to the Emergency Hospital, where he was entered about noon, November 5th, 1888. I saw him very soon after he was admitted, which was about two hours after the receipt of injury. He was suffering from severe shock; complained of great pain in the back; mind was clear; there was a marked deformity of the spine near the junction of the dorsal and lumbar vertebræ. The upper portion of the spine appeared to project slightly out over the lower portion. There was complete loss of motion and sensation below the seat of injury; retention of urine; no priapismus; no crepitus could be made out.

At 4 P. M. the patient, having rallied somewhat from shock, with the kind assistance of a number of gentlemen of the hospital staff, was carefully etherized and suspended *à la* Sayre, extension made, and the deformity reduced. A plaster-of-Paris jacket was then with much difficulty applied. The patient became pulseless, and had to be let down twice; but he came out from the ether well, and was much relieved of his pain. Unfortunately the material for the plaster bandage was poor, and the jacket was unsatisfactory.

November 6th. There is partial return of sensation in the lower extremities, but no return of motion. There is some pain, which is relieved by small doses of morphia administered subcutaneously. Tympanities is troublesome; relieved by several punctures into the colon through the abdominal walls, made by a small aspirator needle. No harm came from these punctures, the needle being thoroughly aseptic.

November 7th. The jacket being so unsatisfactory, it is removed; the patient again suspended, this time without an anæsthetic; and a very satisfactory jacket applied. Much pain is produced; patient let down twice in nearly a collapsed condition. After a period of rest he appears quite comfortable.

November 8th. Numbness of right hand complained of, and it is found that the hand and arm are nearly powerless. Much headache.

November 12th. Severe cystitis; headache better; right hand and arm the same; sensation improved. Bladder washed out twice daily with a four per cent. solution of boracic acid.

November 15th. Much pain in the feet and legs.

November 18th. Improvement in the right hand and arm.

November 21st. General improvement. Nearly normal sensation and strength in right hand and arm.

November 28th. On account of a bed sore appearing above the seat of injury, the jacket was removed. Patient can be moved without pain. A small amount of morphia is required at night to insure sleep.

December 4th. Cystitis much better. Right hand and arm fully recovered. Bed-sore healing nicely under a dry dressing of one part tannic acid and two parts iodoform.

From this time to December 25th he seemed comparatively comfortable and holding his own; then he began to fail.

December 31st. Has been failing for several days. Cystitis not troublesome; bladder requiring to be washed out every second day; very little pus. Bed-sore nearly healed. Nearly normal sensation in lower extremities, but no return of motion; appetite, which has been good, is failing; sleep poor. The childish, peevish mental condition which has been prominent throughout is more marked; there is great mental depression, loss of hope and general failure. In a word, the back of the patient seems to be broken in more than one sense. At this time my term of service at the hospital expired, and the case went under the care of my colleague, Dr. Chandler, who reports gradual failure, and the patient died on January 10, 1889, sixty-six days after the receipt of injury. For some reason a complete autopsy was not made, but a portion of the spine was removed which showed a fracture through the body of the first lumbar vertebra, the vertebra being crushed downward and inward upon itself somewhat like a crushed hat; there was also a fracture through both laminæ, also of several transverse processes. No direct pressure was sustained by the posterior part of the cord, but the anterior portion sustained a pressure from the bony formations resulting from the crushing in of the body of the vertebra and the attempted reparative process which was thrown out in a way to diminish the lumen of the spinal canal in a marked degree.

The cord was subjected to pressure at a place just above the corda equina, at which point it showed evidences of marked degeneration. The temporary loss of power in the right hand and arm was supposed to be due to some slight pressure in the cord above the seat of injury, probably from a small clot of blood which soon became absorbed.

There are two points of some practical interest connected with this case, namely, the treatment, and cause of death, to which I desire to refer in a brief manner.

In a very able and concise paper read before the Massachusetts Medical Society, and published in the Transactions, in 1887, by Herbert L. Burrell, M.D., of Boston, under the title of "The Immediate Treatment of Fracture of the Spine by Rectification of Deformity and Fixation by Plaster-of-Paris Jacket," the author, it seems to me, closes his paper with a most valuable conclusion, namely, "My own belief regarding the status which the procedure should occupy in surgery is, that it will occasionally be a life-saving measure; that it should be applied under anæsthesia in all cases of fracture of the spine which are not conclusively known to be irremediable; and that, apart from the chance of recovery offered to the patient by this means, it will almost invariably make the patient more comfortable, in that he can be handled more easily."

Such a conclusion I would but slightly modify at the present time. In the case above reported, on account of the modern brilliant results of operations upon the spinal column by Macewen and others, the question of operating came up. That there was pressure on, or injury to the cord, or both, was evident from the symptoms. Could an operation be done to relieve the cord of pressure, if such existed? Judging from the character of the blow received, the position of the spinal column and the absence of crepitus, I was convinced that there was either a fracture or dislocation, or both, of the bodies of the vertebræ, and that no operative measures, other than that adopted would be justifiable.

On examining the specimen of the spine removed, I think any surgeon will readily understand at once the utter impossibility of remedying the injury by an operation. There is but one part of the spinal canal that can be attacked surgically, as has been pointed out by all writers from early times to the present, and that is from the posterior part through the laminæ. To attempt it from the front or side is impossible at sight.

Macewen, whose results have excited the admiration of all surgeons, says: "Traumatic lesions are, as a rule, so gross, and the destruction so complete, that, in such, operative treatment can be of little service. Still there are cases in which traumatism has produced localized pressure, primary or secondary, which can be relieved."

In this case, although the laminæ were fractured through, there were no fragments pressing on the cord from this source; but the entire direct pressure came on the anterior part of the cord from the crushing in of the body of the vertebræ, and as time progressed the attempted process of repair also being thrown out, added to this, and gradually diminished the lumen of spinal canal. It is true that, by removing a portion of the posterior arches, the indirect pressure would have been relieved; but the direct pressure, which was doing the mischief, pressing upon the cord precisely as a bridge of a violin presses upon the strings, could not be relieved, and any operation with such an end in view would only have added injury to injury to a most unfortunate man. Certainly at the present day no case of injury to the bony spine where there is any evidence ef pressure upon the posterior part of the cord should go unrelieved by operation, but where such evidence does not exist, is a surgeon justified in making an exploratory operation on patients in the condition in which we observe this class of cases? I am not yet convinced that past experience or present and future prospects justify such a course, and desire for myself, should I meet with such an injury, to be spared from such surgery.

The relief from pain, and the ease in which this patient could be moved by his attendants after the plaster-of-Paris jacket was applied, were very evident and satisfactory.

In regard to the second point, namely, the cause of death in this case, it has occurred to me that the severe effects in the nerve centres, in this class of injuries, are often underrated.

This man did not die from septic causes and exhaustion produced by bed-sores and cystitis, as many cases with such injuries appear to do, for in both these respects he was nearly well.

Of what did he die?

In that admirable paper on "Shock," read before the last meeting of the American Surgical Association by Prof. D. W. Cheever, of Boston, he states that as a first degree of shock we have apprehension, and, going on through the degrees, at last we have collapse.

In the case above reported there was severe primary shock, and the degree of apprehension was marked and prominent from first to last. The injury to the cord was sufficient to account for this. The crushed condition of the cord acting on the nerve centre reacted on the ganglia, the heart, the brain; the life kept the patient in a feverish apprehensive state of mind, and this condition of mind reacted in turn to depress the nerve centre and the life. Cheer and assurances from his surgeon and attendants would rally him somewhat from this state, but he would soon relapse again. This went on until the effects of the increased pressure on the cord, together with the progressive ascending degeneration, at last turned the tide against our efforts, and death came with collapse after the patient had passed through all the degrees of primary and secondary shock of long duration.

I would offer by way of conclusion:

(1) The plaster-of-Paris jacket, as advocated by Dr. Burrell, affords at the present time the most promising and satisfactory treatment of all fractures of the spine where the bodies of the vertebræ are involved; but in the light of recent research, in all cases where there is evidence of pressure upon the posterior part of the cord, operation to remove the posterior arches is justifiable, and only in such cases.

(2) The existence of prolonged and dangerous shock, which is so often present in this class of injuries, renders operative measures, which must of necessity be of a very severe nature, highly objectionable, unless some positive evidence is present that such an operation may accomplish positive results by way of relieving pressure upon the cord.

IODOFORM IN DIPHTHERIA.

BY WALTER LINDLEY, M.D., LOS ANGELES, CAL.

AT the recent session of the California State Medical Society, Dr. Walter Lindley, of Los Angeles, read a paper on Diphtheria, in which, after accepting the theory that the microbe is the propagator of the diphtheritic poison, he continues, "How does this poison act?"

Frequently there are deaths from diphtheria where the disease has lasted but a few days. There is no exhaustion to cause heart-failure, and no strangulation; the patient, without a pang or a single struggle, sinks into a gentle lethargy and thus passes peacefully away. In such cases there is usually scanty urine, containing from twenty to fifty per cent. of albumen. Yet there are rarely uræmic convulsions. There is no other disease in which this combination occurs: — scanty urine, retained urea, abundance of albumen, and no convulsions.

It is well known that morphine and chloroform, by soothing the nervous centres, control uræmic convulsions. Is it not possible that this diphtheritic ptomaine acts in a similar manner, quieting the nervous system, and preventing convulsions? As in the case of morphine, if there is an excess of the ptomaine, death ensues. . . .

There is one other point of great value in prognosis, and that is the amount of albumen in the urine. No physician should attend a case of diphtheria without making at least a daily examination of the patient's urine. Dr. G. W. Lasher, who has performed tracheotomy and intubation oftener than any other practitioner in our section, and who has made diphtheria a special study, recently announced in the Los Angeles County Medical Society, that he had never known a case of diphtheria to recover where there existed at any time over thirty per cent. of albumen.

Treatment. — My opinion is that the treatment of diphtheria should be based exactly on the same principles as the treatment of puerperal fever. Antidote the specific poison; the cardinal point in doing this is to destroy, remove and neutralize as much of the poison at point of infection as possible.

When the obstetrician believes septic poisoning is taking place through the uterus, he immediately tries to destroy and remove all septic material at the point of entrance. Not harshly and with force, but with a gentle, soothing intra-uterine douche of hot water, carrying in solution a germicide.

So should the action of the physician be when he is called to a case of diphtheria. If the membrane can be removed without tearing or hæmorrhage, remove it. If it cannot be removed without force, then the utmost efforts should be used to neutralize the septic germs that infest that susceptible locality. It is true that the throat cannot be so satisfactorily disinfected as the uterus and vagina, because it is constantly open to the entrance of air, and nutrient liquids that encourage the development of bacteria are frequently passing over its surface.

Some person says, "If you cannot remove all, why remove any?" Suppose a man has taken a poisonous dose of strychnia, and you know some of it has been absorbed, would you say there was no use of removing the portion of the drug that yet remained in the stomach? We hope to destroy so much of this septic material that not enough will enter the system to cause death. . . .

My own peculiar line of treatment is the use of iodoform, locally and constitutionally. I began employing this remedy several months ago. A case of mine has just proved fatal after intubation and tracheotomy had both been performed. The case then in hand was growing rapidly worse, and the temperature had risen to nearly 105°. The liberal insufflation of iodoform every three hours was then begun, and in twenty-four hours the temperature had fallen to 101½°. The membrane in twelve hours began to have a lifeless appearance, and in 36 hours dropped off entirely. Since that time I have had eight other cases, varying from severe to mild; two being slightly laryngeal in character, four showing from ten to fifty (one case) per cent. of albumen, and all but one recovering. In all these, iodoform has been my chief reliance.

The fatal case was a delicate girl, twelve years of age, suffering from chronic bronchitis. The first day I saw her the temperature was 104°, and the membrane covered the fauces. The urine, immediately on testing with heat and acid, appeared almost solid with albumen, and after settling for twenty-four hours, was half albumen. The nasal complication was also severe. Iodoform was insufflated through mouth and nostrils at least every four hours, after spraying the parts with listerine. The instructions to the nurse were to see that all perceptible membrane was covered with the powder.

After the third day the patient began to improve, and on the seventh day there was no albumen to be found in the urine. The patient was very bright, and I felt happy at the thought that I had a case with which to negative the dictum of Dr. Lasher, that none recovered where there was over thirty per cent. of albumen.

On the thirteenth day, when we thought our patient was about well, she had a severe chill, followed by high temperature and pain in the cardiac region. On examination, consolidation of the base of the left lung was found. The breathing from this time on was very rapid, the temperature high, and the pulse weak and rapid; but neither the membrane nor the albumen returned. On the seventeenth day the patient died from exhaustion. In this case the intercurrent pneumonia evidently caused death. My experience with iodoform justifies its having a further trial. Since beginning its use I have found in current literature six brief references to the subject. In conclusion, I recommend the use of iodoform because:

(1) It prevents the multiplication of bacteria.

(2) It is a soothing local anodyne.

(3) It is like alcohol, in having no toxic dose where the patient is suffering from the diphtheritic poison.

(4) It is so near impalpable that it reaches all portions of the diseased surface.

(5) It adheres for a long time to the surface where it is applied, and thus has excellent local effect before it is absorbed.

(6) It does not cause nausea, and thus interfere with nutrition.

(7) It does not produce diarrhœa or salivation, as is possible from an overdose of the bichloride.

(8) It is quickly and easily applied.

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REPORT ON RECENT PROGRESS IN SURGERY.[1]

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

EXTIRPATION OF THE RECTUM.

W. Levy, Berlin, proposes the following method for resection of the rectum, which he claims to have evolved from experiments and dissection.[13] An incision is made over the sacrum eight to ten centimetres in length, and about two fingers' breadth, above the cornua of the coccyx, through the superjacent soft parts to the bone. From the ends of this incision, two others about eight centimetres long, and at right angles to it, are made through the skin and glutæus maximus muscle. A broad blunt hook is now placed in one of the latter incisions, and it is retracted strongly outward. The greater and lesser sacro-sciatic ligaments are divided to the edge of the bone in the direction of the first incision. This is now repeated on the opposite side, and the fascia separated from the anterior surface of the sacrum with an elevator. The sacrum is now cut across with bone forceps. The flap is thus formed of bone soft parts, and the skin is drawn downward, exposing the rectum, which can be removed, if desired, from near the sigmoid flexure to within two centimetres of the anus. If necessary, on account of the large size of the tumor, the left wing of the sacrum can also be removed as in the Kraske operation. The resected ends of the rectum are united by a double row of sutures carefully set. The reflected sacral flap is replaced and sutured in position, after which the skin wound in its first portion is united. The side incisions are either packed with iodoform gauze, or united, and drained through the lower ends, through tubes which reach to the vicinity of the rectum. An antiseptic dressing or continued irrigation is the subsequent treatment.

THE TREATMENT OF TRAUMATIC SEPARATION OF THE SUPERIOR EPIPHYSIS OF THE HUMERUS.

Helferich[14] treated successfully a boy who had sustained this injury, by opening the joint after an attempt to reduce the deformity had proved unsuccessful, restoring the fragments to their proper position, and fastening them in place with an awl-like steel pin. At the end of eight days the dressing was changed and the pin removed. The joint rapidly regained its function. Lange's case[15] is the only other case on record where this has been done immediately following an injury.

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[1] Concluded from page 230 of the Journal.

[13] Centrbl. f. Chir. 1889, Bd. xvi, p. 218.

[14] München Med. Wochn. 1887, No. 40.

CLINICAL AND EXPERIMENTAL CONTRIBUTIONS TO LIGATURE OF THE FEMORAL VEINS BELOW POUPART'S LIGAMENT.

A recent investigator of these cases[16] has collected twenty-eight cases of this operation, fourteen of which recovered. Gangrene occurred in ten of the fatal cases. From experiments von Koretzky concludes that ligature of the femoral, between Poupart's ligament and the fossa ovalis, is a dangerous proceeding; for, aside from septic dangers, which with proper care may be overcome, Braune has demonstrated the existence of valves in all the veins given off at the fossa ovalis. These valves open towards the common femoral, an arrangement which makes the common femoral the only vessel relieving the return circulation of the lower extremity. The common femoral has no collateral branches. In an anomalous absence or insufficiency of the valves of the internal circumflex vein, this vessel could act as a collateral branch. A pressure of even three metres of water was found insufficient to overcome the resistence of these valves. Advanced age, chronic inflammation or tumors, may produce a collateral circuit from the thigh backward through the veins of the pelvis. Aside from this, Koretzky asserts that a third circulus venosus exists; namely, the circulus venosus subtubere ischii. In advanced age ligation of the femoral is less dangerous.

EXCISION OF BONE TO PROMOTE HEALING OF THE OVERLYING SOFT PARTS.

At the Medical Society of London,[17] Mr. Annandale contributed a series of cases treated by the above method. He says that he and other surgeons meet with cases of large sores which cannot heal because their thin edges are held agape by the bone beneath. Instead of resorting to amputation for these cases, he urged that a sufficient length of the bone or bones of the limb should be excised to permit of the approximation of the edges of the sore and its speedy cicatrisation. Other cases occur, particularly after burns, where an extensive, deep, and tight scar flexes a joint, effectually prevents extension, and in that way seriously cripples the patient. These cases have heretofore been left alone, or ineffectual attempts have been made to splice or stretch the scar. The author of the paper has dealt with them in quite a different way. If the soft parts are too short to permit of the use of the bones beneath, and cannot be lengthened, he shortens the bones. He has, therefore, excised considerable lengths of the bones of the elbow, and has obtained good results — useful, movable joints. Again he has applied the same principle in a case of fracture of the tibia with comminution, where, when the loose fragments of the bone had been removed, a gap remained, which failed to fill up with osseous tissues. A corresponding length of the fibula was removed, which allowed the two ends of the tibia to be approximated and to unite. All these cases are extremely interesting, and form a valuable addition to our knowledge. The treatment is, in reality, an example of "conservative surgery." Hitherto, in such circumstances, the choice has laid between a useless limb and amputation. And the sacrificing of a small portion of a member to restore the function of the whole is but a new application of the old principle of "conservative surgery."

THE TREATMENT OF CAVERNOUS ANGIOMA.

A spontaneous cure, where such tumors exist on the body, results, according to the conclusions of Mosetiz-Moorhof,[18] from (1) the obliteration of the afferent and efferent vessels; (2) spontaneous coagulation of the blood in the interspaces of the growth; (3) progressive limitation and final obliteration of these interstices, in consequence of a chronic inflammatory thickening of the framework of the tumor; (4) compressions from increase of surrounding fat tissue; (5) destruction of new growth by ulceration. These processes pass in review before the surgeon seeking a means to exterminate a growth of this nature. The two methods at present in vogue aim at the destruction or removal of the tumor. The simplest method aims to produce an artificial coagulation which should result in an obliteration of the growth. For this purpose Mosetig-Moorhof has recently used peroxyde of hydrogen. A child, eight days old, who had an extensive cavernous tumor of the right thigh, was relieved after nine injections (each 5.0 c.c.) into the midst of the growth, combined with central compression.

A MODIFICATION OF THE MACEWEN OPERATION FOR GENU VALGUM.

Dr. E. Hahn-Friedrichshain[19] claims that the usual operation is much more quickly and easily performed, in patients having large, firm bones, by operation through a double lateral incision, so that the femur can be chiselled from the outside as well as the inside. He has performed the operation in this manner in seven cases, to be subsequently reported in detail.

WLADIMIROFF-MIKULICZ RESECTION OF THE FOOT.

Bauerhahn[20] has reviewed the literature of the subject to date, and reports the results of twenty-seven cases. The resection has been done in a majority of cases for caries; in one case, on account of the defect resulting from a syphilitic ulcer. The results of trauma and sarcoma were the indications in the other cases. A radical cure from tuberculosis is not assured by this procedure, recurrence having occurred in four cases of Fischer's, in five of Lesa's, and in one of Rose's. According to *Lesa's* experience, it is especially liable to recur in young patients (three cases under twelve). Bauerhahn asserts that, after the operation, no apparatus is required. The resulting stump is suitable for standing or walking, and especially satisfactory in traumatic cases. The walking surface is greater than after a Syme or Pirogoff operation, and the toes, after a time, become quite elastic. The results are equal to those of other osteo-plastic operations on the foot.

LINEN SUTURES.

Heyder Bonn[21] claims that linen thread is as valuable for sutures or ligatures as silk or catgut. It is prepared by soaking for twelve hours previous to an operation in a one per cent. solution of sublimate, and during the operation the usual one-tenth per cent. solution. Trendelenburg's experience shows that wounds heal as readily and without suppuration as when silk is used. Heyder Bonn reports a case where it was satisfactorily used for an intestinal suture.

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[15] Annals of Surgery, 1883, March.
[16] Alex. von Koretzky, Arch. f. klin. Chir. bd. xxxvi, 3.
[17] Lancet, March 16, 1889.
[18] Wien. Med. Wchnschr., 1889, xxxix, 1.
[19] Centrbl. f. Chir., xv., 48, 1888.
[20] Zeitschr. f. Chir., bd. 27, hf 5-6, xxvii.
[21] Centrbl. f. Chir., 1888, xv, 51.

PEAT MOSS AS A SURGICAL DRESSING.

The investigations of N. N. Jakimovitch [22] of this tensively recommended substance are important to those who are in the habit of using the sphagnum for surgical dressings. He found that peat moss is far from being an aseptic or antiseptic dressing, and contains mould fungi of various species of penicilium glaucum, and at least three different species of large and small micrococci. It is friable, becomes easily pulverized, and dusts out of the pails in which it is often used, soiling the patient's linen and contaminating his wound. It does possess a high absorptive power; but, to be fit for surgical use, it requires a most careful preparation to make it fully aseptic.

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Clinical Department.

A CASE OF CEREBRAL SYPHILIS FOLLOWING AN ATTACK OF THERMIC FEVER.

BY LEWIS H. ADLER, JR., M.D.
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It is a well-recognized fact that any cause which is able to induce an inflammation of a nerve centre, may, when present in a syphilitic person, provoke an outbreak of specific disease. Such an instance is recorded in the *Journ. de Méd. et Chir.* (Paris, 1879, p. 191), in which the attack followed a sunstroke.

Prof. H. C. Wood has seen in an extensive practice but one similar case, besides that of the patient whose history I record, and who was under Dr. Wood's care at the University Hospital.

E. L. C., age thirty-six, a widow, white, was admitted into the University Hospital, October 3, 1888, suffering from supposed uterine trouble. Her mother, who was harmlessly insane, due to softening of the brain, died at the age of fifty-two. Father, aged fifty-eight, is dead, also; cause unknown. Two children died of phthisis, aged respectively twenty and twenty-one. Rest of family history unimportant.

Personal History.— Patient never was strong and was of a very neurotic temperament. Menstruated at sixteen. Always regular up to a few years ago. Was married at age of twenty-two. Husband was healthy, but contracted dysentery in the army, from which he died. Had three children by him and two miscarriages. Causes and time of abortions not known. Memory very defective and history, therefore, somewhat uncertain and confused. Children are still living and apparently healthy (?) Labors were all natural but very severe. Each time was confined to bed for periods varying from one to two months.

About a year before present trouble caused her to seek relief in the hospital, she had a severe attack of thermic fever, which was followed by intense and persistent headache, difficulty in speech, failure in memory, general drowsiness, attacks of giddiness and paralytic seizures of more or less moment, and of varying duration. The above facts in reference to the sunstroke and its accompanying sequelæ were not known for some time after patient was admitted into the house, and then only by accident, after she had an attack of palsy which led to further and more extended inquiries that elicited the statement from her friends as already mentioned.

Her *present illness* for which she sought relief, began two years ago. Menstrual periods became very irregular, absent sometimes for four or five months. Would then occur suddenly and last for three or four weeks, during which time considerable fluid would be lost and she would be left very weak. The last time "period" came on, it lasted two months, and clots of blood were passed causing bearing down sensations, but no pain, to speak of. This attack left her very weak, and from her own statement, as well as her friends, she had lost much flesh.

Prof. William Goodell at this time had the patient in his wards, and an examination made by him revealed a somewhat tender and prolapsed ovary upon the left side; a small bi-lateral tear of the cervix uteri, and the womb bound down to some extent by adhesions. Her general condition did not warrant operative interference, even had that step been deemed advisable. She was therefore, placed upon medicines of a tonic nature and kept at rest in bed. This treatment was kept up for some little time, and though it improved her condition somewhat, her progress toward health was not marked. About a month after her admittance into the hospital I noticed, in making my morning rounds, that patient was very stupid and drowsy, and unable to answer questions readily. This condition grew worse, and at night she was in a profound stupor from which it was impossible to arouse her. It was noticed at this time that the right pupil was markedly dilated and the left one about normal. At first it refused to contract to light, but about an hour later responded to light from a candle (though very sluggishly).

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[22] Ann. f. Surg., 1889, vol. ix, 70.

The next day she was quite rational and able to talk. It was at this time that specific trouble was suspected, and a careful examination to confirm this view was now made, resulting in finding marked tenderness along the crests of the tibiæ, and the soft palate was found to be entirely ulcerated away. There was also evidence of pre-existing buboes. Tenderness was noted along the nerve trunks, especially of the arms; absent, however, along the spinal column.

The case was now turned over to Dr. Wood, and at his suggestion was placed upon the mixed specific treatment, consisting of potass. iodide, grs. xx, and hydrarg. bichlor. corros., gr. $\frac{1}{24}$ t. d.

It was now observed that the pupils were unequally dilated; that the tongue was drawn to the right side and that the corner of the mouth on that side was lower than the left. There was also distinct though not entire loss of sensation in both arms. Power was greatly diminished. Sensation was retarded on both sides of chest and abdomen. There was no loss of motor power or of sensation in the lower extremities. Ptosis was present on the right side. The potass. iodide was now increased to grs. xl, and the bichloride to a twelfth, t. d.

Examination of the urine resulted negatively. Patient still continued to improve. Headache grew better and the change was generally marked.

Ten days after the last increase was made in the potass. iodide, it was again increased to one dram t. d. This dose, together with the $\frac{1}{12}$ gr. bichlor., was kept up for some time until diarrhœa ensued, when they were both reduced.

After a month and a half of this treatment, patient was hardly recognizable as her former self. Had regained flesh and was mentally, as well as physically improved. The paralysis had long since disappeared, and she was able to be up and about. She was discharged and advised to pursue treatment for some time to come.

At last accounts she was doing well and had no return of previous attacks. Her head was also comparitively free from pain.

At the onset of the attack of coma, which occurred in the hospital, the patient was perfectly quiet and relaxed. There was no evidence of hemiplegia or of palsy, although after recovery of consciousness paralysis was noted.[1] That the diagnosis of cerebral syphilis was correct in this case, I think the evidence upon the patient's body conclusively proved, and was further decided by the so-called therapeutic test, about which Prof. H. C. Wood speaks in the following terms: — "In all cases of doubtful diagnosis the so-called therapeutic test should be employed, and if sixty grains of iodide of potassium per day fail to produce iodism, for all practical purposes the person may be considered to be a syphilitic. No less an authority than Seguin has denied the validity of this, but I believe, myself, that some of his reported cases were suffering from unsuspected syphilis. I do not deny that there are rare individuals who, although untainted, can resist the action of iodide; but in ten years' practice in large hospitals, embracing probably some thousand of cases, I have not met with more than one or two instances which I believe to be of such character; of course in making these statements I leave out of sight persons who have by long custom become accustomed to the use of the iodide, for although in most cases such use begets increase of susceptibility, the contrary sometimes occurs. Of course the physician who should publicly assert that a patient who did not respond to the iodide, had syphilis, would be a great fool; but in my opinion the physician who did not act upon such a basis would be even more culpable."[2]

The symptoms which occurred soon after the attack of thermic fever, and which plainly pointed to a specific origin, evidently were prematurely induced by the sunstroke. The case is interesting on this account, as well as from its curious manifestation of disease which led to a correct interpretation of the true trouble and finally to, if not its cure, its amelioration.

EARLY DIAGNOSIS AND OPERATION IN A CASE OF ULCERATIVE APPENDICITIS.

BY BURNSIDE FOSTER, M.D., MINNEAPOLIS, MINN.

A brief report of the following case, which recently came under my observation, will, I think, be of interest to the readers of the Journal.

I was asked by my friend, Dr. Knut Hoegh, to see in consultation H. M., a Norwegian merchant, age 37. For the last six or seven years he had been subject to attacks of colic, at first of moderate intensity, but which, later, became more frequent and severe. These attacks were usually accompanied by diarrhœa, but the patient could not say whether this preceded or followed the attack. At first there would be intervals of six months or so between the attacks; but during the last fifteen months there have been five attacks, each one worse than the preceding; and he would be left weak and ill and unable to attend to his business for many weeks at a time. Sometimes the attacks would come on at night while he was asleep, and he would be waked up with an aching pain over the whole abdomen, which would always settle in the right iliac region. The pain would steadily increase, and would often be accompanied by chills and attacks of shaking. There was nausea and wretching, but never vomiting. There was always extreme pain and tenderness in the ilio-cæcal region over a space the size of a silver dollar. There was sometimes difficulty in urination, but he never passed anything abnormal, and there have been no signs in the urine.

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[1] Similar cases are recorded by Dr. J. Althaus. Medical News, vol. xlix, p. 428.

[2] Wood. Pepper's System of Medicine. Vol. v, p. 1013.

No blood or anything abnormal has been passed by rectum. Lungs and heart apparently healthy. He complains of a constant feeling of being bloated, — as if his bowels had not moved sufficiently. Appetite usually good, and he is never distressed by food.

The above history was obtained from him in June, and he was treated symptomatically, and sent back to Dakota. where he remained without any improvement until early in August.

I first saw the patient August 15th. A careful physical examination, both externally and by the rectum, failed to discover the slightest tumor or swelling in any part of the abdomen; but midway between the umbilicus and the spine of the ilium, over the ilio-cæcal region, there was a spot about the size of a silver dollar which was very tender on pressure. Dr. Hoegh and I arrived independently at the same conclusion, that there was some inflammatory trouble with the appendix vermiformis, and that the patient's condition justified an exploratory operation. The patient himself, an intelligent man, agreed to anything which offered a hope of relief.

August 19th, the patient having been kept for a couple of days on liquid diet, under chloroform anasthesia, Dr. Hoegh made an incision about four inches long in the right linea semilunaris. On opening the peritoneum, the cæcum and appendix were readily found, the latter pointing downwards and toward the median line. The process had a peculiar, firm, elastic feeling, and was about two inches long. At its base there were some not very fresh adhesions, which were easily separated, The process was ligated at its junction with the cæcum with stout silk, and amputated. The serous surfaces were stitched over the stump with fine silk. Dry gauze napkins, previously boiled, were used instead of sponges, and the wound was kept perfectly aseptic. The edges of the wound were united throughout and closed without drainage.

At the conclusion of the operation the appendix was examined, and presented the following condition: It was about two inches long and somewhat thickened in the centre; the opening into the cæcum was quite contracted, being smaller than the lumen of the process; on opening it, there escaped at once about half a drachm of dark brown pus, the odor of which was fetid rather than feculant; the mucous membrane was the seat of two ulcers, neither of them very deep; the largest one was near the centre, being about a quarter of an inch in length, and occupying nearly the circumference of the appendix; the other smaller one was near the apex, and was about the size of a split pea. The subsequent history of the case has been uneventful.

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Reports of Societies.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, May 20, 1889. The President, Charles S. Wood, M.D., in the chair.

Dr. T. H. Manley read a paper on

THE OPERATION FOR STRANGULATED HERNIA BY THE MCBURNEY METHOD, WITH REPORT OF THREE CASES.

Since January 1st of the present year, he said he had had in his hospital service three cases of strangulated inguinal hernia, all of which were operated on as quickly as possible after admission, with a view not only to relieving the constriction, but also at the same time permanently curing the patient by means comparatively simple, and by all odds the safest yet devised. For the procedure adopted in these cases the profession was indebted to one of New York's most distinguished surgeons, Dr. Charles McBurney, who had thus added one more gem to the diadem of American surgery.

McBurney's operation was characterized by a few cardinal points which were decidedly original, and which, if well understood and skilfully applied, must always lead to successful results. These were: (1) An open wound; hence no septic infection or purulent infiltration. (2) The excision of the sac. (3) The suturing of the cutaneous and aponeurotic edges of the wound together. (4) The closing in of the breach by connective, scar or cicatricial tissue formation.

The difference in the character of the three cases in question rendered necessary some modifications in their management; but in all, there were followed out the fundamental points laid down by McBurney, whose operation was recommended for every variety of abdominal protrusion, wherever or whenever found.

The first case was that of a male forty-five years of age, whose hernia, on the left side, had existed as long as he could remember. From time to time the protrusion would disappear spontaneously, though he always wore a truss; and up to the day before he entered the hospital the patient had not noticed it for more than four months. On this day, after unusual straining at stool, the tumor reappeared larger than ever, and unusually tender to the touch. The man himself and his family physician both having failed in reducing it, he was sent to the hospital, where he was seen by Dr. Manley. At this time there were no signs of strangulation, and as his condition was very good, he refused to submit to an operation, which was strongly urged. Topical applications were applied for the purpose of favoring reduction, and these were followed by temporary relief; but, four days after the reappearance of the hernia, well-marked symptoms of strangulation declared themselves.

The patient was now eager for the operation, and an anæsthetic having been given, the skin was quickly opened by one bold stroke of the scalpel carried from a point just over the internal opening of the inguinal canal to an inch below the external ring, and then the coverings were divided until the sac was reached; the upper part or neck being first sought, and the body cut down later, The sac was found to be an old one. and bound down by very firm adhesions, which were separated only with the greatest difficulty. Within the sac was found a knuckle of intestine, with a large quantity of effused serum. It was calculated to leave the spermatic cord alone in operating; but in this case there was no spermatic cord, either within or without the sac. When the canal was opened the cause of all the trouble was found, viz., an undescended testis, which was normal in shape, but was not larger than a kidney bean. By making considerable traction it could be readily brought out of the canal, and Dr. Manley considered the fact that the inguinal opening was patent throughout its entire length, attributable to the defective development, the testis sometimes slipping down through the ring when there was much straining, and then returning again. This condition had naturally kept the patient in a constant state of danger, and the displaced testis was also the cause of the constant discomfort which he said he had experienced when wearing a truss. After opening the canal throughout and removing the testis, traction was made, and the whole of the protruding portion of the serous sac ligated and cut off. The cutaneous edges were drawn down to the divided edges of the canal, and six sutures put in on each side; after which the open wound was packed with iodoform gauze, and the usual antiseptic dressings applied. After the operation the patient never rallied, and death ensued four hours after its completion. This man's life, Dr. Manley said, should have been saved, but it was lost through his refusal to submit to an early operation, — the delay resulting in septic infection of the peritoneum and general exhaustion of the system.

The second case was in a male twenty-nine years of age, who had worn a truss for many years, but discarded it about a year before, when his rupture disappeared. It suddenly returned one day when he was making severe exertion, and several physicians having failed to reduce it, he came to the hospital. As in the preceding case, an immediate operation was advised, but the patient refused, and the tumor, which was very small, remained unreduced in spite of all that could be done. The next day there was a marked change for the worse, and locally there was found marked fullness along the cord in the inguinal canal, while the scrotum was distended with an enormous hydrocele, and the hernia itself had increased to more than five times its original size. In addition, there was well-marked peritonitis in the region of the sac, with a tendency to rapidly become general, and, altogether, septic infection was evidently in full progress.

Under such circumstances, the success of any cutting procedure was very doubtful; but an operation was now, of course, the only resort. The great advantage of the McBurney method in cases of this kind was, that we had a large open wound for free drainage, and an opportunity to remove, as occasion required, any diseased or contaminated tissue met with. In this case the hernia had no sac. As in the preceding instance, there was an old congenital impediment (though the testis had descended), and the spermatic cord dangled in the centre of a large pouch. Hence, to carry out the operation according to the method adopted, it was necessary either to sacrifice the testicle or make an artificial investment for it. As the latter would render the patient liable to another hernia at an early date, and, moreover, as it was found that the *vas deferens* was reduced to a mere thread in thickness, and the testis was very imperfectly developed, with no well-defined epididymis, and therefore probably useless functionally, the organ was removed. In order to secure a continuous sac, the unclosed *tunica vaginalis* had to be dissected off all the way up to its origin at the internal ring. The protrusion consisted of a small knuckle of intestine with a large mass of discolored and partly gangrenous omentum. The latter was drawn forward until healthy tissue was reached, when it was ligated and cut off. With its stump properly invaginated within the peritoneal cavity, and the omentum well up, the sac was cut off, and the wound treated in the usual way. Though Dr. McBurney laid stress upon the importance of keeping the patient six weeks in bed after the operation, this man could not be persuaded to keep quiet so long, and left the hospital perfectly well on the twenty-ninth day. (This patient was presented to the Association, and an opportunity given the members of examining the cicatrix.)

The third case was that of a woman fifty-one years of age. The hernia had existed for fifteen years; and ten days before her admission to the hospital she found it was impossible to replace it as usual. She also became obstinately constipated, and numerous enemata had no effect in relieving the bowels. On the night of the tenth day symptoms of strangulation set in, and her physician, who had previously exhausted every means to reduce the hernia. advised her to enter the hospital. She was admitted at midnight, and Dr. Manley saw her one hour afterwards, when her condition was exceedingly serious, notwithstanding the fact that from the moment of her entrance stimulants had been freely given and artificial heat assiduously applied.

The operation was commenced as promptly as possible, and on account of the extreme exhaustion of the patient, special effort was made to render it as brief as was consistent with thoroughness. When the peritoneum was reached, it was found that it had formed a pouch which was firmly adherent to the surrounding parts, and, from the thickness and toughness of its walls, undoubtedly an old one. The sac, close to the inner side of which lay the round ligament, was divided in a longitudinal direction; when it was found that the greater part of its contents consisted of omentum, which towards the neck was very firmly adherent to its serous covering. Immediately under the protruding fat was discovered a small knuckle of intestine, of a port-wine color, with its peritoneal investment, which had a peculiar granular feel. After the sac had been torn free from all its connections with adjacent parts, it was opened in the lower portion, which permitted the drawing down of the omentum to a slight extent. This having been done, it was ligated in mass, and the stump returned to the peritoneal cavity. In this case, as in the others, the inguinal canal was opened throughout its whole length.

The last steps of the operation, the sewing together of the skin and aponeurotic structures, and the packing of the wound, presented unusual difficulties in this instance, on account of the extreme amount of adipose tissue in the abdominal walls; but by somewhat modifying the *technique* of the operation, these were overcome. Though the patient was extremely weak for a few days, all her dangerous symptoms disappeared with the operation, and she made a rapid and satisfactory recovery.

Before the time that McBurney promulgated the principles for an operation which offered advantages which none yet devised possessed, Dr. Manley went on to say, the operation for strangulated hernia was attended with a fearful mortality, Bryant putting it at fifty per cent. in the hands of the best operators. By a strange coincidence, there were admitted into the female surgical ward of Harlem Hospital. during the first week in July, 1888, three women with strangulated hernia, the only women entering with this accident since the hospital had been opened. The first was a healthy, muscular individual of twenty-nine years; and the second was fifty, and though of spare figure, also sound in health up to this time; while the third was sixty-five years old, and greatly emaciated and reduced in strength. The most persistent efforts at reduction by taxis failed; and all were operated on within twenty-four hours after the latter was abandoned. The operation was simple, as the only aim was to release the constriction at the neck and return the protrusion; but two of the patients died within forty-eight hours after the operation, and the one who recovered, strange to say, was the feeble old woman of sixty-five.

Dr. Manley said that though there might be a diversity of opinion as to the propriety of doing any operation in the case of an individual with a hernia that could be comfortably borne with the aid of an easy truss, or in the case of very young children, he could hardly conceive of any objection against a procedure which, while it obviated the greatest dangers in strangulated hernias, afforded, in addition, the reasonable prospect of a permanent cure and the liberation of the patient from the unceasing burden of a truss. There were two great sources of danger encountered in every case of strangulated hernia operated upon, which the McBurney method always eliminated. These are, first, peritonitis, from septic infection, and second, hæmorrhage. As far as immediate danger to life was concerned, all other dangers, bleeding included, sank into insignificance when compared with the first.

If there was localized contamination a free opening could be made, and the cavity of the peritoneum boldly entered. If any of the extruded part was undergoing putrefactive changes, it was removed, no matter whether it was fat or gut, omentum or mesentery. If there was reason to suspect that the serum of the peritoneum had become infected, an opening might be made by the exposure of the ring, or perhaps the crural arch; while if this were not free enough, it could be readily enlarged by an incision into the fibrous tissues, and the whole region thoroughly flushed with some efficient antiseptic wash. To be the more certain that no pent-up decomposing material remained, a drainage-tube could be introduced. If it were objected that the free use of the scalpel in dividing the strong bands of aponeurotic structure would tend to weaken the power of the abdominal walls, it might be answered that we would resort to this only in a very severe case, when general contamination was feared. Besides, immediately after the parts are well washed out, the line of incision would be solidly sutured.

As to hæmorrhage, this method marked a new era in dealing with inguinal bleeding. This procedure ended the blind groping with a stub or blunt-pointed blade for a part which should be recognized by the touch only. Under the old plan the one great thing which the surgeon found in dividing the constriction was hæmorrhage; and hence very great stress was laid on the importance of keeping well in mind the bearings of the blood-vessels, for, unfortunately for the patient, if a deep vessel happened to be divided, it would scarcely be known until after he was dead. In addition, there was such an exaggerated fear of disturbing the peritoneum that it would be only a very bold surgeon who would cut down for the divided ends of the wounded vessel. But with a free, open wound, with its edges well separated by retractors, and every part thoroughly exposed to view, the chances of hæmorrhage were reduced to the minimum, and if perchance a vessel pursuing an anomalous course should come in the way of the scalpel it occasioned no alarm whatever, since the point of injury would be in full view, and the bleeding could be readily controlled by the clamp forceps. The importance of avoiding hæmorrhage was still more appreciated when it was remembered that hæmorrhage, independent of the quantity of blood lost, may become a source of danger by exciting inflammation, and possibly spreading infection. It was well-known that the presence of even a very small quantity of blood would often interfere with primary union of a wound, and in this operation the tissues were not permanently brought into apposition until every vestige of bleeding had ceased.

A very interesting feature of Dr. Manley's three cases was the anatomical arrangement of the structures in the inguinal region. In no one of them did he find a true recent peritoneal sac; the hernia being either of congenital origin, or having existed for a very long time. In the first case the displacement of the structures met with was quite unique. Here it was well shown what mischief an undescended testis may occasion, and there was also observed a condition that must be rather rare — an open external inguinal ring, with the undeveloped testis lying in the position of a bubonocele, at one time sliding down and out, and again returning to its original position. In the second case, too, the opening and direct connections of the *tunica vaginalis*, the peritoneal cavity was complete, and he believed that in this instance, as in the preceding, the testis was originally lodged somewhere along the inguinal canal at birth, though at a later period it completed its descent.

In the woman was found a condition which he believed was originally attributable to defect of developments at birth; but which escaped the patient's notice until the strength of the abdominal walls was put to a severe test by a sudden strain; when this portion of the physical structure, which was weakened by some congenital defect, gave way and allowed a hernia to develop. It was thought in the text-books that in the female in early life the duplication of the peritoneum covering the round ligaments, called the canal of Nuck, which is analogous to the tunica vaginalis in the male, sometimes remains open, and hence can readily become the seat of hernia. In no other way could he account for the condition met with in this woman, and he thought that the possibility of such a thing should always be borne in mind in the case of females. The very small size of the round ligaments was also quite striking, and hence he did not wonder why surgeons so often fail to find it all in performing Alexander's operation for shortening this ligament. It could easily be seen, too, he said, that an inguinal canal containing nothing but this very small and delicate cord must needs have a very small lumen. In the case in question, however, the inguinal canal seemed to have no length; probably owing to the volume of omentum and the long displacement.

The thick and tough sac was closely adherent to the areolar tissue, and it was unquestionably a very old impediment. The pouch, originally of a thin, gauze-like tissue, had in the progress of time undergone hypertrophy and considerable change in its histological elements; and this change in texture was no doubt one of nature's ways of providing against injury, the thickening and strengthening of the covering of the extended viscera, thus affording it protection from accident.

Dr. Manley went on to say that from his clinical experience and from a most careful and extended series of investigations on the dead body, in the male and female, adult and child, he was firmly convinced that abdominal hernia in its various forms, and especially the indirect inguinal variety, is nearly always attributable to defective development at birth, or to causes acting immediately after it. Having referred partially to his observation upon infants, he said he was furthermore persuaded that the arrest of the descent of the testicle sometimes met with is responsible for the vast majority of herniæ in males. No two hernias, he believed, were exactly alike, and if in different cases of local pathological conditions were similar, there was apt to be a wide difference in the general condition of the patients.

In the treatment of strangulated hernia by the McBurney method, among the questions which arose for consideration were the following:

(1) How soon should an operation be performed after the hernial protrusion is found to resist taxis?

(2) What are the circumstances which call for a modification of the *technique* of the operation?

(3) What are the dangers, immediate and remote, in the operation, and how can they be obviated?

(4) What class of cases should be rejected?

The first question was more important than all the others, and upon its decision the success of the operation would in a large measure depend. Dr. Manley's recommendation was that whenever a case of hernia which cannot readily be reduced is met with, an immediate operation should be advised, provided the facilities to do it and for carrying out the most rigid antiseptic treatment of wounds are at command. Under such circumstances the patient is not worn out with agonizing pain and exhausting vomiting, but is in good condition and almost certain to make a rapid and permanent recovery. What could be promised now, (and this constituted one of the principal inducements for an early operation) was something which had hitherto been unknown, namely, a complete cure of the hernia. If the patient was in a vigorous condition but afraid of general anæsthetics, a few cocaine injections would suffice to blunt the pain occasioned by the cutting. If the objections were raised to immediate operation that if a longer delay is allowed and we work perseveringly we may be able to return the protrusion without any mutilation it could be answered that even if we do succeed, we cannot guarantee our patient from a return of the same trouble, which is liable at any time to imperil his life again, while if we finally fail in our efforts at reduction, the chances of recovery after the operation that will then be imperative, will be much smaller than if operative interference had been resorted to earlier. Promptness in operating was, therefore, of the greatest possible importance.

In answer to the second question he would say that the wound made through the skin, fascia and fat must be dealt with differently in fat and lean subjects, and also with reference to the kind of hernia present, and the condition of the tissues, whether healthy or not. In thin individuals little difficulty would be met with in suturing the skin to the conjoined tendon and to the fascia transversalis in oblique inguinal hernia; but in the very fat, he believed it was sometimes better to omit this part of the procedure. In his opinion a case would do equally well if, after packing the wound with guaze, the edges were brought towards each other by broad strips of strong adhesive plaster. Of course, if in any case infection was suspected at the site of incision, the wound would have to be made somewhat larger, so as to provide for free irrigation and drainage. A hernia other than the indirect oblique would not require so free an incision. In making the incision the operator should be guided by a single purpose, namely, to make it large enough to enable him to deal with the deeper structures safely and speedily. In patients suffering from great exhaustion, he believed that the surgeon should operate with all possible haste, compatible with thoroughness, and he said he could not doubt that prolonged anæsthesia was responsible for the loss of many lives. If, on exposing the bowel there were found positive evidences of gangrene, the result of too long delay, enterectomy was called for; after which the remaining healthy portion of the guts should be returned, and the operation completed in the same manner as if this pathological change had not been encountered.

In a hernia not of congenital origin, the management of the sac was a simple matter, but when its external surface was found firmly attached by old and strong bands of connective tissues, it was necessary to carefully and completely detach them before we could be quite certain that we had reached the free floating covering of peritoneal tissue which must be shut off by the ligature applying high up, before the sac was divided. With recent protrusions, accompanied by inflammatory exudations of lymph, it was very easy to separate the adhesions, but in irreducible and incarcerated hernias, and those of the congenital variety, the most cautious and tedious dissection, in order not to injure the parts, was often required. To an operator familiar with the anatomy of the region, and with the tissues met with, such adhesions were, however, objectionable only because they prolonged the operation. In every instance when, on cutting down upon a hernia, it was found to be one dependent on defective development or misplacement of the testis, and likely to occur again in consequence of this impediment, he thought the surgeon should not hesitate to castrate. If the testicle had been an active factor in the production of the hernia, it was, in his opinion, pretty sure to be feeble in function; but, even if this were not the case, the man would still possess full virile power with the other one remaining. With this impediment removed, and the spermatic cord out of the way, we could solidly seal the whole chasm in the abdominal wall, and thus obviate the risk of leaving what might, later, possibly lead to a repetition of the same trouble.

In the inguinal region there was considerable anatomical and histological differences between males and females. In women the skin was very thin, and, if they had given birth to many children, it was usually wrinkled, atrophied and destitute of strength or elasticity. In those past middle life, too, there was apt to be a large deposit of fat, which, while it did not interfere materially with completing the toilet of the wound, did most decidedly retard the healing process. In such cases it was imperative that the union of the wound should begin at the base, and thus gradually gather in, and draw the article towards the the centre, as it proceeded outwards.

Iodoform, dry or rubbed into the meshes of cheesecloth or gauze, he went on to say, should be used sparingly with the first dressing, unless, for special reasons, septic infection were feared. This precaution should be taken with the primary dressings until the patient's tolerance of the drug could be well ascertained, since otherwise its toxic effects upon the system might be serious. If it was found, however, not to excite undue irritation or produce other unpleasant results, its use would no doubt tend to keep the wound sweet, and shorten the healing process. In ordinary cases, where there was little tension, the catgut ligature was perhaps the most useful; but where there was any resistance, or where it was desirable to retain the parts in apposition for any considerable length of time, silk or strong linen was preferable. For ligating the sac or omentum strong silk only should be used, because it was the most reliable, and, if first rendered thoroughly antiseptic, it could be safely buried in the tissues without giving rise to irritation or ulceration.

It was seldom, indeed, that hæmorrhage would occasion any difficulty in this operation. When, however, the ordinary resources failed to control the bleeding, or when the two parts of a large divided vessel retracted, he had found the temporary transfixion ligature invaluable. Having applied this, one could go on with the operation, leisurely seeking out and securing the bleeding points, when the temporary stitch might be removed.

The only immediate dangers in the operation, other than those which had been considered, were shock and exhaustion. Having given some attention to these subjects, he stated that he would decline to operate only on those who were bordering on the moribund state, especially those in profound shock or deeply narcotized and the very old.

In conclusion, Dr. Manley said that while there could be no doubt that the McBurney operation was generally successful, and that it was the easiest of performance, the safest from septic infection and the least liable to be followed by relapse, of all, the consummation of this admirable procedure, marking as it did a new era in herniotomy, would not have been possible without the light shed upon abdominal surgery by Marion Sims, and without the discoveries of Pasteur and Lister in bacteriology and antiseptics.

In the discussion on the paper, Dr. George S. Huntington, who had assisted Dr. McBurney in a number of his operations at the Roosevelt Hospital, said that, as to the approximation of the integument and the deeper structures, the conjoined tendon and the transversalis fascia, it was for the purpose of more readily accomplishing this that Dr. McBurney advocated the passage of lateral tension sutures; and it has proved that by the careful adjustment of these tension sutures very satisfactory results were obtained. He said he should be somewhat afraid of leaving so large a wound without any sutures, as suggested by Dr. Manley in certain cases, for the reason that, on account of its large size, there would seem to be a probability of the cicatrix resulting being rather weak.

MORE COMPLETE REGISTRATION OF BIRTHS.

Dr. J. G. **Truax** moved that a committee of three be appointed by the chair for the purpose of conferring with the New York Board of Health, with a view to securing a more perfect registration of births than is now made. In the case of the deaths, he said the registration was complete, because no dead body could be interred or removed from the city without a written permit from the health department; but it was notorious that the registration of births was at present very incomplete.

In seconding the motion, Dr. **Alfred L. Carroll** said that, to judge from the New York vital statistics, as published every week, one would naturally suppose, from the preponderance of the deaths over the births reported, that the population of the city was rapidly diminishing. The simple explanation of this was, that a very considerable proportion of the births were never reported at all, and this was due principally to the fact that nearly forty per cent. of all confinements were not attended by registered physicians or midwives. Some time ago, when he was Secretary of the New York State Board of Health, he had carefully investigated the registration of vital statistics in the principal countries of Europe, and he found that in Great Britain and Germany, where the records of births were very complete, the onus of reporting all the births was placed upon the parents, or the guardians in the event of the parents' death. Through his efforts the law had now been so amended as to make this the case also throughout the State of New York in general; but this did not apply to the large cities, like New York. At present, therefore, the vital statistics of this city are absolutely worthless.

The motion having been adopted, the president appointed on the committee Drs. Truax, Carroll, and J. R. MacGregor.

— It is stated on what seems to be good authority that food preparations for infants to the amount of $10,000,000 are annually sold in the United States. According to one of the speakers at the recent meeting of the Association for the Advancement of Science, "most of these products are unwholesome," and the Government was urged to take some action.

— A lay contemporary has learned "what killed Maybrick," and answers the question by copying from "an English medical journal" the list of the drugs which were administered to Mr. Maybrick during his illness. This list is as follows:

> Morphia suppositories; ipecacuanba wine; papain and iridin solution; cascara sagrada; nitro-hydrochloric acid; tincture of nux vomica; Fowler's solution; Plummer's pill: dilute hydrocyanic acid; tincture of henbane; bromide of potassium; antipyrin; tincture of jaborandi; bismuth; sulphonal; cocaine; nitroglycerine; dilute phosphoric acid; solution of chlorine, Sanitas, glycerine and Condy's fluid, as mouth washes.

— The Farmers' Alliance of Georgia have already as reported in the daily press, boycotted the undertakers who belong to the State Association, because they had agreed upon a price of coffins. "The Death Trust," as it was called, was denounced in vigorous terms. Now the Alliance goes a step further, and legislates against doctors who belong to medical associations. The resolutions adopted by the County Alliance of Johnson County, read:

> "*Whereas*, we have been informed that some of our physicians have gone into a combine, or organization equivalent to a combine, that is detrimental to our interests; therefore, be it
>
> "*Resolved*, that we publicly denounce any such organization, and also any physician who has or may hereafter attach himself to that or any other similar organization; and we will not patronize any physician who belongs to that society when we can do better."

The granger interest is indeed working itself up into a state of mind on the subject of all combinations, not only of capital but of brains.

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FRIEDREICH'S ATAXIA.

THE rare disease of the spinal cord, first described by Friedreich as "degenerative atrophy of the posterior spinal column," has ever since been of great interest to the student of nervous diseases. Its relations to tabes in the adult, its connection (real or supposed) to the development of the nervous system, and its curious generic character, have been additional features which add to its interest above many other rare affections. The reported cases are few, and the autopsies still fewer; so that each additional case is full of value.

The most exhaustive study that has yet appeared is that made by Dr. J. P. Crozer Griffith, and presented before the College of Physicians, of Philadelphia, and just published in their transactions. He begins by quoting Friedreich's original definition of the disease, which he supplements by a new one, more in accord with our recent knowledge. "Friedreich's ataxia," he says, employing this name in preference to the many that have been suggested, "is a chronic, systemic, inflammatory degeneration of the spinal cord, developing usually in infancy or childhood, and occurring in cases in which there has probably been an arrest of development of the cord during fœtal life, this being the result of some hereditary predisposition. It is situated chiefly in the posterior columns, the lateral pyramidal tracts, the direct cerebellar tracts, and the columns of Clarke; though other parts of the white and gray matter are very commonly somewhat affected, and the sclerosis extends slightly into the medulla. The affection is characterized clinically by a disturbance of the co-ordination of the bodily movements, developing gradually, advancing from below upward, and finally involving the organs of speech. Curvature of the spine, talipes, vertigo, and nystagmus are frequent. The patellar reflex is nearly always abolished. Paralysis and sensory disturbances are not uncommon in advanced cases. Trophic, vaso-motor, and visceral affections are unusual, and any involvement of the intellect is probably accidental."

In the present essay the author has tabulated 143 reported cases, including seven presented at the meeting at which it was read, and has added two other cases in a foot-note. Over 57 other cases have been reported as occurring in the families of these patients, and other possible cases are summed up in a supplementary table. In these 143 cases there have been twelve autopsies.

Although Friedreich's ataxia is, broadly speaking, an hereditary disease, direct inheritance is infrequent; but polymorphic inheritance, from other neuropathies, — alcoholism, tuberculosis, syphilis, etc., is quite common; previous ataxia or other nervous diseases having, however, far greater influence than intemperance or constitutional affections. The symptoms, contrary to Friedreich's original assertion, commonly develop early in life, much before puberty, which seems to have little influence upon the onset. The disease has been thus far commoner in the male sex, and its onset in the predisposed is often hastened by acute diseases.

The symptoms of Friedreich's ataxia are predominantly motor. In 128 cases, for instance, there was, at some period of the disease, motor ataxia. The gait, however, is more apt to resemble that of cerebellar disease than that of tabes. Ataxic station, with Romberg's symptom of increase on closing the eyes, is also common. Later on, in many cases, the arms have also become ataxic. In some of the cases the muscle sense has been tested, and it has borne no relation to the existence of Romberg's symptoms. Static ataxia is reported in a few cases, and is regarded by the author, with Friedreich, Charcot and Ormerod, as a late symptom. Tremor, choreiform movements, and spasm, are occasionally seen. Paralysis was present in 56 cases, and absent in 53. Most of the latter were early cases, and paralysis is generally considered one of the late symptoms. In many cases locomotion becomes impossible, either from marked inco-ordination or paralysis. Contractures, talipes, and spinal curvature are also apt to develop in the later stages. The electrical irritability is seldom affected. In the majority of cases the knee-jerk is lost, but its absence is not so constant as in tabes, which may be due to the fact that the lumbar enlargement is not always involved in Friedreich's ataxia. Muscular atrophy and other trophic disturbances are rare; even vaso-motor disturbances are not often seen.

In spite of the fact that the posterior columns have been found diseased in every one of the twelve autopsies, it is curious that the sensory symptoms, which predominate in tabes dorsalis, are rare in Friedreich's ataxia. Pain of any kind was reported in only 22 cases early in the disease, and was absent in 79; while the presence of lancinating pains renders the diagnosis of Friedreich's ataxia doubtful. Later on, pain is rather more common. Cutaneous sensibility is seldom much affected, and paræsthesia is distinctly rare.

In 107 cases the speech was more or less affected, generally as a later symptom. The movements of the tongue are occasionally affected; and the face and the muscles of mastication and deglutition are sometimes involved. Oculo-motor paralysis is rare, and the characteristic pupil of tabes is never seen, while nystagmus is a characteristic symptom of the late stage of the disease. On the other hand, vision is seldom affected and optic atrophy seldom or never occurs. Vertigo is occasionally present. Visceral disturbances, especially of the bladder, which are so common in tabes, are rare; and the various crises of tabes are never met with.

The present view as to the nature of the rapid process, which the author accepts, is that there is primarily an imperfect development of certain systems of fibres in the cord, due perhaps to a congenital smallness of the cord from an inherited tendency to vascular degeneration. In these imperfectly-formed fibres later on degenerative process develop in the form of a combined systemic disease. It is not yet clear whether there may be a diffuse secondary inflammation of other parts. The bulbar lesions thus far discovered afford no satisfactory cause for the bulbar symptoms observed during life, nor do we know the reason why sensory symptoms are so rare. Rütimeyer holds that the boundary layer of the posterior horn is not affected, which may be the cause, as it is constantly affected in tabes; but this requires further proof.

The disease is steadily progressive, although, as in tabes, temporary improvement may occur. The prognosis is hopeless, but the patient may live for many years, and usually dies of some intercurrent disease. Dr. Crozer Griffith's contribution is, as we have said, one of the most exhaustive that has yet appeared. It is enriched with very careful tables, and he has dealt with the material that has thus far appeared, so thoroughly that subsequent writers will have no need to do the work again.

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ON THE VARIATIONS OF THE WEIGHT OF THE BODY IN TYPHOID FEVER.

Dr. L. H. Cohin has published a thesis in which he sets forth the daily variations in the weight of patients in typhoid fever. This publication is the result of studies pursued in Cochin Hospital, where, by a skilful contrivance, successive series of patients were carefully weighed every day, and the weight recorded on their charts, from the beginning to the end of the fever.

The observations of Dr. Cohin show that the loss of weight varies considerably for each individual. With some, it was 200 grammes (or between six and seven ounces) a day: this was the minimum. With others, it was 500 grammes (or rather more than a pound): this was the maximum. The mean of nine observations gives 400 grammes of loss per day; but on taking mild cases, free from complication, the mean fell to 320 grammes, which represents the daily loss in typhoid fever of average intensity. The mean of the daily gain, when convalescence was established, was 280 grammes (about nine ounces). The maximum of loss of weight corresponded to the end of the second week, or the beginning of the third. In reviewing the researches on the causes of the loss of weight in typhoid patients, the writer establishes the fact that the febricitant lives at the expense of his own substance.

The conclusions of these studies are as follows:

(1) Typhoid fever presents two distinct periods, one of loss and one of gain; certain accidental causes may modify them, but cannot affect their general character.

(2) The daily loss is due to febrile combustion chiefly, and but little to abstinence.

(3) The daily loss varies with individuals.

(4) The losses in nitrogen and in weight are almost parallel with the march of the temperature, without always following it exactly.

(5) The study of the weight-chart may aid in prognosis, a continual rise in the weight being a sign of convalescence.

(6) The complications of the disease augment the loss of weight.

(7) The study of the loss of weight enables the physician to determine with precision the action of nutritive substances in fevers.

(8) The loss of weight in a typhoid patient takes place each day in a uniform manner.

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CONTRIBUTION TO THE STUDY OF THE INFLUENCE OF ALCOHOL ON PEPSIN.

Substances Antagonistic to Pepsin.

In a recent memoir, Dr. Henri de Nesslern reviews the current views respecting the influence of alcoholic preparations on pepsin, and especially the authoritative statements of Vulpian, based on the researches of his pupil Mourrut. It will be remembered that Vulpian condemned all the vinous or spirituous combinations of pepsin as inert and valueless, while Portes took a different view, affirming that it is only concentrated alcoholic solutions that have a damaging action on pepsin.

The questions considered by Nesslern are the following:

(1) Is pepsin soluble in alcohol and the aqueous solutions of alcohol?

(2) Does alcohol, even when considerably diluted, materially alter the properties of pepsin?

The results obtained are summed up in the following conclusions:

(1) The differences of opinion on the reciprocal action of alcohol and pepsin are due to the fact that the products employed were defective.

(2) A pepsin that will stand the test should not only dissolve, but peptonize albumen and fibrine.

(3) Good pepsin still preserves its digestive power in twenty per cent. alcoholic solutions.

(4) Pepsin is completely altered in its properties by seventy per cent. alcoholic solutions.

(5) As far as the wines and elixirs of pepsin are concerned, it is not by their alcohol that they render pepsin inactive, but probably by the tannin which they contain; and in the fabrication of such preparations, wines which contain little tannin should be chosen. For the *wine of pepsin* of the French Codex, Lunel wine is selected, as being most free from tannin.

According to Bardet, sugar does not impair the action of pepsin, and most of the salts are compatible with it. The presence of chloride of sodium diminishes its action, while this is enhanced by the salivary and pancreatic diastases, by liquors in process of alcoholic, acetic and lactic fermentation, by sour-crout, old cheese, etc. Lactic acid was pronounced *eupeptic* by Magendie, Claude Bernard, and Schiff, and recommended especially as a medicine by Handfield Jones. Hydrochloric acid, associated with pepsin, was a favorite remedial agent with Trousseau.

Among the substances antagonistic to pepsin should be mentioned the alkalies and alkaline bases, when in any considerable excess, as well as all metallic salts capable of precipitating it from its aqueous solution.

◆

OPHTHALMIC MIGRAINE A MANIFESTATION OF HYSTERIA.

M. J. **BABINSKI** has reported several interesting cases occurring in the service of Professor Charcot, at the Salpêtrière, where attacks of ophthalmic migraine were directly dependent on hysteria, and constituted one manifestation of this neurosis.

In one of these cases attacks of hysteria were developed, and retroceded at the same time as the attacks of ophthalmic migraine. Moreover, the migraine sometimes preceded the convulsive attacks and constituted the aura; the latter was represented in other attacks by mutism. Now, as the mutism by its characters appeared manifestly to be of hysterical nature, it must have been the same with the migraine.

In another case the paroxysms of ophthalmic migraine were accompanied by hysterical manifestations, such as beatings in the temples, a sensation of constriction in the throat. It was also noted that these attacks (as is so often the case in hysteria) could be provoked by pressure over the ovarian region.

In another observation the attacks of migraine replaced genuine attacks of hysteria, and it was possible by hypnotization to reproduce and to arrest the hemicrania.

◆

MEDICAL NOTES.

— The American Association of Obstetricians and Gynecologists will hold its annual meeting at the Burnet House, Cincinnati, O., on September 17th, 18th and 19th.

— It is proposed to endow a free bed in the Philadelphia Polyclinic Hospital, in honor of Dr. R. J. Levis, and a large committee of physicians has been formed to raise the $5,000 which is necessary for that purpose.

— The *New York Herald*, replying to a correspondent who writes to say that while scores of old men are applying for the Brown-Séquard elixir, in hope of living a few years longer, there is not a single reported case of a woman's trying the experiment, and asking if women have so hard a time that they don't care to live any longer than the allotted term, says that the real reason must be that women have more sense than men, and would rather die than be humbugged.

— There is a milkman at Brixton who has a ready wit that a lawyer might envy. One of his customers caught him watering his milk at a horse-trough the other day. "What!" said the customer, in a rage, "isn't it enough that your milk is full of typhoid without your going and watering it?" The milkman turned round, and smiling compassionately, said to two or three bystanders: "What can you do with a man like this? He actually wants his typhoid straight." — *Archives of Pediatrics.*

— The Nicaragua Canal Construction Company has just sent out to the Isthmus medical stores, cots, beds, surgical instruments, bandages, and all the equipment of a first-class hospital. The "Hondo," which sailed from New York on the 17th of August, carried with her a portable hospital capable of accommodating from eighty to one hundred persons. Dr. J. Edwards Stubbert went with the vessel. He will have superintendence of the hospital at Greytown. He was formerly connected with the Pacific Mail Steamship Company, and had charge of the Anglo-American Hospital in China at one time.

BOSTON AND NEW ENGLAND.

— Dr. Chase Wiggin, an aged physician of Providence, R. I., who neglected to report diphtheria cases to the department of health, was recently fined five dollars and costs in the District Court. It was the maximum penalty.

— The plans for the Mary Hitchcock Memorial Hospital at Hanover, N. H., have been formally accepted. Work will be commenced in season to complete the foundations this fall. The structure will be of brick, with Portland stone trimmings; about 200 feet long, with accommodations for thirty patients. The estimated cost, exclusive of land, is $50,000. The hospital corporation has organized with the following officers: President, Hon. Hiram Hitchcock, the donor; Secretary, Prof. H. A. Hitchcock; Treasurer, George Hitchcock; Trustees, Hiram Hitchcock, N. S. Huntington, George Hitchcock; Professors, J. K. Lord, A. S. Hardy, H. A. Hitchcock, E. J. Bartlett of Hanover; Professors, L. B. How, of Manchester; M. M. Field, of Newton, Mass., and Edward Cowles, of Somerville, Mass.

Miscellany.

AMERICAN SOCIAL SCIENCE ASSOCIATION.

The American Social Science Association held its annual meeting last week, at Saratoga. The second day's meeting was devoted to the Department of Health, Dr. H. Holbrook Curtis, of New York, chairman of the department, presiding. Dr. Curtis made a brief address, and was followed by Dr. Pliny Earle, of Northampton, who read a paper on "Popular Fallacies Concerning the Insane," after which Dr. Stephen Smith, of New York, presented a report upon "The Commitment and care of the Insane," which brought out a good deal of discussion. This was followed by a paper on "The Dangerous Classes and the Modern Doctor," by Dr. Louise Fiske Bryson, of New York. In the dangerous classes the author included criminals, inebriates of all kinds, the insane, the feeble-minded, the illiterate, the poor and the uneducated. The poor, the illiterate, the uneducated, she maintained, are necessarily dangerous. When earning a living is impossible, stealing is inevitable. The pauper is compelled to use something he has not earned, and becomes at once dangerous and destructive. Restraint and labor are the great remedies for all these perverted faculties, and the doctor is indispensable to find and treat the cause of the morbid conditions. Dr. Frederick Peterson, of New York, discussed and opposed "Electricity as a Death Penalty," maintaining that there is a want of harmony between electrothanasia, as it takes place, and the humane ideal of death by electricity as it seems to have been pictured in the minds of the promotors of the new law.

At the evening session a paper was read by Rev. Charles R. Treat, of New York, on "Burial Customs in their Relation to Health," illustrated by the stereopticon, and one by Dr. Charles A. Harvey, also of New York, on "The Best Sanitary Disposition of the Dead." The dangers of the old system of inhumation were pointed out with much force, and those of cremation were also clearly and strongly stated. Dr. Harvey's plan contemplates a process of dessication of the dead in a mausoleum building especially provided for the purpose. The gases of decay are to be drawn off, or allowed to escape through conduits to a centrally located furnace, where they pass through combustion, so that nothing deleterious can escape. This meets the sentimental requirements of affection, guards against contemplation of crime by immediate destruction of the corpse, and prevents injury to the health of the living by any of the results or processes of natural decay.

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NOTICE TO CANDIDATES FOR APPOINTMENT IN THE MEDICAL CORPS OF THE ARMY.

An Army Medical Board will be convened in New York City, New York, October 1, 1889, for the examination of such persons as may be properly invited to present themselves before it, as candidates for appointment in the Medical Corps of the Army.

Application for an invitation should be addressed to the Secretary of War, stating date and place of birth; place and State of permanent residence, and accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character, and moral habits: testimonials as to professional standing, from the Professors of the Medical College from which the applicant graduated, are also desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a Regular Medical College, evidence of which, his diploma, must be submitted to the Board.

There are at present nine vacancies in the Medical Corps of the United States Army, in the grade of Assistant Surgeon.

Further information regarding the examinations and their nature, may be obtained by addressing the Surgeon General, United States Army, Washington, D. C.

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POSITION IMMEDIATELY FOLLOWING DELIVERY.

Dr. Charles J. Cullingworth, in his address in "Obstetrics," delivered at the meeting of the Bristol Medical Association, at Leeds, last month, took for his subject, "Some Further Applications of Antiseptic Principles of Midwifery Practice;" and in this connection spoke of the custom of strictly insisting on the maintenance of the horizontal posture for several days after a normal delivery. "For a long time," he says, "I have been disposed to agree with Goodell in doubting the wisdom of this. The question is not by any means a new one. More than a hundred years ago, Charles White, of Manchester, a Fellow of the Royal Society, and one of the most distinguished surgeons ever connected with the Manchester Infirmary, published a remarkable book, with which no doubt many of you are familiar, on the management of pregnant and lying-in women. In the chapter on the prevention of puerperal fever, there occur one or two passages on this subject of posture, which are so striking that I will, with your permission, read them to you: 'In a few hours after delivery, as soon as the patient has had a little rest, she should sit up in bed with a bedgown thrown over her shoulders. If she propose to suckle the child, it should now be laid at her breast whether there be signs of milk or no.' And, again: 'The patient should lie very high with her head and shoulders, and should sit up in bed many times in a day, especially when she takes her food and as often as she suckles her child, and should kneel whenever she has occasion to make water, which should often be done. This frequent upright position is of the utmost consequence and cannot be too much enforced. It prevents the lochia from stagnating, the stools and urine from being too long retained, and promotes the contraction of the uterus, together with that of the abdominal muscles.' How contrary is all this to what is now usually taught! Yet the plan here advocated is merely an application to midwifery practice of the great antiseptic principle of drainage."

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FREQUENCY OF CERTAIN PREMONITORY AND AFTER SYMPTOMS IN EPILEPSY.

Dr. H. A. Hare contributes to the *University Medical Magazine*, for September, an interesting analysis showing the relative frequency of premonitory and after symptoms in epilepsy, as shown by collecting all these isolated cases reported for various reasons in the journals and thus utilizing a large amount of scattered material heretofore wasted. Of the many thousands of such cases reported in English and

American journals within the past fifty years, only nine hundred and seventy could be found which contained one or more statements of the following points of interest: the side of the body most affected, the frequency of the aura and its character, the occurrence or absence of coma after or during the attack, and the occurrence or non-occurrence of rotation with the direction of rotation. The following results were reached: In only 158 instances out of the 970 cases collected, was anything said concerning the side most affected by the fit, and of those 158 cases it was found that the right side was most affected in seventy-seven instances, and the left was most affected in eighty-one instances, results which agree with the statistics of most other writers.

In respect to the frequency of the aura and its character, it was found that it was noted as present, in some form, in 362 cases out of the entire number, and absent in 138.

The forms of aura most commonly felt were as follows, being arranged in the order of their frequency: —

Tingling	45	"Gastric"	15
Visual	27	Cramps in muscles	12
"Painful"	26	"Olfactory"	11
Twitching	21	"Mental"	8
"Epigastric"	20	Chilliness	7
Headache	16	Faintness	3
"Auditory"	16	"Abdominal"	3
Dizziness	15	Aphasia	3
Numbness	15	Unclassified	44
Disturbed respirations	14		

The occurrence of coma is noted as present in 104 cases, and as absent in 12 cases, but this number is probably incorrect since unconsciousness is a much more common after symptom. It would appear, however, from the history of the cases that the coma in these instances surpassed in its severity the mental hebetude so often seen. In 101 cases only is any statement made as to rotation of the body in the fit, and of these, 49 rotated to the right and 52 to the left; so little difference as to make it appear that both varieties are equally common. It is not attempted to analyze these various symptoms in relation to the total number of cases, because such an attempt was not justifiable owing to the fact, that, through the carelessness of individual reporters any one of these symptoms may have occurred and yet not been recorded. The numbers represent very well, however, in a general way the relative frequency of these symptoms of epilepsy, and as they have been obtained solely from the isolated cases of the journals, they are in no way made up of material already used for analysis.

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THE TREATMENT OF IDIOPATHIC CROUP WITH TURPENTINE.

The *London Medical Recorder* translates from the *Bullétin Géneral de Thérapeutique* an article by Lewentaner on the use of turpentine in idiopathic croup. For some time past the author has treated his cases of diphtheria by means of the internal administration of rectified essence of turpentine with highly satisfactory results.

Case I is that of a child, two years of age, in whom the diphtheretic process had extended into the trachea. So critical was her condition that the parents had reluctantly consented to tracheotomy being performed. Before having recourse to this last resort he determined to try Dr. Demelow's suggestion, and he gave the child a teaspoonful of rectified essence of turpentine. In about a quarter of an hour the stertorous respiration became quieter and calmer, and the little patient passed a quiet night, the aphonic cough having quite disappeared. The following day the child was practically convalescent.

Case II was also that of a little girl, two and one-half years of age, who, when first seen was almost unable to breathe, all the extraordinary muscles of respiration being called into play. Tracheotomy was not practicable, and he therefore gave the same dose of essence of turpentine. The condition of the patient soon became relatively calm, although twenty minutes before the air only passed the larynx with the greatest difficulty. The cough which had been aphonic, became barking. The same evening, although the danger of asphyxia had disappeared, the symptoms of croup were present in all severity, but the parents refused to allow tracheotomy to be performed. Another dose of turpentine was therefore given, and on the following day the more urgent symptoms had disappeared, and all danger seemed to be passed. In two days the patient was quite well. In both these cases a cutaneous eruption followed the administration of the turpentine, but no trace of renal irritation could be perceived.

Case III. On the seventh day of his illness, this patient, a boy, two years of age, was pale, livid, pulseless, and almost asphyxiated. Stenosis of the larynx was well marked. A dose of turpentine relieved the more pressing symptoms, and on following up the treatment the child gradually recovered, though noisy inspiration persisted for some time afterwards, attributed by the author to a thickening of the laryngeal tissues.

Case IV. A boy, four years of age, suffering from diphtheria since eight days. This was one case of several, for there was an epidemic of croup at the time, six of which proved fatal. He found the same condition of quasi-asphyxia, with an aphonic cough and cyanosis. A spray of turpentine, eucalyptus, and carbolic acid in alcohol was ordered, and a teaspoonful of the essence given internally. The dose was immediately followed by a violent spasmodic attack of coughing, during which an abundance of false membranes and muco-purulent expectoration was got rid of. The shreds of membrane varied in length from one to three and one-half inches. The next day two other teaspoonfuls of the essence were given, one in the morning and one at night. Thereupon the child began to breathe more freely, took some nourishment and slept all night, except when awakened by the cough. On the second day one more dose was given without any apparent inconvenience. In four days the cure was complete.

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OBITUARY. JOHN BOWNE KING, M.D., M.M.S.S.

Dr. King died in Nantucket July 27, 1889, aged eighty-one years, two months. He was born in New York City, and graduated from the College of Physicians and Surgeons in that city, in 1832, and after both hospital and private practice there, came to Nantucket in 1840, where he remained in active practice, with the exception of eleven months in San Francisco, until failing health compelled him to retire, a little over two years ago. He held the office of Medical Examiner from the time of its establishment, and that of Examining Surgeon for Pensions, until obliged to resign both on account of illness; was a Censor of the Massachusetts Medico-Legal Society, and a Trustee of the Massachusetts Agricultural College.

SOCIETY NOTICES.

American Orthopedic Association. — The Third Annual Meeting will be held in Boston, in the building of the Boston Society of Natural History, at the corner of Boylston and Berkeley Streets, September 17, 18 and 19, 1889.

Tuesday, September 17, 1889. — Morning Session, 10 A. M. Business meeting, for the appointing of committees, etc ; 10.30 A. M. Address by the President, Dr. E. H. Bradford, American Orthopedics. Spondylitis after Typhoid Fever, Dr. V. P. Gibney, of New York. The Relation of the Thoracic and Abdominal Wall to the Spinal Column considered with Reference to the Treatment of Anterior-posterior Curvature, Dr. L. A. Weigel, Rochester, (by invitation). Psoas Contraction as a Symptom, Dr. Dillon Brown, New York. Double Congenital Dislocation of the Hip, Dr. Samuel Ketch, New York. Afternoon Session, 3 P. M A Case of Caries of the Ankle treated Conservatively, Dr. C. C. Foster, Cambridge. A Report of Cases of Caries of the Ankle treated by Excision (with exhibition of patients), Dr. Charles L. Scudder, Boston (by invitation). The Value of Motion in the treatment of Hip Disease, Dr. W. R. Whitehead, Denver. Rest in the Treatment of Hip Joint Disease, Dr. De F. Willard, Philadelphia. Abscesses in Hip Disease, their Prevention, Significance and Treatment, a clinical study, Drs. R W. Lovett and J. E Goldthwaite, Boston.

Wednesday, September 18, 1889. — The Morning Session, at 10.30 A. M. and the Evening Session at 8.30 P.M , will be devoted to short papers on the treatment of hip disease, after which there will be a general discussion of the subject by the members. It is hoped that in this way the opinion of the Society may be formulated. Subjects will be discussed as follows: Dr. Shaffer, The principles of treatment; Dr. H. L. Taylor, The mechanical treatment; Dr. J. E. Moore, The hip splint: Dr. Steele, The early local treatment; Dr. De F. Willard, The operative treatment; Dr. R. H. Sayre, Excision of the hip; Dr. Ridlon, Fixation and traction in the treatment; Dr. Gibney, Mechanical *vs.* operative treatment. Afternoon Session, 3 P. M The Society will meet in the lecture-room of the out-patient building of the Children's Hospital (Huntington Avenue). Papers will be read on An Experimental Study of Distraction of the Hip Joint, by Dr. E. G. Brackett; An Analysis of twenty-one Cases of Hip Disease treated by the Thomas Splint, by Mr. John H. Huddleston; and The After-Treatment of Hip Disease, by Dr. A. B. Judson. After which orthopedic cases will be shown. Members who desire it will have an opportunity to visit the hospital wards.

Thursday, September 19, 1889. — Morning Session, 10 A. M. The Treatment of Pes Equino Varus, Dr. Henry Ling Taylor, New York. Is Rotary Lateral Curvature of Rachitic Origin? Dr. G. W. Ryan, Cincionati. A New Exercise in the Treatment of Lateral Curvature of the Spine, Dr. A. J. Steele, St. Louis. 12 o'clock. Business meeting, election of officers, etc. Afternoon Session, 3 P. M. The Treatment by Portative Appliances of Ununited Fracture of the Thigh, Dr. Newton M. Shaffer, New York. Operations upon the Spine for the Relief of Pressure Paralysis, with the report of a case, Drs. Herbert L. Burrell and W. N. Bullard, Boston (by invitation). A Case of Functional Torticollis, probably due to defective eyesight (with exhibition of patient), Dr. R. W. Lovett, Boston. A Case of Congenital Absence of Five Ribs, with resulting Deformities, Dr. Homer Gage, Worcester (by invitation). Exhibition of appliances and apparatus.

R. W. Lovett, M D., *Secretary and Treasurer,*
113 Boyston Street, Boston.

American Academy of Medicine — The Annual Meeting of the Academy, for 1889, will be held at Chicago, Ill., November 13th and 14th, being postponed to that date by authority of the Council.

Richard J. Dunglison, *Secretary.*

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 31, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	675	323	27.00	11.55	15.75	2 55	4.50
Philadelphia	1,040,245	—	—	—	—	—	—	—
Chicago	830,000	389	238	41.86	4.42	29.90	4.16	5.98
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	168	78	23.40	10.20	16.20	3.00	.60
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	218	95	28 06	11.96	19.32	3.22	3.68
New Orleans	250,000	—	—	—	—	—	—	—
Cincinnati	225,000	105	—	19.95	—	9.50	.95	9.50
Washington	225,000	92	33	27.82	13.91	11.77	5.35	7.49
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	26	14	19.25	3.85	15.40	—	—
Charleston	60,145	44	17	20.43	6.81	17.16	2.27	—
Portland	40,000	17	5	29.40	18.04	23.52	5.88	—
Worcester	78,292	29	15	31.05	6.90	27.60	—	3.45
Lowell	71,518	39	16	25.60	12.80	5.12	7.68	12.80
Cambridge	65,552	23	12	43.50	8.70	26.10	4.35	4.35
Fall River	62,647	29	20	34.50	—	27.60	6.90	—
Lynn	53,334	19	8	5.26	5.26	–	—	—
Springfield	40,731	21	6	38.14	—	23.80	9.52	4.76
Lawrence	40,619	27	13	59.20	—	25.90	—	33.33
New Bedford	37,253	16	8	12.50	25.00	—	12.50	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	5	3	60.00	20.00	60.00	—	—
Salem	29,011	13	—	7.69	7.69	7.69	—	—
Brockton	28,813	6	3	16.66	33.33	16.66	—	—
Chelsea	28,167	8	3	12.50	12.50	12.50	—	—
Haverhill	26,058	—	—	—	—	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	12	4	8.33	8.33	—	—	—
Newton	21,553	—	—	—	—	—	—	—
Malden	19,774	6	4	33.33	—	33.33	—	—
Fitchburg	17,534	10	4	—	20.00	—	—	—
Waltham	17,332	4	3	50.00	—	50 00	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	—	—	—	—	—	—	—
Quincy	13,728	4	1	25.00	25.00	—	—	25.00

Deaths reported 2005: under five years of age 926; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 586, consumption 180, acute lung diseases 127, diarrhœal diseases 372, diphtheria and croup 97, typhoid fever 63, whooping-cough 26, scarlet fever 9, malarial fever 10, cerebro-spinal meningitis 5, measles 2, erysipelas 2. From whooping-cough, New York 14, Chicago and Boston 3 each, Baltimore 2, Washington, Cambridge, Lynn and Gloucester 1 each. From malarial fever, New York 7, Baltimore 2, Nashville 1. From scarlet fever, Chicago 3, Baltimore and Washington 2 each, New York and Boston 1 each. From cerebro-spinal meningitis, New York 3, Cambridge and Somerville 1 each. From measles, New York and Chicago 1 each From erysipelas, NewYork, 2.

The meteorological record for the week ending Aug. 31, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Aug. 31, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.		8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...25	30.24	64.0	68.0	59.0	85		87	86.0	O.		E.	0		6	O.		C.		.0
Monday,..26	30.36	64.0	68.0	60.0	84		84	84.0	N.E.		N.E.	12		12	O.		C.		.0
Tuesday,..27	30.36	60.0	65.0	54.0	91		75	83.0	N.E.		E.	7		4	O.		C.		.0
Wednes. ..28	30.28	58 0	65.0	52.0	54		84	69.0	N.		E.	1		7	F.		C		.0
Thursday, 29	30.19	60.0	66.0	55.0	84		89	86.0	N.E.		E.	4		6	O.		C.		.0
Friday,....30	30.12	65.0	74.0	56.0	94		77	86.0	N.		S.W.	1		9	F.		C.		.0
Saturday,.31	30.19	70.0	76.0	64.9	68		82	75 0	N.		E	8		1	C.		C.		.0
Mean for Week.																			

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 24, 1889, TO SEPTEMBER 6, 1889.

Leave of absence for one month, with permission to apply through Division Headquarters for an extension of two months, is granted Major **Benjamin F. Pope**, surgeon in U. S Army Par 7, S. O. 54, Department of Texas, August 17, 1889

By direction of the acting Secretary of War, Major **William S. Tremain**, surgeon, now on sick leave of absence at Buffalo, N. Y, will report in person to the commanding general Department of the Missouri for assignment to temporary duty at the post of Fort Leavenworth, Kansas. Par. 4, S. O. 198, A. G. O., August 27, 1889.

PROMOTIONS.

Captain **Washington Matthews**, assistant surgeon, to be surgeon with the rank of major, July 10, 1889, vice Town, appointed.

To be assistant surgeons with rank of Captain, after five years' service, in accordance with act of June 23, 1874.

Assistant Surgeon **Charles B. Ewing**. July 5, 1889.

Assistant Surgeon **Walter D. McCaw**. August 20. 1889.

By direction of the Secretary of War a Board of medical officers to consist of Colonel **Edward P. Vallum**, surgeon; Major **Henry McElderry**, surgeon; Major **Washington Matthews**, Surgeon; Captain **James C. Merrill**, assistant surgeon; is constituted to meet in New York City on the first day of October, 1889, or as soon thereafter as practicable, for the examination of assistant surgeons for promotion and of candidates for admission into the medical corps of the army. The Board will be governed in its proceedings by such instructions as it may receive from the surgeon general. Par. 1, S. O. 205, A G. O. September 2, 1889.

Leave of absence for two months on surgeon's certificate of disability, is hereby granted Major **P. J. A. Cleary**, surgeon U. S. Army. S. O 59, Headquarters Division of the Pacific. San Francisco, Cal., August 31, 1889.

The resignation of Captain Joseph Y. Porter, assistant surgeon, has been accepted by the President to take effect August 29, 1889. Par. 11, S. O. 200, Headquarters of the Army. A. G. O. August 29, 1889.

Leave of absence for twenty-one days is granted Captain **Charles B. Ewing**, assistant surgeon, to commence on or about September 21, 1889, provided that at that time the post surgeon now on leave has returned to duty. Par. 5, S. O 201, Headquarters Division of the Atlantic. Governor's Island, N. Y, September 4, 1889.

Leave of absence for fifteen days is granted First Lieutenant **W. B. Banister**, assistant surgeon. Par. 2, S. O. 82, Headquarters Department of Arizona. Los Angeles, Cal., August 23, 1889.

The garrisons of Fort Laramie, Wyoming, Fort Hays, Kansas, and Fort Lyon, Colorado, will be withdrawn, and the posts named will be abandoned as soon as it can be done with due regard to economy. G O. 69, A. G. O. August 31, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 7, 1889.

F. S. Nash, past assistant surgeon, detached from the "Dale" and ordered to duty in the Bureau of Medicine and Surgery.

A. C. H. Russell, past assistant surgeon ordered to naval hospital, "Yokohama," per steamer of September 28th.

C H H. Hall, past assistant surgeon, detached from naval hospital, "Yokohama," on reporting of relief, and return home.

S. S White, assistant surgeon, detached from naval hospital, New York, and ordered to "Minnesota."

E. P. Stone, assistant surgeon, detached from the "Minnesota" and wait orders.

P. H. Bryant, assistant surgeon, detached from the "Ajax," and ordered to naval hospital, Norfolk, Va.

A. R. Wentworth, assistant surgeon, detached from naval hospital, Norfolk, Va., and await orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING AUGUST 24, 1889.

Long, W. H., surgeon. To proceed to Gallipolis, Ohio, as inspector. August 7, 1889.

White, J. H., passed assistant surgeon. Granted leave of absence for thirty days, on account of wound. August 16, 1889.

Condict, A. W., assistant surgeon. Detached from Revenue Bark "Chase," and ordered to Louisville, Ky., for temporary duty. August 19, 1889.

Groenevelt, J. F., assistant surgeon. Ordered to South Atlantic Quarantine Station for temporary duty. August 8, 1889.

BOOKS AND PAMPHLETS RECEIVED.

Thirteenth Annual Announcement of Ensworth Medical College and Hospital, St. Joseph, Mo. Session 1889–90.

Thirtieth Annual Announcement and Catalogue of the Hahnemann Medical College and Hospital, of Chicago, Ill. 1889–90.

Electrical Distribution of Light, Heat and Power. With partial List of Deaths from Electric Lighting Circuits. New York. 1889.

Report for the year 1888–89, Presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

Distended Gall-Bladder, Simulating Floating Kidney, Cholecystotomy by the Lumbar Incision. By J. Ewing Mears, M.D., of Philadelphia. Reprint, 1889.

Essentials of Pathological and Morbid Anatomy. By C. E. Armand Semple, B.A., M.B., Cantab, etc. With 46 illustrations. Philadelphia: W. B Saunders. 1889.

Report of a Case of Stricture of the Rectum, the Probable Result of a Specific Vaginitis. By Lewis H Adler, Jr, M D., Late Resident Physician, University Hospital, Philadelphia, Pa Reprint. 1889.

Congrès pour l'Etude de la Tuberculose Chez l'Homme et Chez les Animaux. Premiere Session. 1888. Président, M. le Professeur Chauveau. Comptes rendus et memoires publiees sous la direction de M. le Dr. L. H. Petit, Secretaire-general. Paris: G. Masson, Editeur. 1889.

Recherches cliniques et therapeutiques sur l'Epilepsie, l Hysterie et l'Idiotie. Compte rendu du service des epileptiques et des enfants idiots et arrieres de Bicetre, pendant l'annee 1888. Par Bourneville, Courlarion. Raoult et Sollier. Tome IX de la Collection. Volume in 8vo, 92 pages, avec 25 figures. Paris: Publications du *Progres Medical*.

Address.

THE PROGRESS OF MEDICINE DURING THE LAST FIFTY YEARS.[1]

BY FRANCIS MINOT, M.D.,
President of the Association of American Physicians.

If we consider the progress which medical science has made during the past fifty years, and its position at the present day, we are led to hope that the time is not far distant when the healing art will approximate in certainty to the exact sciences. Not many years ago, for example, it seemed impossible that a correct diagnosis of the principal structural diseases of the brain and spinal cord could ever be attained; and yet we are now almost as familiar with their characteristic symptoms, and with the nature and anatomical situation of their lesions, as with those of the lungs, the heart or the pleura. The twin departments of physiology and pathology (the former was born almost within the memory of some of us) have made immense strides, and, along with improved methods of clinical observation and research, have aided more than anything else in the advancement of our knowledge of disease and its treatment during the past half century. Bacteriology has revolutionized our notions of the causes and nature of many diseases, and of their proper management. A great amount of useless and pernicious medication has been abandoned, while the number of valuable remedies has been increased. The principle of prevention is advancing in proportion to our increased knowledge of the causes of disease, and hygiene has become an important branch of medical education. Even in tuberculosis, the most wide-spread and fatal of maladies, the results of prophylactic treatment, founded in part on the great discovery of Koch, are found to be most encouraging; and it is not unreasonable to hope that the disease may in time become as controllable as is small-pox at the present day.

Many other recent advances in medicine readily occur to us. I need only mention the progress in State medicine, in public hygiene, in the construction of hospitals, in our acquaintance with the laws of climatic treatment of disease; passing by many others which the limited time at my disposal prevents me from noticing. In no department of medicine, however, has development been more conspicuous than in that of teaching. Formerly, good teachers were rare, and students were compelled to acquire what knowledge they could chiefly by listening to didactic lectures. In my day there was but one teacher in clinical medicine in Harvard Medical School, and he could give but little time to it, being at the same time professor of materia medica; whereas now clinical teaching has to a great extent supplanted didactic lectures in all medical schools. New departments for the study of various specialities have been created, and provided with competent teachers and well-equipped laboratories, and it cannot be long before a full course of at least four years' study will be required of every applicant for the degree of doctor of medicine.

Did time allow, it would be interesting to study the causes of this great advance in medical science, but I can barely allude to them. In many respects they are the same as in the case of other sciences, both physical and moral. Each step forward of one helps the growth of others. Medicine is almost as much indebted for the position it now holds to biology, to chemistry and other branches of physical science, and even to mechanical art, as to clinical observation and pathology. Electricity puts us in touch with the whole civilized world, and every new discovery in science and art is immediately announced from one hemisphere to the other. Communication between distant regions is abridged by railroads and steamships; and scientists whose homes are thousands of miles apart can come together with comparative ease, for the interchange of knowledge. We must, indeed, ascribe to the more frequent professional intercourse which we enjoy a prominent influence on the growth of medical science, as of science in general. In small communities physicians do not often meet for the discussion of medical subjects, and stagnation of ideas is apt to arise from the lack of diffusion of personal knowledge; but when large numbers are gathered together from distant parts, differences of experience and observation give rise to discussion and to the development of new ideas. We find, for instance, that diseases may vary in clinical aspect, in severity, and in methods of efficient treatment, according to geographical situation, climate, elevation, race and modes of life. Some are more or less strictly confined to certain regions, and our knowledge of them must be obtained from observers living in those regions, or visiting them. The treatment of disease, both general and special, often varies much in different countries and in different parts of the same country. In some it is active, including a large amount of medication; in others it is more passive, being directed rather to the condition of the patient and to the special symptoms which he exhibits, than to the disease itself. Certain wide-spread diseases, specific in their nature and self-limited in duration, are found to be but little influenced in their mortality either by geographical locality or by different and opposite modes of treatment; while, on the other hand, age, constitution, habits, and complications play a much more important part in the result. This is strikingly shown in the various papers on the mortality of pneumonia which have appeared in different medical journals during the past year.

It is not easy to overrate the great influence of the medical press in elevating the standard of the profession, and in the diffusion of scientific knowledge in all parts of the world, by the publication of original articles, clinical and other lectures, reports of interesting and instructive cases, and proceedings of societies and conventions. Thousands of practitioners who are unable to leave their homes are thus brought into communication with the highest authorities in medicine, and can avail themselves of the most recent advances of medical science.

Finally, we must recognize as one of the great advantages of medical conventions the privilege of becoming personally acquainted with men from all parts of our country whom we have hitherto known only by reputation, or through their writings. In this way the profession is more closely drawn together, sectional prejudices are allayed, harmony of ideas on the subject of medical improvement is promoted, and the foundation is laid of enduring and delightful friendships.

The organization of this Association is peculiarly adapted to aid the progress of medical science. It represents no one section of our country, but includes practitioners from all parts of the United States and Canada, whose experience, observation, knowledge. and ability are brought together for comparison and for mutual instruction. The programme for the present session includes many subjects of interest and importance, and its length warns me that I must no longer trespass on your time.

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[1] The President's Address before the Association of American Physicians, delivered at Washington, Wednesday, September 18, 1889.

Original Articles.

SCIENTIFIC WORK BY ALIENISTS.

BY F. B. STEPHENSON, M.D.,
Surgeon, United States Navy, A. A. S.

In a recent issue of the *Nineteenth Century* is published, under the title "Lunatics as Patients, not Prisoners," a semi-professional article by John Batty Tuke. A fair amount of expert knowledge is necessary to the adequate appreciation of his remarks: we may also bear in mind that he is at the head of a private asylum for insane.

From the above paper it appears that in England, the taxpayer, seeing a steady increase of pauper lunacy, is inclined to think the millions of money furnished for the arrest of such disease not judiciously expended; that the public look fruitlessly for any manifest indication that the specialty which professes the treatment of insanity has kept abreast in the onward march of science; that grave and deep-seated faults underlie the system of management; a doubt arising as to whether mere philanthropy has not absorbed the pabulum which should have given life and strength to really kind science. The ultimate object of the numerous establishments — the greatest good, that is, cure, of the insane — has not been obtained, because the best methods have not been adopted. While it seems ungracious to demonstrate the failure, in any degree, of philanthropic schemes, yet, if we are to progress, experience should be bold in criticism. Although it is a primary duty of the State to protect, affording refuge is not the highest function of an asylum. To quote the author, "The structure and arrangement of any one of our pauper asylums," with "the constitution and duties of its medical staffs," show that the "organization was begun on the motive of protection and under the psychological (non-modifiable by treatment [?]) theory of insanity." "But what has been done for the disease of the brain? We seek in vain in our asylums for any evidence of systematic inquiry" and treatment based on modern notions of cerebral physiology. We find, indeed, chapels, ballrooms, cricket-grounds, but no hospital or laboratory for psycho-pathologic research. To copy, again, his words, "Committees have but little sympathy with the scientific view. So far is this the case that I have known candidates for appointments objected to on the ground that they had scientific proclivities, and had no knowledge of farming." This original plan has undergone little if any modification down to the present day, while a century of observation has been lost and hundreds of misdirected lives of good men wasted or frittered away. If this be thought strong language, compare the work done since 1850, regarding the pathology of the brain and spinal cord, with what has been accomplished by specialists in lunacy. Save a few recent sporadic efforts, the veteran Calmeil only has given to the world productions worthy consideration as scientific in the almost future branch, psychiatric medicine: for, as yet, treatment is entirely empirical, depending mainly on good hygiene and personal experience.

Dr. Tuke makes pertinent recommendations as to appropriate disposition, style, and expenditure in architecture; changes in supervisional and medical duties; furnishing apparatus for observing, treating, and teaching; and the benefits which will therefrom ultimately reach the public. Physicians in asylums should be allowed to fulfil the proper duties of their office, but not be required to do the custodial routine service for which properly-trained attendants are quite competent. More cures might, in such conditions, be expected, and time secured for original investigation, progress, tending toward evolution of a rational system of treatment.

Concerning alleged difference in principles of management by the English and Scottish, he states that such does not exist, unless it be in the point of administration, efficient supervision over a limited area being the practice in the northern realm. Of bills lately proposed for legislation he strongly combats those which (besides other defects, some of them doubtless due to their being drawn up by lawyers only) permit especial privileges to existing private asylums.

The questions above treated, while not altogether new are of such importance that they may well be brought repeatedly to the attention of a public interested in both the welfare of the individual now needing care, and the scientific investigation that will inure to better guidance of future sufferers from enfeebled or disordered mind. Despite yet existing impediments to the cure of acute cases, and embarrassments in the care of the chronic insane abroad (which evils are apt to become of great moment in this developing nationality), recent literature upon the condition of lunatics in the Old World inclines us to have a somewhat more optimistic opinion than that given in Dr. Tuke's paper. The limits of this review, however, compel us to restrict the present survey rather to facts and projects of our own country.

In America, during recent years, the great number of applications for admission to asylums, and the pressure to provide accommodation for inmates put upon those in charge of administration, have hitherto practically prevented extended scientific work. It has been rather a period of asylum-hospital construction. The capable superintendent is presupposed to possess professional and moral qualifications of a high order, being charged with delicate and responsible duties, in the proper performance of which every citizen of the State is deeply interested. Though illumined by the philosophic spirit, and enthusiastic with faith in the gospel of science, he has been, therefore, necessarily almost exclusively occupied with the business of direction; has not had time to give his personal oversight to details of original research, or to use his own fingers in manipulation of the microscope and other appliances: yet he is abundantly able to indicate what course skilled observers may wisely follow in old or in newly-found fields of work and experiment, and to lay out the tasks with which others can be productively employed.

Granting that European institutions are, perhaps, in some ways, more fully equipped as regards hospital adjustments (mechanism of moral treatment), and more fruitful in publications of value, a careful reader of current literature *in re* may notice that, in this country specialists in lunacy are aroused, and are doing creditable work for science (*V. inter alia, The American Journal of Psychology* and *The American Journal of Insanity*); while at the same time actively engaged in details of administration and the psychic treatment of their patients in the line of occupation and recreation: which latter is often quite as important in remedial effects as more formal schematic or technical endeavor.

Of by no means secondary value in this connection are the physical conditions allowing the patient to be put under beneficent influences with respect not only to the outside world, but also with his companion-inmates mentally sick; conditions that may be supplied by a "flexible hospital-asylum architecture." There seems to be a tendency to limit unduly the meaning of the expression, "scientific work." As Sir James Paget says, "The sick-room is a laboratory with its crucial experiments:" the same is due of the other physical adaptations before mentioned. In the latest-formed and best colleges for higher education (besides provisions removing the thralls of poverty from young talent), thorough preparation, complete facilities, etc., exist, or are being perfected, for the study of psychology, with a comprehensive biology. These are fields of research wherein progress in knowledge, involving promise of future scientific product and consequent practical benefit, now appears most likely. Great stress is also laid upon the importance of "leisure and tranquility" for the accomplishment of veritable, serviceable culture. Considering these things, one is led to think that, if such conditions are recognized as necessary to the normal functions of the average healthy brain, how much more are they needed for arrest or cure, through guidance, of morbid action in one weak and diseased. And this is as truly "scientific work" as the publishing of formal treatises. Our Scottish *confrère* need not fear contradiction when he writes: "What every asylum requires in order to become a truly curative institution is a hospital for the treatment of recent and acute cases, separate and distinct from the main establishment, to which each patient should be consigned on admission." May we suggest, moreover, that the feature of separatism should form the central idea of any hospital-asylum plan, and not be looked upon as of secondary moment? In regard to the bearing of the study of long-seated disease on the cure of insanity, however, he appears to be of an opinion different from that of the critic, Frederick Bryan, who thinks that the close observation of chronic symptoms and subsequent morbid conditions are just as important as the study of recent cases for the amelioration of acute manifestations by treatment; and, indeed, may give far more valuable results (to appear, we may presume, in the better understanding of normal and pathologic psychology). The present apparent hopelessness of cure in instances of confirmed malady should be a stimulus instead of a bar to its careful investigation by men of science. "The cure of the curable insane is one thing: the care and treatment of the insane generally is another. The former is purely a medical question: the latter a social one." Both have undergone, and are susceptible of further great modification for the better, through the practical application of results due to systematic research and experiment.

Unquestionably great progress has, within the last decade, been made in the United States, for the public care of the insane. Though also much improved, the defects of existent arrangements for private care of the insane are recognized, and there is already evidence that an adequate provision therefor will be made in the early future. The amount of change, quietly made, is equivalent to almost a revolution. The constituent *motifs* of the hoped-for resultant harmony may be stated: the creation of trained attendants, faithful, and humanely sympathetic; better systems of classification; allotment of more space and personal liberty; segregation, and greater individualization of treatment; limited number of patients; improved surroundings; increased employment and occupation, with skilfully-directed incentives to action. Institutions for the chronically insane, says Dr. Chapin (the eminent American alienist, in his recent annual address), being brought under the recent comprehensive policy, we should make a further advance toward the best treatment of acute cases.

Some forms of insanity seem to consist of outbursts of psychic force; and in these tonic treatment appears effective: patients with exhaustive mania assimilate several times the average quantity of aliment. Materia Medica furnishes new remedies whose powers are being tested. "Therapeutic suggestion" is not forgotten. Mortality from acute forms has declined; and if but a small proportion of recoveries appear in various returns, it should be borne in mind that such reports include a large number of chronic cases. "Commendable work is being done in the better preparation and record of cases, and the microscopic sections; also, by aid of photography." Yet, as Dr, Savage remarks: "There is still a deep ditch of ignorance between us and the true pathology (and for that matter, physiology) of mind; and this ditch has to be filled by those who sacrifice their time and their energies in steady, unremunerative labor." The New Psychology may help to show the way to solve some of the many important problems that arise to confront alienists in their daily work.

As an example of results due to the spirit animating advanced workers in these matters, we may refer to what is being done by one of the New England asylums within our own knowledge. The institution in mind, the McLean Asylum, has a competent official (termed, perhaps, psycho-pathologist) who is allowed to use his entire time for clinical (psychic and physical) observations, to be later compared with gross and microscopic anatomical appearances. This gentleman, having received a thorough general professional education, enjoyed the advantages of training in the advanced schools of the old world, and being appointed on a salary sufficient for a reasonable living, enters upon his life-career. During three months of each year he is granted leave of absence, so that rest and visits to other centres of activity may better enable him to accomplish, in his own line of duty, something of value. A correspondingly appropriate laboratory is in preparation. The natural outcome of such a plan will be to maintain an intelligent continuity of strictly scientific work, to which other officers of the institution will contribute (although for the greater part of their time immediately occupied with clinical detail), and by which they will be stimulated to more critically exact investigation of psychologic problems.

Another model feature of this refuge for the insane is a school wherein nurses are taught, at first, duties in the care of any sick person; and, progressively receive instruction regarding the special skill requisite for those who take beneficent charge (physical and psychological) of the mentally ill. They are also trained in the practical application to therapeutic uses, by newest scientific methods, of systematic physical exercise (an enlargement of the massage principle), adapting it to the special need of each patient, as exemplified in a lately-completed gymnasium. "The success of asylum management and of hospital treatment is without doubt largely dependent on maintaining a good corps of intelligent and faithful attendants." By this mode of teaching, of preparation for a life-work (one highly honorable), the advantage of the learner and benefit of the general public in want of skilled service, are alike secured. The indirect good of such enlightenment upon the prosperity of the Commonwealth is not unworthy consideration by our State and municipal authorities. This new departure exerts an influence not limited by territoral confines.

While much energy is expended, especially by older men, on the urgent providing for the present physical well-being of the patient, as a matter of primary necessity, nevertheless, an observing, active alienist may see that the modern scientific touch has awakened the spirit of Young America to bend its nascent energies toward earnest, methodic effort. If, as yet, pathology has furnished comparatively little of use in prophylaxis or therapeusis, is this sufficient reason for decrying research in directions warranted by positive advances in alienism, as well as by excellent results in other fields of thought and inquiry? Experiences accumulated from year to year make just our hope in a future full of promise.

These expert men must be obtained in order that the *matériel* be best utilized, both for the direct good of individuals and their future betterment through progress in knowledge, that is, "scientific work." Students (aspirant or actual) need only relief from the burden of self-support to allow them free course in the laborious, persistent endeavor toward which a laudable ambition urges. The doing of creditable work requires steady, reliable aid on the part of those in real, proximate control; and by those who can supply means necessary to keep an active, educated man in physical, mental, and moral health, such as food, exercise, rest and recreation, encouragement, criticism, and judicious approval. As an able and conscientious alienist physician has lately written: "The hope of advancement in the care and cure of the insane lies largely in the perfection of the appliances (and, may we add, a trained *personnel?*) with which we have to work, both for promoting the present welfare of the sick and for the prosecution of scientific inquiry."

The Government (possibly through the agency of the Smithsonian Institution) might serve the general public by forming a "repository of hospital plans;" those in charge, besides having other pertinent duties, being empowered to secure information from foreign sources, "which ought to be accessible, and would prove instructive to medical men, commissions, and State officials." One immediate effect of this knowledge should be the much-needed improvement in the condition of the insane now in our county almshouses; although mere "politics" yet seem to have an undue influence as to the control of such "homes" for the poor and friendless. So long as the permanence of officials, lay or medical, at the post of duty, depends upon the current local election, we cannot expect either good performance of ordinary executive functions or professional results of scientific value: mediocrity, even, is hardly to be anticipated. We commend for study the system of dealing with the insane in county asylums practised in Wisconsin.

Letchworth's admirable book, "The Insane in Foreign Countries," contains succinct data upon the excellent methods of hoary antiquity, when psychology was recognized as a department of medical study. It is an historic summary, and a vivid pen-picture, by an experienced expert, of the contemporary status of European remedial and custodial measures in lunacy. This timely volume affords much of value for those of our citizens occupying positions to influence public opinion toward a wise care of those whom proper and prompt action may save from permanent disease. The author prophetically says: "In America, where, from a variety of causes, there is so much mental activity, and where a condition of great prosperity attracts the surplus population of Europe, there are obvious reasons why the various problems relating to insanity should receive most careful attention."

ESCHAROTICS IN THE TREATMENT OF MALIGNANT DISEASE.[1]

BY JOHN C. MUNRO, M.D., BOSTON.

IN reviewing the history of escharotics in the treatment of cancer, one meets on the one hand with assertion, honesty and implicit faith; on the other with denial, dishonesty and bigotry. Each particular drug has a champion ready to defend it by fair means or by foul, and to give a just verdict to the claims of each champion is by no means an easy task.

One main fact, however, must be maintained here from the very beginning: escharotics are not best and safest for the treatment of cancer in even a fair proportion of cases. The knife or the sharp spoon stand preëminently *the* method of treatment, and it will stand so until some specific is finally discovered; but there are a small number of cases where the use of the knife is impracticable or impossible, or where a fear of its use makes it impracticable; in these, caustics, if any treatment is possible, can and ought to be used.

With regard to immunity from recurrence after removal by caustics there are no data in all history that warrant one to conclude in favor of caustics over the knife; without question the chances are just as good and just as bad in either case, *cæteris paribus.*

The best observers are furthermore agreed that where the treatment is undertaken it must be steadily and vigorously pushed, not done in a half-hearted manner; and by observing proper precautions there should be no especial danger.

Individual cases and statistics will be avoided in what follows; a great many have been carefully analyzed, but they are of such a nature that their value in deciding, absolutely, any question, is almost *nil*, and it has seemed best to give only general conclusions. The various important caustics will be considered in order, and then an outline of the history of their uses, together with that of the most famous men (both honest and dishonest) connected with them.

Next to the actual cautery, which is painful, limited in its action, often more dreaded than the knife, and useful only in a small proportion of cases, the strongest escharotics are the mineral acids. Of these nitric acid is most generally used. It is energetic but difficult to manage, so that ordinarily its employment is limited to the destruction of the epidermis over tumors for the subsequent action of other escharotics, or to the application in small superficial malignant growths. Rubbed up with charpie to a gelatinous mass it is more under the control of the surgeon.

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[1] Read at the annual meeting of the Massachusetts Medical Society, June 12, 1889.

Sulphuric acid mixed with some substance like saffron, lampblack, asbestos or sulphate of zinc, was considerably used at one time; it makes a dry, black crust that is rapidly cast off, but it seems to be inferior to the alkaline caustics. Hydrochloric acid and nitrohydrochloric acid are of less value than nitric acid.

Acetic acid has been used mainly in subcutaneous injections into the tumor. This method of using it, though probably not original with Broadbent, was strongly advocated by him in 1866. He was led to its use from noticing the effect of the acid on tissues under the microscope; that is, a shrivelling up of the cancer cells without coagulation of the albumen. In 1867, Moore showed before the London Pathological Society a cancerous gland that had been injected, during life, with the acid, one part to three parts water. The gland consisted of a thin shell with contents of a light brown inodorous pulp containing pools of free oil, while on microscopical examination very few cancer-cells were to be seen. When successful, apparently a sloughing of the tumor takes place with discharge of the cancer elements, leaving a clean granulation wound behind. Tillaux, Maisonneuve and Langdon, after trial, gave up the method as dangerous and inefficient. Of late years, however, Gies, Duplouy, and a few others, have reported marked successes; but it is a method not destined to become very popular. It is intensely painful, and its use is followed by a more or less prolonged discharge.

Chromic acid is self-limiting in its action, as it is rendered inert by reduction to an oxide in the process of destruction of the tissues. It is very thorough, does not cause very much pain unless impure; and there must be cases where its employment would be valuable, care being taken to prevent toxic effects or a too deep penetration of the tissues.

Osmic, pyrogallic, salicylic and citric acids do not offer claims worthy of consideration, though the latter is said by Brandini and many others to give relief from the intense pain that often accompanies morbid growths.

Carbolic acid (though not belonging in this series) has been used with iodine in uterine cancer by Battey and others, who report good results. Its usefulness must, however, be very limited.

Chloride of zinc, the best of any of the metallic chlorides, and perhaps most useful of any of the potential caustics, has been employed in cancerous growths for about one hundred and fifty years. All pastes containing this agent are, practically, modifications of the formulæ of Canquoin. Velpeau, Maisonneuve, and a host of others, have highly praised its use; while in our own time we find Butlin writing strongly in its favor. Apparently it causes more pain than its rival arsenic, yet it is not only more thorough in its effects, but hæmostatic besides. It may be used in varying strengths with some inert substance or with some other caustic, like corrosive sublimate, arsenic, chloride of antimony, etc. Maisonneuve and Girouard used it rolled out into small sticks or arrows which were inserted through punctures in the sound skin into the tumor itself. It has also been used to a small extent for subcutaneous injection in dilute solution. It forms a dry, white seal that separates in about ten days spontaneously, or in less time if a poultice is used. The surrounding parts may be protected by some greasy substance, and if necessary, the slough can be scarified down to the underlying morbid tissues, and the zinc reapplied until the entire growth is cauterized.

Sulphate of zinc, in the form of anhydrous powder, is highly recommended by Stephen Smith. He first penetrates the skin with a mixture of sulphuric acid and the salt, and then, after leaving the zinc alone on the growth for three or four hours, any liquid residue is removed and a poultice applied, the slough separating in five or six days. Simpson, of Edinburgh, also used this agent with good results.

The following acid or neutral caustics may be dismissed with a brief mention. The use of any of them is restricted, and an extended discussion as to their merits or demerits would be out of place.

Sulphate of copper, dating its use as a caustic from the time of Galen, is mild and but rarely used now.

Corrosive sublimate is very poisonous and of limited value.

Chloride of iron acts very slowly and hardly like an escharotic.

Acid nitrate of mercury may be of service in ulcerated growths where a prolonged action is not required.

Nitrate of silver is of limited value, and permanganate of potash is even less escharotic in its action.

Chlorate of potash, used by Bergeron, Blondeau, and later by Burow, is applied in powder to open cancers, and although it can hardly be said to have an escharotic action, it causes a shrinkage of the tumor besides an absorption of infiltration and a diminution of secretion.

Arsenic (arsenious acid) stands with chloride of zinc and caustic potash at the head of useful escharotics. The names and varieties of pastes that contain this agent as a basis are almost without number, but the simplest are undoubtedly the best. The use of the drug in cancer dates from the earliest times, and by many modern surgeons it is preferable to any other caustic. Some even claim for it a special action upon cancerous tissue, whether administered internally or externally. When properly applied it is harmless, less painful than zinc chloride, and easily managed. Manec investigated about one hundred and fifty cases treated by Frère Côme's paste, and was led to ascribe to the drug an elective action; he found that elimination takes place in five to eight days, and hence advised that the applications be made nine days apart, but if any general, systemic effort is desired this would not seem necessary. Subcutaneous injection has been tried, but with poor results.

In 1874 the younger Marsden, who with his father was surgeon to the London Cancer Hospital, published a treatise founded on statistics of a period covering twenty-two years, and including about six thousand cases, and corroborated in great part by the resident physician, Dr. Crombie. He used a paste for the most part consisting of one-third mucilage of acacia and two-thirds arsenic; he does not deny that a return of the disease may take place, but the treatment can be applied to so many cases that are out of reach of the knife that it is wrong in his eyes to entirely disregard a therapeutic agent of so great value.

His method, which is very simple, and has the merit of having been extensively tried, is briefly as follows: Spread the surface of the cancer, — not over one square inch, however, at a time, — with the paste; over this apply dry lint, any superabundant paste being removed after a space of ten minutes. In twenty-four hours there will be swelling and redness of the surrounding parts, and a drawing pain lasting one or two days. At the end of two or three days a poultice may be constantly applied, a distinct line of demarcation being seen with ulceration, and a fissure separating the slough from the healthy tissue. In six to thirty days, according to size, the slough comes away, leaving a healthy cavity. In some cases it is necessary to apply the paste every second or third day, until the desired effect is obtained, but no poultice should be applied until after the last application of paste, and no paste should be applied after the line of demarcation is formed. From this it is easily seen how partial or even bad results may be obtained from an unskilful use of the agent.

Helmkampff, in an extended article, advises that the strength of the arsenic be not over one-fifth or one-sixth that of the paste, lest too much inflammation be excited.

The extravagant claim made by some that return after destruction of a cancer by arsenic in particular is less liable to occur than after the use of other caustics or of the knife, is not borne out by careful observers.

Caustic potash is a well-known and efficient escharotic. With lime (equal parts) it forms Vienna paste; melted and run into leaden moulds it is called Filhos' caustic. Both forms are used considerably in France. Vienna paste is more manageable than the potassa alone, as it is less powerful and does not deliquesce nor run so much. It is rapid in its action, however, and aggressive. and for these reasons the milder arsenic is preferred by many.

Alveloz (aveloz), the acrid juice of one of the Euphorbiaciæ growing in northern Brazil, has been used by Janvrin in uterine cancer, and a number of good results reported. He prefers it to any other caustic in early cases, while even in those far advanced it is palliative and diminishes pain; others beside Janvrin have also derived benefit from its use.

A short glance at the history of escharotics and of the men that have marked separate eras, either by the benefit or harm that they have contributed, will help to show perhaps some of the merits that really belong to this much-abused subject.

In the writings of Hippocrates we find mention of the use of desiccants and caustics for the purpose of producing a superficial slough and of removing the morbid parts in indolent and malignant ulcers. One of his applications contained hellebore, flakes of copper, arsenic and cantharides, and it seems not improbable that some of the ulcers he speaks of were epithelial.

Galen distinctly advises such caustics as sulphide of copper, tersulphide of arsenic and quicklime, and in speaking of excision of mammery cancer he says that, if it is intended to cauterize the remaining roots of the cancer, care must be exercised when this occurs near important parts.

Following Galen, but after a long lapse of years, we find Guido "lavish of his encomiums on arsenic;" soon after come writers such as Fallopius, Ossenius, Penotus and Borellus, each with some particular preparation containing the same caustic. But it is not until the latter part of the sixteenth century that the use of arsenic as a cancer-caustic is at all systematized and placed on a firm footing. At this time Fuchs practised with great success in England, Germany and Poland; his powder, called by one writer ***Pulvis Benedictus***, was made up of a white arsenic ground to a fine powder, brandy (*aqua vitæ*), a species of wormseed dried in an exposed place, and refined (*splendidi*) chimney-soot. All this was finely ground together and kept in a well-covered glass vessel a year before being used.

For nearly two hundred years little progress was made. It was a prosperous time for quacks and home remedies. Among the latter is the Earl of Arundel's recipe, said to have been given him in 1638 by one of a family of cancer-curers. Later, in 1714, we find the MS. recipe belonging to a family named Pains, with this marginal note: "Used by my Father & Grandfather & Brothers and known as a thing excellent by long Practice in our Family of Pains." Both of these recipes relied upon arsenic for their activity.

In the middle of the eighteenth century the famous Plunkett flourished. He laid great stress on the extraction of cancer-roots. and his recipe, which is also said to have descended from his ancestors, is interesting as given by Sir Spencer Wells: —

℞ Crowsfoot which grows on low ground, one handful. } well pounded.
Dog fennell, three sprigs. }
Crude brimstone, three middling thimblefuls.
White arsenic, same quantity. All incorporated well in a mortar, then made up into small balls the size of nutmegs, and dried in the sun.

He sold the recipe to Guy, a contemporary, and it is also at this period and a little later that we hear of Martin, Pope, the younger Guy and Davidson — the latter enjoying a considerable reputation in our own State.

It remained for Frére Côme to crystallize the various and blundering methods of using arsenic in malignant growths. His paste originally containing red sulphide of mercury, charcoal and dragon's blood, beside white arsenic, was the base of all future arsenical pastes; it was simplified later and adopted into the French Codex. Very many cases were treated by Côme and other enthusiasts, such as Rousselot, Dubois, Dupuytren, Maisonneuve and Manee.

In 1834, Canquoin communicated to the Royal Academy at Paris the results in a number of cases treated by himself since 1824, with pastes of which chloride of zinc was the basis. Four years later appeared a complete exposé of his treatment, and although there is no question as to the virtue in his various pastes, the extravagant claims made by him must be taken with a good deal of latitude.

In 1847, Filhos recommended, especially in uterine cancer, the caustic that bears his name; that is, potassa and lime melted and run into moulds. This caustic, much prized in France for awhile, is a slight improvement over the time-honored Vienna paste.

Eight years later, Landolfi, Surgeon-in-chief to the Sicilian army, made strong claims for pastes containing the chlorides of bromine, zinc, gold and antimony, in various degrees of strength; he considered the gold as a specific in encephaloid cancer, and internally he gave chloride of bromine, fennel and hemlock. Many cases were treated under the diagnosis and attendance of Rokitansky, Meckel and others, but a commission being appointed to investigate the method, decided that it was only a modification of that of Canquoin, besides being more painful and not so efficacious.

At this same time the notorious Dr. Fell, an American practising in England, appeared before the public. He claimed that his treatment, imparted to him by the Indians, was new and depended on Puccoon (blood root) for its activity; it soon came out, however, that he used chloride of zinc, but he made such glaringly false statements and used the caustic so injudiciously that he brought a storm of wrath upon himself from educated, conservative practitioners. The accounts that the latter give of patients that had been through Fell's hands are simply horrible in many cases; in fact they remind one strongly of that which takes place under quackery at the present day and in our own State.

One recalls the story of the Emperor Gallienus cured of a sciatica after undergoing a thousand painful experiments: "Take," he said to his physician, "take, Fabatus, two thousand sesterces, but withal, be informed I give them not for curing my sciatica, but that thou mayest never cure me again."

Meanwhile, in 1859, one of the most notorious of all quacks was holding sway in Paris. This was the so-called "Black Doctor," a negro by the name of Vriés. He soon gained a large clinic among the laity, and in order to give him a fair trial Velpeau placed sixteen cases under his entire charge, at Charité. At the end of three months, Velpeau, who had closely watched the cases, reported to the Academy, mainly as follows: No cases had been cured; the composition of the specific varied, it being aloes or iodine in England, but an inert vegetable powder of some kind in Paris; Vriés had no idea of cancer, nor of examining a patient; no promises had been fulfilled, and he had made false statements to the papers for publication. The patients were taken from his care, and later he was imprisoned, but it is needless to say that he had many devoted believers and followers.

A year after this another imposter was claiming attention in England: the Rev. Hugh Reed, whose treatment consisted in the use of some gas, probably chlorine, together with some internal medication that brought on salivation. At Reed's own request, Sir Spencer Wells investigated a number of his patients. In six he found no benefit from treatment, and in three others there was no cancer.

In 1870, another fraud, Buchanan, appeared on the scene. He claimed to use chlorate of carbon, which he sold for five dollars per pound, but which later proved to be chlorate of potash.

It is needless to name any of the quacks that have flourished since this date, while the names of the few men that have helped from higher motives, to keep this method of treatment at its proper level, can be found in any modern text-book of surgery.

Of the former class all practitioners know at least a few by name and deed. A more or less intimate knowledge of some of the most notorious in this city serves only to emphasize the one great fact that where so-called quacks do deserve credit in one case, there are many where they cannot be censured too severely. They are grossly ignorant of the nature of cancer, and, what is more surprising, of the action of the drugs that they use. They look upon the regular profession as bigoted and subservient to the traditions of European schools, and yet I have failed to hear one of them show the least intelligence on subjects in which they claim to be specialists. They do cure, so far as any one can cure, cancer, — that is willingly granted. When, however, one notorious swindler says that he has cured hundreds of cases, while another, his friend and supporter too, affirms emphatically and confidentially that the former has never cured a single case, but relies on defrauding and cheating a fellow quack for his own aggrandizement, it is difficult to make up one's mind that there is truth in any of their assertions. In fact, the healthiest sign, to be seen now, is the uncompromising condemnation that most quacks hold toward others of their kind. I have had too many proofs of this to leave any doubt in my mind of the fact.

An intelligent, skilful use of escharotics, on the other hand, is capable of doing a great deal of good in cases not suitable for excision; it will also serve to bring into good repute a method of treatment ignorantly employed by a class of men and women that has only selfish, brutal ends in view.

Let this be emphasized by a quotation from Butlin, who speaks from a considerable experience. He says: "I would urge that it (the caustic) be used far more frequently in surgical practice than it hitherto has been. I do not know whether it furnishes a better guarantee against recurrence, . . . but it affords quite as good a guarantee, and I fully believe that its use is attended with a very small risk to life. The prejudice against the use of caustics is in our profession very strong, partly because they have fallen for the most part into the hands of quacks, partly because we are not in the habit of employing them, and are in practice equally ignorant of their vices and their virtues." After speaking of the bone-setters, he concludes: "In the same way, many of our patients with cancer fall, through an apprehension of the knife, into the hands of cancer-quacks, and are treated successfully, at least as successfully as we could treat them, by means of caustics. As we have endeavored to meet and defeat the bone-setters, so must we meet and defeat the cancer-quack; not by ridiculing his methods and refusing to credit the account of his successes, but by making his methods our own, and by employing them with a far better knowledge of disease than he is ever likely to attain to."

To this might be added that if a specific germ should be proven as the cause of this worst of diseases, then we can look for some simple germicide that will serve to render all present treatment useless and antiquated.

What could be more earnestly desired by surgeons of the present day?

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A CASE OF ACCIDENTAL DROWNING.[1]

BY FREDERICK WINSOR, M.D., WINCHESTER, MASS.

Gentlemen of the Massachusetts Medico-Legal Society: — An address from the retiring president would doubtless be received kindly and patiently by the members before me; but the present incumbent has nothing to offer which is worthy to be called an address, and he is unwilling to waste your time with perfunctory speech. There are, however, a few points to which he will venture to call your attention.

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[1] Read before the Massachusetts Medico-Legal Society, June, 1888.

Our attempt to obtain a change in the law regulating expert testimony, by which it would gain in dignity and in value and greatly advance the purposes of justice, has failed — failed for the present only. The reform we seek must come, for it is in the interest of good sense and truth. What is so plain to the medical profession must gradually become evident to the majority of the bar and the bench, who now fail to see that it would help them, as well as us and the whole community. Let us bide our time, and by and by press the reform again, leaving the initiative to those members of the bar whose eyes have been opened.

Our Society has reached a stage of development when it needs, not so much fresh rules and maxims, as the faithful use and practice of those with which it has supplied itself. "The Law of Medical Examiners" has been sufficiently elucidated and expounded. When to make a view, and when to refuse; when to ask permission to make an autopsy; how to conduct and record the autopsy, with the adjuncts, it may be, of chemical and microscopical expert investigation; to keep to *our* function, and leave to the court and the lawyer what belongs to them, — the *theory* of all these matters has been made plain to each of us, and admirable illustrations of its application to practice have been furnished in papers with which our publications are enriched. Familiarity with such applications is, perhaps, what is most needed by the individual examiner; but what the Society most needs is the readiness and habit on the part of every member to prepare for report and to present at our meetings such of his cases as are unusual and instructive.

It is obvious that such a habit would conduce greatly to accuracy and thoroughness in making views and autopsies; while it is almost essential to the well-being of this Society, which languishes to-day for want of just such nourishment.

Those of us whose cases are few — too few to make us as familiar as we feel that the medical-examiner should be with the application of the instructions we have received — are no doubt deterred from reporting cases by the suspicion that what is to us novel or puzzling, may be to our more experienced and accomplished associates an old or a trifling and tedious matter. But this risk must be encountered by every one who cares to learn; and it is in the hope of drawing some better instruction from others that I submit to this meeting the following report of a case: —

The following case was one in which the decision of the medical-examiner was questioned, and an inquest was held:

June 23, 1881, at 7.45 P.M., I was summoned to Woburn, to view the body of a woman which had been found, three and a half hours earlier, floating in shallow water on the shore of Horn Pond, near a place known as the "Swimming-Hole," distant about a quarter of a mile from any road or dwelling.

The officers who took the body from the water reported that they found it floating face down in water about two feet deep; the back, hips, and back of one leg were above water, the head and arms were more deeply submerged, the fore arms and hands resting on the bottom (which was of sand and pebbles). Close by, six or eight feet from the water's edge, her clothing lay in an orderly pile. The ground in the neighborhood was not trampled, and showed no signs of any struggle.

I found at the undertaker's room the body of a middle-aged, well-nourished woman, naked, cold and rigid. The face was not livid, and but little swollen. The eyelids were closed, the face placid. The teeth were clenched, and the tip of the tongue was between them, but not bleeding and not protruded between the lips. About the mouth and nostrils was a little blood, which came from cuts and scratches near by, — one on the right cheek, near the nose; several on the lower lip; all in the same general horizontal line, and all superficial. The tragus of the right ear was also slightly cut or scratched, and smeared a little with blood from the scratch. There was no froth at the mouth or nostrils. The right hand was clenched; the left partly so. There was cutis anserina on the front of the body. On the back of the trunk a few spots of hypostatic discoloration were seen. There was no other bruise, wound, or mark on the body.

Palpation showed that the womb was not enlarged; percussion, that the thorax was normally resonant.

From the husband I learned that he last saw the woman alive at 5.50 A.M., of the same day, when he left home for his work, she having cheerfully got him a good breakfast and seeming well. Returning at noon, he did not find her, and was told by his children (her step-children) that they had not seen her since they rose (about 7 A.M.). He and they supposed that she had gone — as she sometimes went — to visit her relatives half a mile away and nearer the pond. By the children I was told that she had several times said "she should like to have a bathe in Horn Pond." None of her immediate neighbors saw her leave home that morning.

She was well known in Woburn, and generally understood to be of inferior mind, and to have no delicacy of feeling and small sense of decency. I talked with her brother, as well as with her husband, and could not learn that she had ever been subject to "fits," or had spoken of suicide. I did learn, however, that she had "queer times," when she was very absent-minded, red in the face, and not well aware of what was going on, — although she attended fairly to her housework at such times.

The other relations were Protestants and of New England descent. Her husband was Irish Catholic, and had been forced into the marriage by her swearing him to be the father of her illegitimate child; and they did not live very harmoniously, though there were no stories of violence between them.

Her brothers gave me to understand that they suspected foul play on the part of the husband and his Catholic friends. They propounded vague theories as to her being abducted by night, and drowned, or dropped into the pond after being poisoned.

I saw no reason for asking an autopsy, nor did they call for it; and I reported the case to the District Judge as one of "accidental drowning."

The theory which seemed to me consistent with the observed facts, and with the woman's character and history, is that she was subject to epilepsy of the slighter form; that, under the influence of an approaching attack, she started to bathe in the pond; that by the time she had undressed and entered the water, she became dizzy and unconscious, fell face downward, and smothered with little struggle, perhaps with spasm of the glottis. The very slight scratches on the face and ear might well have been abrasions made by the pebbles on the bottom.

The suspicions of her relations grew with dwelling on the strange death, and they employed two resident physicians to make an autopsy within forty-eight hours. I was not notified of the autopsy, but heard at the inquest their testimony, which was not from notes, but from memory. It was negative, — so far as regards the finding of any appearances to account for the death, — with the exception of an effusion or infiltration of bloody serum (rather insignificant in extent and vaguely described) into the substance of the upper half of the right pectoralis major muscle. There was no ecchymosis or other mark on the overlying integument; no injury of the clavicle or ribs. They found no evidence of poison. Their opinion was that death was not by drowning, because they found very little fluid in the stomach or in the plural cavities or air-passages; no froth, or but little, in the air-passages; and no special congestion or lividity of the head, neck, and upper chest. They believed that the woman was roughly used and killed before she was put into the water, and that some one probably knelt on her chest.

The finding of the Court was, "Death from cause unknown."

Nothing that transpired at the inquest has changed my opinion as to the cause of death in this case, but I submit it here to your criticism.

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RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

MEASUREMENTS OF LONG BONES AND ESTIMATION OF THE HEIGHT.[1]

Dr. Étienne Rollet has written a paper on this subject which appears to have attracted a good deal of attention. It is based on measurements of the height of fifty male and fifty female bodies, and then of the length of the three long bones of the arms and legs of both sides. Such observations are very valuable, both from a scientific and a medico-legal standpoint. We shall have to criticize some of the deductions, but we would praise warmly the collecting of the statistics. In the first place the author compares the two sides with very interesting results, though we must remark that the series are far from large enough to be satisfactory, and that we should have liked to have had, not only the average difference between corresponding bones, but greater details as to the number of bones that varied considerably from the mean. The thigh bones are rarely equal, and either side may be the longer. The average difference, however, is slight; namely three millimetres, but in one case it reaches one centimetre. There seems to be little or no difference in this respect between the sexes. The tibiæ are often equal in the male; but they may be uneven, and the inequality is on an average two millimetres in favor of the right. It may reach five millimetres. Only four times was the left tibia a little the longer, and in these cases the left femur was the longer also. In women the inequality is more often in favor of the left, and sometimes in these cases the right femur was the longer. We omit the fibula as of little importance, as it is no true factor in the height of the individual. Twice among the men the lower limbs, as shown by the combined length of the femur and tibia, were equal. The average of the inequality was three or four millimetres, though it might reach one and a half centimetres. One side was about as likely as the other to be the longer. In the women the conditions were essentially the same. Sometimes the longer femur had the shorter tibia below it. Sometimes both bones of one side were longer than their respective fellows.

The results of observations on the superior extremity are more constant. The right humerus was almost always the longer. The two were equal only twice in each sex. The left was the longer only once among the men and twice among the women. The average excess of the right was five millimetres, and it sometimes reached even twelve and eighteen millimetres. The same general statement applies to the radius and ulna; the right is almost always the longer, and the average excess is three millimetres. Considering the arm and forearm as one, it appeared that the two sides were never equal in man, and only once in woman. Only once in man, and twice in women, was the left arm the longer. The average excess of the right was from seven to eight millimetres.

Statistics are wanting to show the age at which asymmetry begins. The author made a few measurements which showed that at birth the length of corresponding bones was equal, but he found a difference between the radii in a child of four months, and in another of twelve months. In a child of six, all the bones in question, except the fibulæ, were unequal. The observations, however, are far too few.

M. Rollet then gives the proportions of the different bones to the height, in both men and women, dividing the individuals into four groups according to height. If we assume that the number of subjects was divided as equally as possible (which is unlikely), each group would consist of only twelve or thirteen individuals, which is insufficient. We pass on to the third part of his work, that in which he gives five methods of estimating the height of an individual from the long bones or from one of them. The first method to which he gives the preference is by means of the tables which he has made, in which both males and females are divided into four groups according to height, and the average lengths of the long bones of each group are given. All that is necessary, knowing the length of a bone, is to find the group in which the length of the corresponding bone most nearly approaches it, to take the average height of that group, and, by a simple application of the rule of three, to find the height that was wanting. Thus the length of a given femur being L, the height of its late owner being X, the nearest average femur being A, and the height of that group being H, we have $X = \frac{H \times L}{A}$.

The second method is essentially similar. He gives tables of heights of individvals, two centimetres apart, fifteen of men and seventeen of women, with the length (we presume the average length, as found in the author's observations) of the bones opposite. Knowing then the length of a bone, you look for it in tables. If you find it precisely, you take the height in the same line. If it is not found precisely, you again have recourse to the rule of three. The third method appears to be to compare the length of the known bone with that of the mean femur, and knowing the mean height, to go through the same process again. He gives a table of the mean length of the bones for both men and women. The fourth is still by the rule of three, and is done by tables showing the proportions of the different bones to the height, the latter being one hundred. The fifth method is a purely arbitrary one, which is, at all events, much less complicated than Bedoe's, which we described in the Report a year ago. It consists simply in multiplying the length of the known bone by the corresponding figures, as shown in the following table.

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[1] Archives de l'Anthropologie Criminelle et des Science Pénales, tome iv, Mars, 1889.

	Femur.	Tibia.	Fibula.	Humerus.	Radius.	Ulna.
Male,	3.66	4.53	4.58	5.06	6.86	6.41
Female,	3.71	4.61	4.66	5.22	7.16	6.66

This paper has attracted a certain amount of attention in France, but the part devoted to the estimation of the height is subject to a good deal of criticism. Rollet's first method is, we think with him, the best; but it should rest on tables composed from very many more measurements than his, and from which very old individuals should be excluded. But both in medicolegal practice and in ethnological investigations, the system is vitiated by the assumption that the murdered man, or the prehistoric race, had the honor of possessing the proportions of the Frenchman of to-day.

THE ARCHITECTURE OF THE FOOT.[2]

Prof. W. Rasumowsky has studied the internal structure of the bones of the foot in a somewhat original manner. His method strikes us as an excellent one. It consists in freezing the whole foot, and in cutting with a saw slices two or three millimetres in thickness. These are first cleaned by a stream of water and then put for several days into strong alcohol, after which they are made transparent by turpentine, or better still, oil of cloves. How they are mounted, if at all, is not stated: but they are examined by direct light, under oil of cloves. A lens may be used with advantage. The soft parts are rendered so transparent that one tissue is hardly to be distinguished from another, but the structure of the spongiosa is said to show many details not seen in sections not treated in this way. We own that we are sceptical that they are better than very thin sections properly cleaned, but what pleases us in the method is that it allows the foot to be studied as a whole.

One of the features which the illustrations at once make evident is that each bone cannot be considered as a whole in itself, but that some at least of its lamellæ belong to systems extending beyond its confines. Another is that in some cases the fibres of interosseous ligaments appear to be conecting links between systems of plates in separate bones. The illustrations, unfortunately, are from drawings, and do not therefore carry the conviction which follows photography, and which would be particularly welcome in this question of the possibility of direct continuity between fibrous tissue and bony plates.

It would be unprofitable to give the results of these studies in detail. There is the well-known system of struts and ties. Antero-posterior arches, with one pier in the heel-bone, diverge through the five metatarsal bones. The lines of these arches are, however, not continuous, but are interrupted at the summit, those of the three inner toes in the astragalus and those of the two outer in the os-calcis. Frontal sections show transverse arches in the front part of the tarsus. These are said to be connected by a system of ties, partly of bony plates, partly of ligaments; and in this connection we must repeat that we wish the illustrations were less diagrammatic. A frontal section through the astragalus and os-calcis shows a series of plates in the main vertical, but with a tendency to incline inward in their course through the lower bone. The author points out a resemblance between a frontal section of the sustentaculum tali and one of the neck of the thigh bone.

A POINT IN THE ANATOMY OF THE FIRST CUNEIFORM BONE.[3]

Messrs. Hartmann and Mordret have made a curious discovery concerning the first cuneiform bone of the foot, which is situated between the scaphoid and the metatarsal bone of the great too, to wit, that it shows signs in many cases of a tendency to divide into two. They state that, in the majority of cases, there is a tendency to a contraction of the breadth at the middle of the anterior surface; and we must own that we are not clear that, so far, they have discovered anything that was not known before. Gray describes this surface as reniform, which implies a constriction on one side.

Their next step, however, brings us to something very new, and which one is surprised should have been overloooked. It is that in twenty per cent. of the cases the anterior surface is distinctly divided into two by a minute furrow, as if drawn by a needle, in the middle, and growing larger at its ends. They frequently found a delicate band of areolar tissue attached to it. When this exists there is a corresponding minute ridge on the back of the metatarsal bone, far too small to be of any surgical importance. In two per cent. of the cases the cuneiform was completely split into two bones, one above the other, presenting opposed articular surfaces except at the outer anterior angle, where there is an interosseous ligament. When the separation is complete, the anterior surface of the scaphoid shows four instead of three articular facets. These observations were made on three hundred feet. The authors find that the peculiarities were symmetrical. The division of this bone into two is already known as a rare anomaly. Le Dentu has thought that it had two centres of ossification, which unite at four years. Our authors appear to have examined few children's feet, and have never found two centres, though once the centre showed signs of a constriction near its middle. The scientific significance of the tendency to divide may be of considerable importance.

EXPERIMENTS IN CRANIO-CEREBRAL TOPOGRAPHY.[4]

Messrs. William Anderson and George Henry Makins read a paper before the Anatomical Society of Great Britain and Ireland, describing a very interesting study of the variations of the course and position of some of the chief fissures. Now that cerebral surgery has a recognized standing, the importance of an accurate placing of the main features of the motor region is self evident. The method pursued by these gentlemen is an ingenious one. Their observations were divided into three groups. The plan may be described in their own words:

"A preliminary series of examinations were conducted with a view to gain certain approximate data as to the relations of the three principal fissures to the cranial walls. Upon the indications so obtained were founded a second and larger set of investigations, mainly guided by experimental punctures made at certain test points upon the scalp; and lastly, a number of adult crania of different types, but free from abnormalities of form or development, were submitted to measurement with a view to determine the range of variation of the principal sutures, eminences, and ridges in their relation to each other and to certain standard lines drawn upon the surface of the skull."

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[2] Internationale Monatschrift für Anatomie und Physiologie, bd. vi, heft. 6, 1889.

[3] Bull. de la Société Anatomique de Paris, 1889, fasc. iv.

[4] Journal of Anatomy and Physiology, vol. xxiii, April, 1889.

In the first series but one side of the vault of the skull was removed, the dura opened, and the course of the Fissures of Sylvius, of Rolando, and the external parieto-occipital, determined, and then marked with colored mucilage on the outside of the dura, which had been accurately replaced. The separated portion of the calvaria was then replaced, and the head turned so that the mucilage on the dura left its mark on the inside of the skull. The piece of bone was then removed, and holes drilled through it along the lines of the fissures. The relations of these lines to the sutures and eminences were then carefully noted. From these observations a brain-plan was drawn upon a skull of average dimensions. Provisional points were selected for certain points in the fissures; and three standard lines were drawn on the scalp, for their localization.

The second series consisted of experiments made from these lines which were drawn on the scalp. Holes were then drilled through certain points in them, and pins thrust through. It was then easy to expose the brain, and mark the relation of the punctures to the fissures.

The third series consisted of measurement of certain lines on thirty skulls, in order to ascertain the value of the sutures and eminences as guides to regions of the brain. We must omit the details of the bony measurements. Suffice it to say, that most of the points varied considerably. Three, however, are both relatively stable and easily recognized during life, namely, the glabella, the external angular process of the frontal bone, and the external occipital protuberance. It was found that the relations of the convolutions to the surface of the skull and to each other varied "within rather wide limits." The course of the fissures (apart from their relations) was found to be very uncertain. A series of tracings of the Fissures of Rolando shows some surprising meanderings.

We must now define the arbitrary lines which were chosen for standards. They are (1) the sagittal line, from the glabella, at the level of the highest point of the orbital arches, to the external occipital protuberance; (2) the frontal line (an unfortunate name), from the mid-point of the sagittal line to the depression immediately in front of the tragus of the ear; and (3) the squamosal line, from the most prominent point of the external angular process, at the level of the superior border of the orbit, to the junction of the middle and lower thirds of the frontal line, and prolonged an inch and a half beyond it. The upper end of the Fissure of Rolando was always found between the mid-sagittal point, that is the point in the middle of the line, and one three-quarters of an inch behind it. The distance from the mid-sagittal point bore, however, no constant relation to the length of that line. The lower end was found in the squamosal line, between the point where it cuts the frontal line and a point three-quarters of an inch before it. As already stated, the course of the fissure between these points was often remarkably irregular.

As to the Fissure of Sylvius, its point of starting is necessarily rather a vague spot. It is in the squamosal line, between one and one-eighth inches and an inch and a half behind the external angular process. The bifurcation is in the same line, between an inch and a half and two inches from the angular process. The main branch of the fissure follows the squamosal line closely; but it turns up at its end, which is near the parietal eminence. The authors state, however, that a circle an inch in diameter would fail to enclose all its variations.

The external parieto-occipital fissure is on an average seven-twelfths of the distance from the mid-sagittal point to the occipital protuberance, in other words, near the apex of the lambdoidal suture. Judging from the diagram, there is less variation in its situation than might have been expected.

THE ANATOMY OF THE PROSTATE.[5]

Mr. Joseph Griffiths, rightly thinking that our knowledge of the prostate is unsatisfactory, has studied it anew. He finds that the third lobe is not always present, but that when it occurs it is one of the original parts of the prostate, or at least one that appears early, and is not merely an extension of the other two. We referred some years ago in these reports to a paper by Mr. Harrison, of Liverpool, on the "Prostate Muscle," in which he maintained that the organ is essentially a muscular one. Mr. Griffiths, on the contrary, believes that it is essentially glandular. The following are his chief conclusions:

"(1) *The third or median* lobe exists, in many instances, as a well-defined portion of the gland at puberty and adult life, that is, the period before enlargement of the prostate occurs; but in other instances, it is very small or entirely absent.

"(2) This part, or lobe, possesses ducts of its own, which open upon the parts of the hinder wall of the prostatic urethra, which extends from the vesical orifice to the *verumontanum.*

"(3) This part, or lobe, also develops separately from the part of the urethra just mentioned, in the same way as the lateral lobes do from the part of the urethra on each side of the *verumontanum*, and it is not the result of an extension backwards of gland tissue from the lateral lobes into the interval between the vasa deferentia and the neck of the bladder.

"(4) The whole gland is peculiar in this particular, that the 'ducts' are short, and form mere channels in the stroma, being destitute of any special coats, except a layer of epithelium lining them; and that the muscle tissue of the prostate is so arranged around the termination of the 'gland tubules' which form the secreting parts, that the muscle, when it contracts, is able to act as an efficient expulsor along the whole course of the tubules.

"(5) This arrangement of the muscle in the prostate is developed in relation to the function of the gland; and thus it is that the secretion accumulated in the tubules can be completely expelled into the urethra at once, or at least in a short time.

"(6) The muscle-element of the prostate is derived from the outer, circular, non-striped muscle-coat of the prostatic urethra, this coat being continuous with the circular-coat of the bladder; therefore the muscle-element of the prostate is only indirectly continuous with that of the circular-coat of the bladder.

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[5] Journal of Anatomy and Physiology, vol. XXIII, April, 1889.

"(7) The *utriculus masculinus* is not, properly speaking, embedded in the prostate. It forms a distinct structure separate from the prostate; and as the growth of the prostate greatly exceeds that of the *utriculus masculinus*, the latter is in time covered in, and appears as if imbedded in the former."

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Clinical Department.

A CASE IN WHICH THE NIGHT-CRIES OF HIP DISEASE WERE STOPPED BY FLEXING THE LEG.

BY JOEL E. GOLDTHWAIT,
Formerly Interne at the Boston Children's Hospital.

B. D., a healthy looking child, six years old, was admitted to the Children's Hospital, May 25th, and entered the service of Dr. E. H. Bradford, through whose kindness I am permitted to report the case.

She has had hip disease for the past nine months, and has been under treatment for the last six, during which time she has worn a hip splint, a high sole on the well foot, and has walked with crutches.

The first three months of treatment she did very well, but after that she began to cry out in her sleep, at first only once or twice, and then as many as fifteen or twenty times during the night. There were no other acute symptoms; no signs of an abscess; no pain; no apparent deformity, either flexion, abduction or adduction; and the motion in the joint was by no means entirely restricted.

Because of the severe "night-cries" she entered the hospital. For the first two days she was kept in bed on a "Bradford frame," with the leg fixed by means of sand bags and a weight of four pounds for extension. Each night she cried out sharply many times. She was then given ten grains of the salicylate of soda, four times a day, as suggested by Dr. Lovett.[1]

In the majority of cases this treatment has stopped the cries in a day or two, but in this case the soda salt was continued for about two weeks without any diminution in the night-crying. (During this time the extension weight had been doubled, without giving relief.)

On June 11th, by way of experiment, the salicylate of soda was omitted, and the leg was flexed at an angle of about thirty degrees with the bed, and the weight raised to pull in the same direction. That night she cried out once, and upon the six following nights she slept soundly all night.

On the night of the 18th of June the leg was put down flat upon the bed, and she cried out once. This was repeated the following night with the same results. Again the leg was raised, and up to the time of discharge, with the leg held in this position, there were no more night-cries.

During the greater part of her stay at the hospital she was up and about the ward during the day, and the leg was flexed only at night. She is to carry out this same treatment at home.

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[1] Boston Medical and Surgical Journal, vol. cxx, p. 361.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE. SECTION ON ORTHOPEDIC SURGERY.

STATED MEETING, March 15, 1889. A. B. JUDSON, M.D., Chairman.

CICATRICIAL CONTRACTION OF FINGERS.

Dr. A. M. PHELPS presented a patient on whom he had operated four weeks ago for restoration of motion to the fingers, which had been flexed in the palm by a cicatrix in the wrist of eight years' standing. He had freed each tendon from the cicatricial tissue, and had secured healing by blood-clot, with the hope that new sheaths would be formed in the clot. The wound was dressed antiseptically, and the first dressing was changed at the end of three weeks. The prospect of recovery of motion was good.

DR. R. H. SAYRE said that Paget had long ago recognized the organization of blood-clot after subcutaneous tenotomy. The case presented by Dr. Phelps shows that advantage can be taken of it after open incision under antisepsis.

HYSTERICAL EQUINO-VARUS.

Dr. N. M. SHAFFER presented a patient, a girl of twelve years, who had been affected for ten weeks with hysterical equino-varus and rhythmical movement of the left foot. The talipes was reducible manually, but the motions were persistent. There was inability to walk, the result of the disability of the quadriceps extensor group. Before coming under Dr. Shaffer's observation, plaster of Paris had been applied to the limb for several weeks, but without benefit.

DR. A. B. JUDSON thought that choreic elements were seen when the patient attempted to walk. He recalled a case of rhythmical myoclonus reported by Dr. Peckham in the Archives of Medicine in 1883, in which the patient had been subjected to a great variety of treatment, and recovered finally after the hypodermic use of atropine.

DR. S. KETCH suggested treatment by hypnotism.

DR. R. H. SAYRE thought that the case illustrated the fact that abnormal muscular contraction can produce degrees of deformity as marked as those caused by bony distortion.

DR. L. W. HUBBARD thought the case allied to chorea, being the result of nerve irritation or exhaustion. He suggested absolute rest or recumbency for a long period, with efforts to improve the nutrition.

DR. A. S. HUNTER had treated with success a case of hysterical hip by the administration of ignatia amara. The use of this drug in a number of cases of this kind has led him to value it highly when the disturbance was limited to groups of muscles only; but he thought it was of little value in the treatment of general choreic conditions.

DR. V. P. GIBNEY had had a favorable effect in a case of rotary spasm of the neck, from the fluid extract of gelsemium, given in five minim doses, and pushed almost to toxic effects.

DR. H. W. BERG said that the contractions in the case shown could not be due to nerve lesion because it yielded too readily to manual replacement. Where there is irritation of motor nerves, as in spastic paralysis, it is extremely difficult to reduce the limb to a proper position. He suggested the ordinary treatment of chorea with electricity, to make an impression on the mind rather than on the nerves.

THE MANAGEMENT OF HIP-JOINT DISEASE.

The paper of the evening was read by **Dr. Phelps**, entitled

THE MANAGEMENT OF HIP-JOINT DISEASE FROM AN ANATOMICAL BASIS.

In regard to the pathology of this disease, Dr. Phelps believes that it is a local tuberculous affection due to accidental inoculation and not to a constitutional or strumous condition. Following Volkmann, Albert, and König, he believes that the inflammation at first simple, becomes tubercular by inoculation, and then purulent. The irritation of the peripheral extremities of the nerves in or about the joint produces muscular spasm, which in turn distorts the joint by trauma aided by the bacilli of tuberculosis.

In regard to treatment, he relies on mechanical treatment, believing that if we immobilize a joint and remove the intra articular pressure, nature will take care of the tuberculous material. His experiments on dogs had convinced him that immobilization of healthy joints does not produce anchylosis. Encouraging motion in an inflamed joint is a violation of the surgical law that an inflamed part requires rest.

He believes that the muscular spasm, which is a most serious element of destruction, should be overcome by extension, and that while extension is necessary to secure immobilization, it is not sufficient by itself. He therefore resorts to a combination of extension and fixation; the extension to be in a line corresponding to the axis of the neck of the femur.

Treatment as a rule should be begun in bed, extension being made in two directions, that is, toward the footboard and laterally, the body and well leg being fixed to a long splint extending to the axilla. If the deformity does not yield to extension properly applied, the tissues at fault should be divided subcutaneously or by open incision. Abscesses are to be incised through their entire length, and thoroughly scooped out and washed, strict antiseptic precautions being observed.

Distension of the capsule should be relieved by aspiration or incision; then traction will not produce pain.

He exhibited a patient in a portable bed, which is an ingenious substitute for the wire cuirass, made with a board cut in an outline of the body, and plaster of Paris. The child is laid on the board and then the whole enveloped with plaster of Paris bandages from the foot to the axilla. The plaster is then cut away in front, the interior comfortably padded, and the patient held in place by lacings or bandages. Extension and fixation in bed are to be continued until the active symptoms and the deformity have entirely disappeared and the spasm of the muscles is no longer present. Adults are then given crutches and a portable splint which has a perineal crutch, extension by adhesive plaster, an abduction bar, and an upper (thoracic) ring to prevent flexion and extension at the hip. Children, after treatment in bed, are to have the portable bed, and then the portable splint, with or without the high shoe and crutches.

Dr. J. Ridlon was pleased to hear the author of the paper take the ground that hip cases should be cured without deformity. He recalled a case of a patient in which the muscular spasms had been relieved by pinching the muscle. The child was very thin, and it was found that when the adductors were separated from the other muscles, and the belly of the muscle was pinched without any attempt at fixation, there was as much relief as could have been afforded by lateral traction.

Dr. Shaffer said that the paper had suggested to him the importance of separating, in our minds, the disease from the deformity. It is a question how far we are justified in meddling with the deformity, which is simply an expression, or so to speak, a symptom of the disease. In his experience, attempts at speedy reduction of the deformity had been followed by disastrous results. Nature gives a very positive indication in the acquired position of the thigh, that in which the immobilization of Nature reaches its maximum, and the diseased parts receive the greatest relief from reflex muscular spasms. If we forcibly interfere with this effort on the part of Nature, we inflict a distinct traumatism.

On the threshold of treatment, the important question is, not whether traction is to be made in the line of the shaft or the neck, but how to secure an artificial immobilization in the position nature assumes as the one that affords the most protection to the inflamed parts. He believed that if the joint was protected from traumatism, in other words, if traumatic contact of the inflamed joint surfaces is removed,— and this can readily be done by the use of portative apparatus without entailing immobilization of the entire body from the head down,— the joint is placed in the best-known local condition.

The portative traction treatment is compatible with fresh air, sunlight, and moderate exercise, which are the best means of combating the tubercular disease, and the tubercular diathesis. More lives have been saved, and better results have been thus secured, than by any other method which has been thoroughly tested.

Dr. R. H. Sayre agreed with Dr. Shaffer as to the importance of maintaining the general health, and the inadvisability of general immobilization of the body, if the diseased joint could be controlled without it. He thought that complete immobilization of the hip-joint in young children was very difficult to secure; and that the movement that stopped short of producing muscular spasm and pain, was not harmful. For poor children particularly, he thought the portable bed was an admirable contrivance.

The relief obtained in some cases by pinching the muscle could be explained on the supposition that it stopped the reflex action of the muscle. It is known that firm constriction of the belly of a muscle will, in certain cases, abolish spasm.

Dr. Charles L. Scudder, of Boston, advocated a more frequent resort to the results of experiment on the cadaver. He recalled Dr. Bradford's experiments made in 1880, in which it was found that in an adult a force of one hundred pounds was not sufficent to separate the head of the femur from the socket; while in the shallow and not yet completely ossified acetabulum of a young child, a moderate force caused separation, and still less force was required in the fœtus. Dr. Scudder believed that in hip-disease of children, a tractive force of from three to five pounds would separate the joint surfaces, as was illustrated at the Children's Hospital, in Boston, in the case of a young boy who had hip disease and night cries. The joint cavity was opened and a small quantity of pus evacuated. While the boy was under ether, it was found that traction made with the hand separated the joint surfaces to such an extent that the finger could be placed between the head and the acetabulum.

Dr. **Hubbard** thought that no one at the present time held the opinion that anchylosis is caused by immobilizing the joint affected with chronic inflammation. He had found it difficult to get anchylosis in cases where it was desirable, as in disease of the knee. The first object is to give rest to the joint, which is best done by traction; not to separate the surfaces, but to overcome articular pressure which leads to muscular spasm. He believed the long hip splint gave sufficient immobilization for all practical purposes. It is more easily managed than the portable bed of Dr. Phelps, which from neglect would be likely to cause excoriations. As the disease seems to be a struggle between the tubercle bacilli and the vitality of the organism, he thought it especially important to place the system in the best possible condition to resist the attack. He had rarely seen constitutional disturbance from abscesses which had been let alone, although in exceptional cases acute and painful conditions are certainly greatly relieved by surgical interference.

Dr. **Judson** commended the title of the paper. It was an admission that hip disease is not to be cured by treatment, but so managed that the almost inevitable recovery by natural processes should be with the minimum of disability and deformity. He thought that more emphasis should be placed on the importance of protecting the joint from the traumatisms of standing and walking, as is done by the use of Hutchison's extra long crutches and high sole on the well foot. But in every case there are long periods of exemption from pain, when this simple apparatus will be discarded. The ischiatic or perineal crutch of the hip splint, however, cannot be willfully discarded; and when it is seen that the rack and pinion not only furnish traction but also a convenient means of adjusting the length of the upright, the hip splint appears to come very near perfection as an instrument for the management of hip disease. He had never recognized either the trauma said to be caused by reflex muscular contraction or the alleged mechanical counter-action of the muscles by traction. He believed, and had always held, that the hip splint mitigates reflex muscular contraction by allaying the inflammation which gives rise to it. This it does by arrest of motion and prevention of pressure; motion being arrested by traction brought about by the use of the key, and pressure being averted by the perineal or ischiatic crutch, which makes the limb a pendent member. As the inflammation is resolved the reflex muscular contraction ceases.

The last annual report of one of our orthopedic institutions contains a table, from which it appears that there have been under treatment 371 cases of disease in the hip; 6 in the shoulder; 85 in the knee; 3 in the elbow; 27 in the ankle; and 5 in the wrist; an aggregate of 483 in the lower, and 14 in the upper extremity. Shall we draw the inference that the incipient osteitic focus is found only or chiefly in the cancellous tissue of the lower extremity, or that a focus in the upper extremity more readily undergoes resolution by reason of its comparative exemption from violence? If the latter view is correct, it follows that the limb is to be made a pendent member by the persistent use of the axillary or ischiatic crutch at the earliest recognition of the disease. In some cases, an early diagnosis may be facilitated by the following simple method:

Let the patient sit on a table with the legs hanging and the knees separated: in this position, swinging the leg laterally is possible only with rotation of the femur; and if one leg oscillates in a less arc than the other, it induces or confirms a suspicion of the integrity of the joint.

He did not believe in treating abscesses and sinuses except indirectly through general and local management of the bone disease in which they originate.

Dr. Gibney was in favor of securing absolute immobilization, but sometimes he would rather have less perfect immobilization, if by so doing he could secure a change of air and climate, with the consequent improvement in the general nutrition.

Ordinary hip disease is managed satisfactorily by the portable traction splint, with or without the rack and pinion; and he had been agreeably surprised with the facility with which these patients ran around in the tenement houses. They come to his clinic only every three or four weeks for adjustment of the apparatus; and during these intervals engage in the most active sports: they certainly do not lie in bed in dark rooms and die of pyæmia. It is unsafe to put these children in an appliance like a cuirass or the portable bed, unless one is certain of being able to attend to them at short intervals. It had been his lot to see cases in which he had been unable at times to obtain proper co-operation on the part of the patient's family. He had often seen abscesses burrowing up to the spinal column and down to the knee; and such cases seemed to baffle even attempts at surgical interference. We must be guided a good deal by circumstances, and if we can protect the hips from trauma and give the patient the benefit of out-door exercise, abscesses will generally be insignificant.

He believed in correcting the deformity speedily, if necessary, by dividing tendons and bone under an anæsthetic; for, by so doing, we save much time and lose nothing.

In regard to aspirating the joint over-distended with fluid, it was almost impossible to diagnosticate an over-distended hip-joint. The position of the limb does not depend on the quantity of fluid in the joint, but is due to reflex spasm, and the efforts made by the child and nature to secure fixation.

Dr. **J. H. Girdner** described an experiment on the cadaver in which great force was applied without separating the surfaces of the hip-joint. He also cited a case in which it had been necessary to keep the hand applied to the face for nine weeks in the course of a plastic operation on the nose. At the end of this time there was no limitation in the motions of the elbow and wrist.

Dr. **Ketch** believed that hip disease is so often characterized by exacerbations that all attempts at a division into stages are of no practical value. He thought that the hip splint could be often of use for the reduction of deformities, even in those periods when the patient is confined to his bed. In general, he believed it was a great mistake to make use of any apparatus which can be entirely left to the care of the patient or family for long periods.

The explanation of the relief of pain by compression of muscles was to be found in an involuntary action on the part of the patient, which secures fixation and traction at the same time.

Dr. Berg, speaking from the standpoint of the general practitioner, who frequently saw children in the very beginning of hip disease, related the histories of three cases which had presented the symptoms of early hip-joint disease and yet recovered perfectly after a rest in bed for a few weeks. He now insisted on all patients remaining in bed for several weeks before commencing any other treatment.

Dr. Phelps, in closing the discussion, said that many cases in tenement houses, whether treated by the long traction splint or by the portable bed, are deplorably neglected; but this does not argue against the use of either apparatus: it simply illustrated one of the difficulties with which all practitioners have to contend. He valued the portable bed because he desired immobilization of the affected joint, and this could not be obtained with splints having joints in them, and not including the trunk. He could relieve his patients better in bed during the period of deformity, and so adopted this method of treatment. He had seen patients in England who had been in bed for several years, and were still in excellent health. He did not, however, advocate prolonged bed treatment. Believing that the cases in question are inoculations of the bacillus tuberculosis on a previously inflamed surface, and not instances of constitutional tuberculosis, he explained the frequency of tubercular joint diseases in the lower extremity, by the statement that the joints of the lower extremities being more subjected to traumatic inflammation, furnish good ground in which the bacillus of tuberculosis could more readily reproduce itself.

He had presented his honest convictions, and hoped to report his cases later in such a way that others could disprove his statements, or he could substantiate his views.

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ANNUAL MEETING OF THE ESSEX NORTH DISTRICT MEDICAL SOCIETY.

E. P. HURD, M.D., CORRESPONDING SECRETARY.

The Essex North District Medical Society met at the Franklin House, Lawrence, Wednesday, May 4, 1889, Dr. C. G. Carlton, President, in the chair.

Dr. W. J. Sullivan, of Lawrence, read a paper on the

DISEASES OF THE HEART,

in which, in the brief space of half an hour, he took a wide and comprehensive survey of this vast subject.

Dr. Kate C. Hurd, of Newburyport, read a paper entitled

INTERESTING CASES OBSERVED IN THE NEW ENGLAND HOSPITAL FOR WOMEN AND CHILDREN DURING THE YEARS 1888 AND 1889.

Twenty-six years ago this hospital was founded by Dr. Marie E. Zakrzewska, who was then professor of Obstetrics in the Female Medical College of New York. During the first year there were forty-one obstetric cases in this hospital. While Dr. Ann Preston labored untiringly for the establishment of the Woman's Medical College of Pennsylvania, Drs. Zakrzewska and Elizabeth and Emily Blackwell felt the imperative need of a hospital for women and children, where women who were pursuing the study of medicine could have clinical advantages for widening their medical education, and where at the same time female patients might be treated by their own sex.

The present hospital building was finished and in use in 1872. Its situation is in Roxbury, on a hill surrounded by fields and uncultivated lands, facing the northeast, so that every room in the house has direct sunlight during some portion of the day. The wards have each from one to four beds. The hospital charges varying somewhat with the number of beds. One-half the wards are devoted to surgical cases, and the other half to medical patients. The maternity cases are cared for in an entirely separate building, especially arranged to allow thorough cleanliness and antisepsis. This cottage, however, is proving too small, and plans are already made for a new house large enough to accommodate the women who desire to enter before confinement. Over 150 internes have already broadened their medical education by a year of practical work in this institution.

There is a training-school of twenty nurses, whose course covers eighteen months in the various departments, and to have obtained the diploma means that they have proved very faithful and efficient in the care of the sick confided to their charge.

The Maternity Department proves of great value to patients, internes and nurses. During the past eleven months 112 women have been confined there. Of these, fourteen were cases absolutely requiring the use of forceps. In two of them high forceps were used, the os uteri having been previously dilated artificially. Five were premature births; three were breech presentations; two were cases of transverse presentation requiring version; and three patients had puerperal convulsions, one before, the others after the birth of the child. There was one case of puerperal mania: the patient died insane at the McLean asylum.

To the female interne belongs the entire work of delivery and the directions to the nurses as to the preparation and after care. She is required to be very accurate in the diagnosis of position and presentation; and if during delivery there be a tear of the perineum, this is immediately repaired with stitches. Three of the primiparæ for whom the use of high forceps were needed, were torn through the whole perineum and sphincter ani. These ruptures were so promptly and thoroughly attended to, with complete antiseptic precautions, that the result was perfect union with entire control of the sphincter.

All the latest details of antiseptic midwifery are strictly carried out, and not a case of puerperal fever has occurred in this hospital for over five years. There has been but one case of mammary abscess.

After confinement the patient is lifted carefully and taken to another ward, which she is to occupy. After each room is vacated it is fumigated, and washed with a disinfectant solution, and the utmost pains are taken to prevent septic infection. The patient is given liquid diet the first day, light diet the second, and on the third day, full diet. She is required to nurse her baby regularly every two hours during the day and three times at night. During the intervening time, the infant is kept in another room, so that the mother may not be worried by its cries. On the tenth day, the patient sits up in bed half an hour, if all is well. On the fourteenth day she gets out of bed, if there be no contra-indications, and sits in a chair for half an hour, and is allowed to sit up still longer on the following days, till the twenty-first, when, if in good condition, she is discharged. The dressings are pads of cotton antiseptically prepared, covered with bichloride gauze. These are renewed as often as soiled. If the lochia are at all offensive, a vaginal douche is given several times a day of corrosive sublimate, 1 : 5000. All patients have douches from the tenth to the twenty-first day. After the fourteenth day a vaginal examination is made. Any laceration of the cervix uteri is at once treated by the modern methods. It is remarkable how rapidly a gaping tear of the cervix will heal under the occasional application of a strong solution of silver nitrite or pure carbolic acid.

Incipient mammary abscesses which do not yield to bandaging, ice bags and belladonna, are treated with hot applications of ammonium chloride in water.

The essayist gave an account of several of the most interesting cases occurring at the Maternity the past year, and then spoke of the surgical work of the hospital, one hundred and one operations having been performed during the past year. There have been eighteen laparotomy cases during the past eleven months, with three deaths. Six were hysterectomies for the removal of large uterine fibro-myomata. Six large ovarian cysts were emptied and excised, all with complete recovery. Other laparotomies were for the cure of hæmatocele, pyosalpinx, perinephritic abscess, etc.

One immense papillomatous cyst was removed. It was adherent to the uterus, rectum, bladder and posterior abdominal wall, In its removal most of the body of the uterus was taken out with it. The patient recovered, and is now doing housework.

The following interesting case from the essayist's notes is worth quoting in full.

When called to see this patient (Mrs. D., aged twenty-four, a Dispensary patient), December 1, 1888, I found her in bed, suffering intensely from what seemed to be an attack of localized peritonitis in the left inguinal region. She had been flowing for more than a week. Strength, appetite, sleep were absent. I ordered hot vaginal douches, gave her morphine suppositories for the pain, and ordered poultices over the seat of pain. Ergot considerably lessened the hæmorrhage. Pain subsided; appetite returned; and for a few days she gained rapidly.

December 7th, five days after my first visit, I found her again in great pain, with some bulging on the left side just above Poupart's ligament, and intense pain on pressure there. She had no fever; her pulse was good. The uterine hæmorrhage returned; and again the hot douches, the opium, the salines, brought relief. On the fifteenth day she decided that she felt so well that she would stay in bed no longer. She went down a long flight of stairs to her kitchen. Almost immediately the pain returned and was so severe that she was obliged to be carried to her bed-room. This pain continued with great intensity all night. The flowing began again, was very abundant; and the next morning I noticed that the tumor in the left inguinal region was much larger than before. It was easily defined; irregular, and as large as a goose's egg, felt both by internal and external manipulation, and seeming like a dilated tube. The question arose, is this a tubal pregnancy or a hæmato-salpinx?

During the entire illness with the discharge from the uterus there had occasionally passed shreds of membrane, sometimes as large as a silver quarter.

From her history I found that she had menstruated irregularly during her entire gestation, seven years previously, and that a short time before her present sickness she had had amenorrhœa, lasting six weeks, with morning nausea, a slight cough, etc., owing, she thought, to a severe cold; and she took hot drinks, hot foot-baths, etc., until the hæmorrhage commenced, which continued during the three weeks in which she was under my care, with greater or less severity and violent pain in the left side.

After this, the pain and flowing nearly ceased, though the tumor gradually increased; and again, without permission, she went down stairs, and while there had three sinking spells, each lasting fifteen minutes. I felt that it was fully time for the physician of the month, Dr. Emma Call, to see the case with me; this was brought about on the following day, and the case being diagnosticated tubal pregnancy, sent her out to the hospital. For the first week after admission the pains continued with frequent exacerbations and rapid increase in the size of the tumor. December 28th, the pain was with difficulty controlled by opiates, and the tumor doubled in size. A consultation of the surgical staff was held, and it was decided to make an exploratory laparotomy, and, if possible, to remove the growth. After the usual careful preparations, as to perfect antisepsis, bowels, diet, and other details, the operation was begun. The abdominal cavity was opened by an incision four inches long, below the umbilicus. Immediately beneath the peritoneum could be seen the tense bluish membrane forming the cyst-wall, on the left side, extending nearly to the umbilicus. The peritoneum was so adherent to this that it was with difficulty separated from it. The sac was punctured, and drained of a thick dark-colored and bloody fluid. It was found to be a much dilated tube with exceedingly thin walls. This was seized with cyst forceps and drawn out of the cavity, the broad ligament ligated; and the cyst, tube, and ovary of the left side were removed. The abdominal cavity was washed with boiled water, a glass drainage-tube inserted, the edges of the wound approximated, and dressed with iodol. The patient made a rapid and uneventful recovery.

The tumor was found to be a large hæmato-salpinx, with a small nucleus, which was probably nothing but a blood clot. The left ovary was not diseased.

Among the list of surgical cases were numerous ulcers of the leg, acute or chronic varicose or syphilitic. In the dispensary practice we had very good success with the use of hot water, soaking at night, and the close application of a piece of bright tin accurately fitting the ulcerating surface.

The essayist detailed several interesting cases occurring in her dispensary practice, spoke of the great benefits which she had derived from acetanilide in ovarian and congestive dysmenorrhœa, and even in labor. When given during parturition, "acetanilide regulates the pains and shortens the intervals, while apparently quieting the patient." The remarkable benefits of the same remedy in pertussis were mentioned. It seems both to mitigate the paroxysms and shorten the duration of the disease. Sulphurous acid fumigations were also tried in several cases of whooping-cough, and the results were quite gratifying. Some bad cases have done better on chloral hydrate, one grain every hour in syrup tolu, than on any other remedy.

The essayist alluded to the marked relief which she had seen to follow the local application of hydrochlorite of cocaine (4 : 100) to the cervix uteri for the vomiting of pregnancy, and to the benefits of full doses of acetanilide (15 to 20 grains) along with sodium salicylate in acute rheumatism.

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MASSACHUSETTS MEDICO-LEGAL SOCIETY.

W. H. TAYLOR, M.D., SECRETARY.

THE Twelfth Annual Meeting was held June 11, 1889, and was called to order at 11.15 A.M., by President PINKHAM. Twenty members were present. Records of the last meeting were read and approved.

Voted, on motion of MED. EXR. TOWER, that the assessment for the current year be three dollars.

DR. BENJAMIN E. COTTING, of Roxbury, was unaminously elected an associate member.

Voted, on motion of MED. EXR. DRAPER, that two members of this Society, one being the President, and the other to be appointed by him, be sent as delegates to the Section of Medical Jurisprudence of the American Medical Association, to be convened at Newport, on June twenty-fifth, next.

The President appointed Med. Exrs. Draper, Presbrey, Hartwell, Standing Committee for the ensuing year.

MED. EXR. DRAPER declined re-election, on the ground of his long service and many duties in other lines. It was voted to excuse Dr. Draper from service on this committee, and Dr. A. F. Holt was appointed a member.

A nominating committee, appointed by the President, and consisting of Med. Exrs. Munsell, Hartwell and Mead, reported the following list of nominations for officers, which was unaminously adopted:

President, Dr. J. G. Pinkham, of Lynn; *Vice President*, Dr. A. F. Holt, of Cambridge; *Corresponding Secretary*, Dr. B. H. Hartwell, of Ayer; *Treasurer*, Dr. C. C. Tower, of South Weymouth; *Recording Secretary*, Dr. W. H. Taylor, of New Bedford.

The President announced the death of Dr. Frederick Winsor, of Winchester, Medical Examiner, and former President of this Society.

DR. BENJAMIN E. COTTING read a paper entitled:

A MURDERER'S DYING CONFESSION DISPROVED BY SURGICAL AND ANATOMICAL FACTS.[1]

A girl was wounded in the head by some person who evidently intended murder. The squamous portion of the temporal bone was broken through, and the brain wounded to a depth of two inches. A large number of half-round clean cuts were seen on the scalp in the neighborhood of the fracture. The self-accused assailant stated that the wounds were inflicted by a hammer. Dr. Cotting held that this could not be the case, and that the only probable instrument was a carpenter's or a turner's gouge. The paper was a valuable and ingenious one, and was of great interest.

Discussion followed by DRS. ADAMS, WHITNEY, COTTING and others: some holding that the wounds might have been inflicted by a hammer.

DR. T. D. CROTHERS, of Hartford, Conn., read a paper on

SOME PROBLEMS OF THE MEDICO-LEGAL RELATIONS OF INEBRIETY, ILLUSTRATED BY THE CASE OF J. H. SWIFT, EXECUTED IN APRIL, 1889, FOR HOMICIDE.

Dr. Crothers held that inebriety is a brain disease, and should be ranked with insanity, as far as responsibility is concerned, in capital causes. Inebriates should be treated separately, as diseased persons. Dr. Crother's views on this subject are too well known to need further comment.

MED. EXR. F. A. HARRIS read a paper on

THE EVIDENCE IN CASES OF ARSENICAL POISONING.[2]

In a concise, clear and thorough way he gave the points necessary to prove the fact of arsenical poisoning, from the standpoint of the medical witness.

The Treasurer made his report, which was accepted.

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Recent Literature.

Annual Report of the Board of Health and of the City Physician of the City of Lowell for the year 1888.

This report is creditable to those from whom it emanates, and shows that the City of Lowell is fortunate in the possession of very intelligent and efficient sanitary officials. The various subjects presented are treated with clearness and decision, but without that dogmatism which repels the wavering, the sceptical and the recalcitrant in sanitary matters.

Lowell is a great manufacturing centre and, as a consequence, a large percentage of its population consists of mill operatives, many of these living in tenement-houses or tenement-blocks, and many of them French Canadians. Moreover, in some quarters the arrangements for water supplies and sewage are in a transition stage from those of a town to those of a city; that is to say, the water pipe and the well, the vault, and the sewer are coexistent. Given these facts, it is easy to anticipate the main problems with which the health officials of Lowell are called upon to deal. Among these are the inspection of tenements and schools, the control of contagious and diarrhœal diseases, the disposal of filth, the co-operative inspection of food and water.

Since October of 1888, diphtheria and scarlet fever have been placarded, the application of cards proving acceptable rather than annoying, as a rule. The character of the population is shown by the fact that the cards are printed in French as well as in English. Diphtheria was prevalent throughout the year; of two hundred and thirty-seven cases, seventy-eight died, a mortality of thirty-three per cent.

The cases were scattered throughout the city, not manifesting a preference for any particularly unhealthy locality, though the older and more thickly settled portions of the city suffered the most.

There was no small-pox during the year. The attention of manufacturing corporations was called by circular letter, to the necessity for compliance with the statute requiring them to vaccinate all their employees who had not been successfully vaccinated within five years, with the result of securing such compliance to a large extent.

We believe no money is spent in Lowell which yields larger returns than that devoted to the health department of the city government. This report emphasizes the great need of a city hospital, and wisely suggests as a beginning the construction of wards for the isolation of contagious disease. It would be well that the dangers of a too immediate proximity of such wards to the main buildings should not be forgotten.

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[1] See page 3 of the Journal.

[2] See page 225 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, SEPTEMBER 19, 1889.

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ETIOLOGY AND TREATMENT OF ACNE.

At the recent International Congress of Dermatology and Syphilography, Barthelemy, of Paris, made a contribution to the etiology and treatment of that common cutaneous disease, acne.

He emphasized the fact that the ingestion of altered or spoiled foods, and sometimes simple indigestion, may give rise to cutaneous eruptions as urticaria. Among these eruptions, *ab ingestis*, there are inflammations of the sebaceous follicles, and it is well known that in certain subjects we may produce acne at will by the administration of iodides and bromides.

Starting from this datum it is impossible not to be struck by the relations which connect the digestive functions with acneïc eruptions.

More precise notions are now possessed concerning these relations since Bouchard published his researches on the digestive troubles and on the auto-intoxications which are the consequence of dilatation of the stomach. Barthelemy has studied the subject of acne in connection with gastrectasis. Out of 169 cases of acne, in 165 the signs of dilatation of the stomach (clapotement, etc) were well marked. He remarks that the almost exclusive localization of acne on certain points seems to demonstrate that there is there an elective action of toxic substances, generated in the interior of the digestive tube. He adduces statistics to show that of all cutaneous diseases, acne is far the most frequent in gastrectasis. But if acne sometimes fails to appear, what is never wanting is seborrhœa, that fatty state of the skin which stains the clothing, retains the atmospheric dust, greases silk-paper, etc. We have here the direct effect of the digestive disturbance on the skin. Is the seborrhœa to be regarded as a simple hypersecretion in relation with poisonous ptomaines, or with a reflex vascular disorder? What seems to prove that we have here a simple hypersecretion is that this function commences only with puberty; that in certain women the seborrhœa almost completely gives place to the lacteal secretion, under the influence of lactation; — however this may be, we never have acne without previous seborrhœa. Dilatation of the stomach prepares the soil by enfeebling the organism, by lessening its resistance, and by producing seborrhœa.

Barthelemy insists that in acne we have an eruption which is auto-inoculable, like furuncle, impetigo, ecthyma, and like them, contagious. He has the proof of this in some observations which he has made, in which the conveyance of the disease by contagion was manifest.

Acne at its commencement is a papule, a true papule, flattened, depressed in the centre. It never becomes a pustule without the adjunction of divers microbes. In answer to the question, "What is the pathogenic element?" he says that he believes the *staphyloccus albus* to be the principle *par excellence* of these little cutaneous lesions.

If the pathogeny and history of the disease be such as has been indicated, the treatment is obvious: the dietetic regimen prescribed by Bouchard, and other modern authorities, for dilatation of the stomach, is clearly demanded. Gastro-intestinal antisepsis must be obtained by laxatives, by antiseptic powders of naphthol, prepared chalk, rhubarb, salicylate of bismuth, etc.

The general nutrition must be improved; concomitant affections, uterine, hepatic, etc. cured, and suitable tonics administered, to which cod liver oil will often prove an important adjunct. Remedies to prevent gastro-intestinal fermentations, as hydrochloric acid and pepsin, are often indicated, Sulphur baths and cold bathing as reconstituents have a certain utility.

But to gastro-intestinal antisepsis should be joined tegumentary antisepsis. The proper agents forfulfilling this end are the carbolic sprays, antiseptic soaps with sublimate, borax, naphthol, the application of ointments or epithems, such as the phenico-sulphuretted paste, salicylo-boric plaster with oxide of zinc, frictions with black soap, counselled by Laithe, — these, with camphoretted alcohol, are useful. In certain cases the external treatment becomes predominant; as when the acne-papules, like the lesions of scabies or smallpox, have been invaded by the pyogenic microbes, and the inflammation, bursting the barriers of the glandular tube, has spread to the surrounding cellular tissue; recourse then should be had to the red hot platinum wire, or to punctiform electric cauterizations. This method, when applied to the face, should be practised with extreme caution, so as not to leave scars. Abscesses should be treated on general antiseptic principles.

It will be seen from the above abstract that the French dermatologist has a hobby of his own with regard to the pathogeny and treatment of acne. It is not probable that other observers will see so necessary a connection between states of the stomach (and especially gastrectasia), and acneïform eruptions, particularly those of puberty. It will, at any rate, be worth the while for physicians, profiting by the experience of M. Barthelemy, to state their cases of acne, and in particular those that have proved rebellious to all the ordinary modes of treatment, from the stand-point which he has indicated; possibly they may now and then find digestive disturbances the *fons et origo mali.*

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THE APPROACHING MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

As will be seen by a notice in another column, the American Public Health Association is to hold its annual meeting at the Brooklyn Institute from October 22d to 25th. The topics named for consideration include such important ones as the Causes and Prevention of Infant Mortality; Railway and Steamship Sanitation; Methods of Scientific Cooking; the Prevention and Restriction of Yellow Fever; Tuberculosis and Diphtheria; Compulsory Vaccination; and "Sanitation of Asylums, Prisons, Jails and other Eleemosynary (*sic*) Institutions."

The Sanitary Exhibition in connection with the meeting is to be made a feature of great interest; and we are glad to observe is to be open to the general public October 22d, and to remain open till December 1st. The articles exhibited are divided into nine divisions, having reference respectively to the Dwelling, Schools and Education, Factories and Workshops, Clothing and Dress, Food, Sanitary Engineering, Public Health Administration in Cities and Towns, the Laboratory, and the Red Cross Section. In some of these divisions there are many classes. For example, under the Dwelling, we have — Dwellings; models and designs for sanitary dwellings. Treatment of the site: foundations, drainage, drainage tiles, etc. Materials for construction: bricks, tiles, floors, cements, etc. Heating: devices and appliances for furnaces, stoves, water and steam heating apparatus. Ventilation. Lighting. Domestic water supply: purification, filters, water fittings, etc. Plumbing: traps, sinks, water closets, baths, etc. Disposal of waste: domestic garbage destructors, garbage receptacles, etc. Sanitary furniture, refrigerators, wall paper (non-arsenical), floor coverings, etc.

Under the division of food, we have — Selected displays of unprepared animal and vegetable substances used as food or in the preparation of food. Prepared vegetable substances used as food, including canned and prepared, and preserved fruits and vegetables; prepared cereals, meals, flour, biscuits, bread, etc.; syrups, sugars, etc. Prepared animal substances used as food: canned, smoked, salted, preserved and prepared animal foods, including honey. The dairy: products of the dairy. Beverages of all kinds: alcoholic, non-alcoholic, tea, coffee, cocoa, chocolate, etc. New varieties of food: food for infants and invalids. Articles and devices used in the preparation of food: cooking-stoves, ranges, etc.; vessels for preserving food, etc. Adulterants and adulteration.

The expense of the exhibition is to be defrayed by an assessment upon each exhibitor; and at the close of the exhibition the Association will award its diploma to meritorious articles, on the recommendation of expert judges.

It is to be hoped that the attendance upon this meeting will be as great as the interest of the subject merits.

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CORRELATIVE PROGRESSION OF ALCOHOLIC LUNACY AND GENERAL PARALYTIC DEMENTIA.

At the recent International Congress of Mental Medicine, Garnier presented some statistics showing that the number of insane in Paris has increased the past few years in alarming proportions, the admissions to the asylums being thirty per cent. greater the last six years than during any similar previous term.

Mental alienation is more common in the male than in the female (males 55.61 %; females 44.38 %). More people become insane in the spring months than in any other season of the year; the maximum of frequency of the various forms of insanity may be said, however, to be in June.

The numerical increase of the last few years is, above all, due to the fact that there are two morbid types whose frequency is in very rapid progression: alcoholic lunacy and general paralysis. The essential psychoses, such as mania, melancholia, chronic delirium or progressive systematized psychosis, remain almost stationary, and are, in general, twice as common in the female as in the male. The progression of alcoholic insanity is so rapid that its frequency is twice as great to-day as it was fifteen years ago. To alcoholism is due, at the present day, almost one-third of the cases of mental alienation observed at the special infirmary.

The observations of the delirious forms of alcoholic insanity shows that the reactions which develop under its use are from day to day more violent, more dangerous to life, consequences which it is proper to attribute to the toxic character of the alcohols actually in use.

General paralysis, which is, with alcoholic insanity, the morbid form whose increase has gone on at the most rapid rate, figures for twelve per cent. in the totality of patients registered at the depot. In fifteen years its frequency has more than doubled.

Charts were shown at this meeting which made plain the simultaneous increase of alcoholic insanity and general paralysis, proving also that their progression is correlative. "In the solidarity of their invading march," said Dr. Garnier, "appears clearly demonstrated the etiological influence of alcoholism on the development of interstitial encephalitis."

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MEDICAL NOTES.

— Schultze points out that it is far better to use two fingers for vaginal examination, not only because the middle finger is longer than the index, but still more because with two sensitive surfaces, the relative position of which can be varied, we can find infinitely more than with one.

— Denver, Colorado, has just completed a $30,000 hospital.

— The first general meeting of the Continental Anglo-American Society will take place at the Grand Hôtel, Paris, on Monday, September 30th, at 5 P.M., and the first annual dinner will also take place at the Grand Hôtel at 8 P.M., on the same evening. The following gentlemen are honorary Presidents of the Society: Sir Spencer Wells, Sir Joseph Lister, Dr. Richard Quain, Professor Ball, Professor Brown-Séquard, Dr. Ricord, Dr. J. S. Billings, Dr. Fordyce Barker, and Dr. Weir Mitchell.

— Dr. Thomas King Chambers, the author of "Manual of Diet and Regimen in Health and Disease," has lately died in England. Life-long ill-health (due to the recurrence of aneurism, first of the left popliteal artery, then of the right, and finally of both carotids, accompanied by heart disease,) prevented his taking the part in active medical practice which his ability and energy entitled him to.

— The Southern Surgical and Gynecological Association will meet in Nashville, Tenn., November 12th, 13th and 14th, 1889. A preliminary programme has been issued announcing thirty-five titles. Hunter McGuire, M.D., LL.D., Richmond, Va., *President;* W. E. B. Davis, M.D., Birmingham, Ala., *Secretary.* Members of the Medical Profesion are cordially invited to attend.

— At the last meeting of the Faculty of the Medico-Chirurgical College, Dr. Ernest Laplace, of Philadelphia was appointed Professor of Pathology. Professor Laplace is a native of New Orleans, and a graduate of the Literary Department of the Georgetown University, D. C. After several years' study in Tulane University and the Charity Hospital he went abroad and graduated in the "Faculté de Medicine de Paris," where he studied under Pasteur and Cornil. Dr. Samuel Wolfe, of Skippack, Pa., will fill the chair of Physiology for the coming year.

— Dr. James Crichton Browne's address before the Psychological Section of the British Medical Associaation was upon the "Hygienic Uses of the Imagination." He dwelt upon the uses of fiction in soothing the mind and giving it a proper mental balance. Contrary to the usual belief that the imagination is most active among the insane, he said that, as a rule, the lunatic is as dull as a stone. "He is the victim of a fixed idea, or his delusions occur in groups so unvarying that having ascertained one of them you can predict the rest." As "idiocy is the absolute negation of imagination, and insanity undermines and destroys it more or less," it is important that the imagination should be evoked.

— The recent death by suicidal hanging, in Illinois, of Dr. David Tilton Brown, formerly superintendent of the Bloomingdale Asylum, N. Y., is reported to have been caused by the chagrin due to the publication by a reporter of a New York daily paper of the fact of Dr. Brown's identity with the former well-known alienist. Through overwork and a close application to that special branch of mental study, his own mind became affected and signs of insanity appeared. It was at the time supposed by many persons that Dr. Brown had died; but he had really been taken away to a quiet place, and was undergoing treatment when the reporter discovered the fact and forced his way into the presence of the retired physician, after which, says a writer in the *Boston Advertiser*, he wrote a highly sensational report of his proceeding. Much criticism was made at the time of the publication of this report, and much fear was expressed concerning the effect which the publication would have upon Dr. Brown. The fear was justified. He was so mortified and distressed concerning the event that he has just ended his life with his own hand.

— Yellow fever is reported as raging at Vigo, in the province of Pontevedra, Spain. Two cases of cholera, one of which has terminated fatally, are also reported to have occurred in Hungary near the Austrian frontier. Cholera appeared in Mesopotamia, as shown by the following dispatch published in the Marine Hospital Service *Bulletin* under date September 13.

"Cholera, since July 27th, made its entry into Mesopotamia in as mysterious a manner as it made its appearance into Egypt in 1883. It is certain that it penetrated from Bombay via Bassora; it could not as yet be determined how. Perhaps, as in Egypt, through Arabian stokers (firemen), who are employed on the English steamers of the Bassora-Bombay Line, and who, upon their arrival at Bassora, go to their homes. At first cholera appeared at Schatra (3.000 inhabitants), two and a half days' journey from Bassora, at the Schatel-Hay Canal, which connects the Tigris with the Euphrates River. In a few days from July 27th to August 6th, 308 persons died. On the 1st of August it appeared at Naszrie (8,000 inhabitants), southerly from Shatra near the embouchure of the Schatel-Hay into the Euphrates — a city which was founded in 1872 by Natir Pasha, the Montefik sheik. From the 1st to the 9th of August, 293 deaths occurred — on the 8th of August, so many as 85. The houses are situated upon the flat marsh land, and are only reed huts. The inhabitants carry on the culture of rice and some cattle raising. It finally made its appearance at Bassora on August 6th, and at first an Arabian girl died who had come there ten days before from Filie in Persia. On August 9th, 15 deaths occurred there. The reports of Gazala, the sanitary physician, do not allow any doubt to arise as to the diagnosis."

BOSTON AND NEW ENGLAND.

— The Quarterly Meeting of the Rhode Island Medical Society was held at Providence, September 12, about 80 members attending.

— The will of Mrs. Ellen M. Gifford, of New Haven, who died recently, after giving legacies of about $150,000 to her own and her husband's relatives, and $50,000 to various friends, leaves the rest of her property to charitable objects. The New Haven

Hospital gets $50,000, with power to the executors to increase it to $90,000; the New Haven Dispensary, $5,000; the New York Society for the Prevention of Cruelty to Animals, $50,000; the Massachusetts Society of the same name, $25,000, and $30,000 for the support of a home for stray and suffering animals at Boston; the New York Society for the Relief of the Ruptured and Crippled, $25,000; the Connecticut Prison Association, $5,000; the New Haven Society for the Prevention of Cruelty to Animals, $5,000; the Massachusetts General Hospital, $10,000; the McLean Insane Asylum, $5,000; the Boston Port and Seaman's Aid Society, $5,000; the Massachusetts Society for Aiding Discharged Convicts, $5,000; for aiding poor, sick, and incurables, $20,000; the New York Society for the Prevention of Cruelty to Children, $5,000; the New York Society for the Relief of the Destitute Blind, $5,000; the New York Colored Home and Hospital, $5,000; the Washington Society for the Prevention of Cruelty to Animals, $5,000; the New Hampshire Society for the same object, $5,000, and the Massachusetts Society for the Prevention of Cruelty to Children, $5,000.

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Miscellany.

NEW YORK PHYSICIANS MUST BE ABLE TO READ AND WRITE.

A recent law passed by the New York State Legislature adds to the advancement of the preliminary training of the medical students. It reads: "Before the Regents of the University of the State of New York, or the Trustees of any Medical School or College within this State, shall confer the degree of Doctor of Medicine upon any person who has not received a Baccalaureate Degree, in course from a College or University duly authorized to confer the same, they shall require him to file with the Secretary or recording officer of their University or College, a certificate showing that prior to entering upon the prescribed three years' study of medicine he passed an examination conducted under the authority and in accordance with the rules of the Regents of the University of the State of New York, in arithmetic, grammar, geography, orthography, American history, English composition, and the elements of natural philosophy, and such certificate shall be signed by the Secretary of the Regents, and countersigned by the Principal or Commissioner conducting the examination."

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MILK EPIDEMICS.

Now that so much public attention has been drawn to the dependence of epidemic diseases upon milk supplies, it is not surprising, and, indeed, it is satisfactory to find that close watch is kept upon all such possibilities by those engaged in public health administration. There have been recently two important inquiries in England, says the *Medical Press and Circular*, into milk infection, by Dr. Page and Dr. Parsons respectively. In the former case, scarlet fever and enteric fever were ascribed at Spennymoor, in Durham, to milk, and although there was much *primâ facie* suspicion, Dr. Page concluded finally that it was an instance of coincidence merely. Thus, the scarlet fever was practically endemic, and depended on matter-of-fact methods of spread, whilst the enteric fever, though slightly prevalent at the farm whence the milk came, was not judged to be directly dependent on this, but to be due to other unwholesome conditions. In Dr. Parsons's most interesting inquiry into scarlet fever "with associated diphtheria and sore throat" at Macclesfield, where some very interesting clinical features were brought out, there was no question as to the causation by a certain milk supply of the complex affection observed. Elimination of other sources of infection narrowed the question down to the milk of a newly-calved cow, which had come into the supply just before the major outbreak of the epidemic. That this had to do with it there was no question; but here investigation of the problem came to a standstill, for no disease of udders or coats could be definitely made out. The case, however, closely resembles those of Power's well-known inquiries at Hendon and elsewhere; and our contemporary thinks that probably Dr. Parsons is correct in his conjecture as to the influence of the puerperal condition of the cow in developing the potentiality of human infection.

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CONVENTIONAL MOURNING OR HEALTH?

The *New York Medical Journal* asks this pertinent and important question and then discourses the subject.

"Which shall it be? The time has come to choose. Unmitigated mourning must go. A movement has been started in England to put an end, if possible, to the present irrational mourning costumes that exact of women great personal inconvenience, physical injury, and disastrous expense. The conventional costume of a well-bred widow, for instance, possesses every known quality of unhygienic, non-æsthetic, and costly dress. Proper exercise while she is wearing it is out of the question. Seclusion is secured in ways less barbarous perhaps than inducing deformity of the feet, yet our occidental mourning customs effectually keep women within doors. The heart of the stoutest warrior might quail within him if a quiet stroll required the wearing of two crape veils, each six feet long originally and only slightly shortened, but not lessened in weight, by a hem half a yard deep — one veil to be worn over the face and the other to hang down the back! The widow's gown must be inconveniently long, the outside garment must cling, and both must be made of inelastic, non-inspiring material. Add to this that within, which passeth show, and the picture is pretty black. The husband who loses his wife escapes such outward trappings, not being forced to adopt any special habiliments that can incommode or injure him. A simple band around the hat announces the fact of his changed circumstances and secures freedom from idle questions. Strange inconsistency of custom that thus discriminates between men and women, and always to the disadvantage of women in point of health!

"In this new crusade of common sense Lady Harberton takes the lead, setting forth in a recent article the reasons why existing mourning costumes should be abandoned by all sensible women. The materials now in use are in themselves injurious, the dyes being often of a poisonous nature and frequently injuring the skin and ruining the complexion. What woman who indulges in conventional mourning escapes the staining process resulting from damp crape? Only the victim can know the energy and perseverance required to remove from brow and neck the literal clouds that gather from such a cause. The harm to the exterior of the body is easily perceived. Not less injurious is the irritation to the respiratory tract caused by minute loose particles of poisonous crape. To the pang of separation is added the thought that our loved ones are condemned to suffer physical discomfort for a year or two, and, possibly, disease for an indefinite period. . . .

"The moral influence of mourning is even more to be deplored than its physical effects. Gloomy garments, darkened rooms, all the subdued life of the house of mourning, depress the powers, lower vitality, and absorb an undue quantity of domestic ozone. Such unwise fashions tend to stultify the wonderfully recuperative powers of time and nature. Hugging grief to keep it warm is a poor business, and so is the worship of sorrow. Speed the day when it shall be considered unbecoming to wipe our eyes upon the public, or to dust our neighbors' shelves with any personal woe! All that Diogenes asked of Alexander was that the king should stand out of his sunshine. And we all have a right to demand of society that it take its mourning out of humanity's sunshine."

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NOTE ON INTRA-THORACIC GROWTHS DEVELOPING FROM THE THYROID GLAND.

Dr. William Osler, of the Johns Hopkins University, writes in the *Medical News* of September 7th, regarding the development of intra-thoracic growths from the thyroid glands. It has been shown, he says, that portions of thyroidal tissues may be met with anywhere from the base of the tongue to the heart, and in regions lying between these points the so-called struma tumors may be found, or even in rare instances within the trachæ. Thyroidal growths also occur within the thorax most commonly sub-sternal in position, and connected directly with the gland. Of these a number have been described (Virchow, *Geschwülste*, bd. 3). More rare tumors develop from the deeper portions or aberrant bits of a lateral lobe and extend into the chest, forming large intra-thoracic growths.

A most remarkable case is quoted from Dettrich (*Prager med. Wochenschrift*, No. 31, 1887). In a woman aged sixty, who had suffered for some time with cough and hæmoptysis, there was found, filling the greater part of the right side, a cystic tumor the size of a man's head. It was covered by the parietal pleura and naturally caused great compression of the lung. Above it was connected with the right lateral lobe of the thyroid. The cyst had yellowish brown contents, and contained cholesterin. Kretschy (*Wiener med. Wochenschrift*, 1877) describes a sarcoma of the thyroid, four and three-quarters inches in length, which formed an extensive mediastinal tumor passing to the level of the ninth dorsal vertebræ.

In the following case, No. 702, Post-mortem Records, Montreal General Hospital, there was a tumor similar in situation to Dettrich's, though not so large. The patient, a woman had died with symptoms of purulent bronchitis. There was no special emaciation. Occupying the top of the left thoracic cavity, outside the pleura, was a mass the size of a large orange, closely attached to the œsophagus. The arch of the aorta lay on the right side, the left subclavian passed directly over it, and the left carotid passed just beside it. There was no special connection with any thoracic organ, though filling completely the top of the left thorax. There was a large bronchocele, the left lobe of which was in contact with the tumor and could not be isolated from it.

On section, it consisted of a series of imperfectly separated cysts containing a yellow brown fluid in which were plates of cholesterin. The upper part of the tumor was firm and hard; some of the septa had calcified, others had a fibro-cartilaginous consistence.

The relations of this mass, its anatomical character, and the nature of the contents of the cysts, identical with that which is found in so many cases of old bronchocele, left no question that it had developed from an outlying lobule of the left thyroid.

In connection with the case of Kretschy, above referred to, Dr. Osler refers to a similar instance reported by him a few years ago (*Montreal General Hospital Reports*, Vol. I, 1880):

A girl, aged sixteen, had been under treatment for what appeared to be ordinary bronchocele. It had grown with great rapidity. There was marked difficulty in breathing, and the question of tracheotomy was considered, but as the dyspnœa became easier the operation was deferred. Death occurred suddenly. Post-mortem, a tumor was found which involved exclusively the left lobe of the thyroid, and formed a large round mass eight inches in circumference; above it extended to the level of the thyro-hyoid ligament, while below it passed down beside the trachea to the bifurcation. From behind, the mass had an elongated somewhat oval shape; the lower end rested upon the left bronchus. Along this surface it measured one and three-quarters inch in length. At the upper right angle of the mass in front was a small thin remnant of the left lobe capping the tumor, the tissues of the two blending, not separated by a capsule. The right lobe of the thyroid was of normal size and appearance. Histologically the growth consisted of small lymphoid corpuscles.

This case was reported as one of lympo-sarcoma of the deep cervical glands involving the thyroid, and simulating goitre, but the author now has no doubt that it was a case similar to Kretschy's, in which the growth developed from a thyroidal lobe with extensions down the trachea.

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Correspondence.

QUACK MEDICINE IN GERMANY.

Boston, June 17, 1889.

Mr. Editor, — To those who regard with admiration the "paternal" governments of Europe, I beg leave to present the following extract from a recently issued work:

Referring to the political methods of Bismarck, we read that, "In the Fatherland the Government charges itself with watchful solicitude for the morals of its subjects. But as even Homer sometimes nods, so the most vigilant of Administrations sometimes fails to discover that the columns of German newspapers are defiled by the insertion of advertisements of immoral pills or by the addresses of unclean doctors. Where, however, any newspaper continuously opposes itself to the will of the authorities, the custodian of public morals puts on his spectacles, and woe betide the unfortunate journal, if, in the obscurest corner of his badly-printed page, there should be discovered lurking an allusion to the objectionable pill or the disreputable physician. The Administration is down upon him at once, and punishment is heaped on punishment until the editor consents to dance to the piping of Power. Then the custodian of public morals once more slumbers and sleeps, and the quack advertises his pills in peace."

Although the above is written especially in reference to the methods of government as forming and guiding public opinion on matters of world-wide importance, as well as on the action of private individuals in relation to those in power, the philosopher in medicine may see wherein the health and morals of the single citizen, and consequent welfare of the state, are involved. Very respectfully,

F. B. Stephenson, M. D.
Surgeon U. S. N., A. A. S.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 7, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	709	338	24.50	15.82	14.84	2.10	3.50
Philadelphia (Aug. 31st)	1,010,245	401	157	17.76	11.76	6.96	5.04	2.40
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	157	68	20.48	11.52	14.08	4.48	—
St. Louis	450,000	138	55	15.33	8.03	8.03	2.92	2.92
Boston	413,567	227	96	23.32	14.96	14.96	2.64	5.28
New Orleans	250,000	113	34	22.25	8.90	7.12	.89	3.56
Cincinnati	225,000	—	—	—	—	—	—	—
Washington	225,000	94	38	22.26	11.66	11.66	4.24	5.30
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	36	13	38.92	11.11	30.58	5.56	—
Charleston	60,145	34	17	5.88	11.76	2.94	—	—
Portland	40,000	20	7	30.00	25.00	30.00	—	—
Worcester	78,292	33	17	39.39	12.12	27.27	3.03	3.03
Lowell	71,518	51	31	49.00	13.72	35.28	1.96	9.80
Cambridge	65,552	21	11	28.56	14.28	14.28	—	4.76
Fall River	62,647	41	23	48.80	7.32	39.04	2.44	2.44
Lynn	53,334	15	—	26.66	6.66	20.00	—	6.66
Springfield	40,731	17	4	35.24	5.88	5.88	5.88	11.76
Lawrence	40,619	27	14	18.50	3.70	—	11.10	3.70
New Bedford	37,253	16	8	37.50	6.25	37.50	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	16	6	25.00	6.25	6.25	6.25	6.25
Brockton	28,813	6	2	33.33	—	33.33	—	—
Chelsea	28,167	5	1	40.00	20.00	40.00	—	—
Haverhill	26,058	9	—	—	—	—	—	—
Taunton	25,170	12	1	25.00	25.00	8.33	16.66	—
Gloucester	24,263	7	6	71.40	—	71.40	—	—
Newton	21,553	2	1	—	—	—	—	—
Malden	19,774	13	8	61.52	15.38	61.52	—	—
Fitchburg	17,534	9	3	22.22	11.11	22.22	—	—
Waltham	17,332	10	3	10 00	30.00	—	—	10.00
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	6	2	16.66	—	16 66	—	—
Quincy	13,728	6	3	66.66	—	16.66	16.66	16.66

Deaths reported 2,260: under five years of age 967; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 511, consumption 291, acute lung diseases 138, diarrhœal diseases 314, diphtheria and croup 74, typhoid fever 72, whooping-cough 27, scarlet fever 8, cerebro-spinal meningitis 8, measles 4, erysipelas 4. From whooping-cough, New York 15, Philadelphia 5, Cambridge 2, St. Louis, New Orleans, Worcester, Fall River and Springfield 1 each. From scarlet fever, New York and Philadelphia 3 each, Baltimore and Lawrence 1 each. From cerebro-spinal meningitis, New York 2, Philadelphia, Boston, Washington, Worcester, Springfield and Quincy 1 each. From measles, New York 2, Lowell and Salem 1 each. From erysipelas, New York 3, St. Louis 1. From malarial fever, New Orleans 11, Philadelphia 5, New York 4, Baltimore and Fall River 2 each, Nashville 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406 for the week ending August 10th, the death rate was 18.8. Deaths reported 3437: Infants under one year 1259. Acute diseases of the respiratory organs (London) 149, diarrhœa 548, whooping-cough 60, measles 58, scarlet fever 52, diphtheria 38, fever 29. The death rates ranged from 13.9 in Oldham to 34.6 in Preston, Birmingham 18.7, Bradford 19.5, Hull 21.6, Leeds 20.3, Leicester 20.5, Liverpool 19.2 London 16.4, Manchester 24.5, Newcastle-On-Tyne 30.8, Nottingham 18.0, Sheffield 23.9, Sunderland 28.4.

In Edinburgh 15.1, Glasgow 21.0, Dublin 24.8.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555.406, for the week ending August 24th, the death-rate was 17.2. Deaths reported 3,151: infants under one year of age 1,085; acute diseases of the respiratory organs (London) 115, diarrhœa 394, whooping-cough 60, scarlet fever 50, diphtheria 49, measles 41, fever 41, small-pox (Leeds) 1.

The death-rates ranged from 11.1 in Brighton to 34.0 in Plymouth: Birmingham 15.9, Bradford 12.4, Hull 23.6. Leeds 15.8, Leicester 18.0, Liverpool 19.0, London 14.9, Manchester 24.4, Norwich 14.9, Nottingham 15.4, Sheffield 21.5.

In Edinburgh 14.7, Glasgow 20.9, Dublin 25.1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending August 31st, the death-rate was 169: deaths reported 3,091: infants under one year of age 929; acute diseases of the respiratory organs (London) 148, diarrhœa 296, whooping-cough 60, diphtheria 52, scarlet fever 51, measles 48, fever 36.

The death-rates ranged from 9.0 in Derby to 29.7 in Wolverhampton: Birkenhead 20 9, Bradford 20.4. Bristol 16.4, Hull 21.3, Leeds 17.8, Leicester 9.7, Liverpool 19.7, London 15.1, Manchester 23.4.

In Edinburgh 16.2, Glasgow 19.3, Dublin 26.6.

The meteorological record for the week ending Sept. 7, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Sept. 7, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 1	30.34	66.0	70.0	61.0	77	89		N.	E.	8	5	C.	C.		.0
Monday,.. 2	30.26	66.0	75.0	56.0	91	80		S.W.	S.W.	2	8	G.	C.		.0
Tuesday,.. 3	30.15	71.0	82.0	60.0	82	84		S.W.	S.W.	5	8	C.	C.		.0
Wednes... 4	30.17	72 0	83.0	60.0	85	90		S.W.	S.W.	6	12	C.	C.		.0
Thursday,. 5	30.16	70.0	79.0	61.0	85	91		0	S.	0	10	C.	O.	0.25	.1
Friday,.... 6	30.12	77.0	83.0	71.0	86	86		S.	S.	9	8	O.	F.		.0
Saturday,. 7	30.20	68.0	71.0	64.9	100	90		S.	E.	5	8	G.	O.		.0
Mean for Week.															

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 7, 1889, TO SEPTEMBER 13, 1889.

With the approval of the Secretary of War, the leave of absence granted Major **JOHN H. JANEWAY**, surgeon, in S. O. 52, July 29, 1889, Division of the Pacific, is extended two months. Par. 1, S. O. 206, A. G. O., September 5, 1889.

By direction of the acting Secretary of War, the leave of absence on surgeon's certificate of disability granted First Lieutenant **FREEMAN H. WALKER**, assistant surgeon in S. O. 92, April 20, 1889, from this office, is extended one month on surgeon's certificate of disability. S. O. 211, A. G. O., September 11, 1889.

SOCIETY NOTICE.

AMERICAN PUBLIC HEALTH ASSOCIATION. — The Seventeenth Annual Meeting will be held in the Hall of the Brooklyn Institute, Washington and Concord Streets, Brooklyn, October 22, 23, 24 and 25, 1889. Addresses of welcome will be delivered by Hon. Alfred C. Chapin, Mayor, on behalf of the city, and by Alexander Hutchins, M.D , on behalf of the medical profession

The following topics have been selected for consideration at the meeting: (1) The Causes and Prevention of Infant Mortality. (2) Railway Sanitation. (*a*) Heating and ventilation of railway passenger coaches; (*b*) water-supply, water-closets, etc.; (*c*) carrying passengers infected with communicable diseases. (3) Steamship Sanitation. (4) Methods of Scientific Cooking. (5) Yellow Fever. (*a*) The unprotected avenues through which yellow fever is liable to be brought into the United States; (*b*) The sanitary requirements necessary to render town or city proof against an epidemic of yellow fever. (*c*) The course to be taken by local health authorities upon the outbreak of yellow fever. (6) The Prevention and Restriction or Tuberculosis in Man. (7) Methods of Prevention of Diphtheria, with Results of such Methods. (8) How far should Health Authorities be permitted to apply known Preventive Measures for the Control of Diphtheria (9) Compulsory Vaccination. (10) Sanitation of Asylums, Prisons, Jails and other Eleemosynary Institutions.

Exhibition of sanitary goods and appliances in another large hall close by.

J. H. RAYMOND, M.D.,
Chairman Executive Committee.

OBITUARY. ADDINELL HEWSON, M D.

Dr. Addinell Hewson, a distinguished physician and author, died at his residence in Philadelphia, 1134 Spruce Street, September 11th, in his sixty-first year. He was a graduate of Jefferson College in 1850, and subsequently pursued his studies in Paris and Dublin He was at one time resident physician at the Pennsylvania Hospital, and visiting surgeon at the Episcopal, Willis Ophthalmic, and Pennsylvania Hospitals. He was the author of numerous works on surgery.

OBITUARY. THOMAS L. REED., M.D.

Dr. Thomas L. Reed, formerly a prominent physician of Philadelphia, died suddenly from angina pectoris at Cape May, September 11th. He has been subject to acute attacks of the ailment which proved fatal, and his death was brought on by over-exertion. Dr. Reed was born in 1822, and was a self-made man. When twelve years of age he entered the employ of a large grocery store, and at odd hours spent his time in educating himself. He subsequently taught school for several years, saved enough money to study medicine, and graduated from the Jefferson Medical College in 1846. When he retired, in 1871, he had a large practice, and was ranked among the foremost of Philadelphia's physicians.

BOOKS AND PAMPHLETS RECEIVED.

Notes on the Electro-Magnet in Ophthalmology, with a Report of Nine Cases. By Wm. Ellery Briggs, M.D. Reprint. 1889.

Sixth Annual Announcement of the Medical and Dental Department of the National University. Washington, D. C. 1889-1890.

The Treatment of Fractures of the Neck of the Femur by Immediate Reduction and Permanent Fixation. By N. Senn, M.D., Ph.D., etc. Reprint. 1889.

Index Catalogue of the Library of the Surgeon-general's office, United States Army. Authors and subjects. Vol. X, O-Pfutsch. Washington: Government Printing Office. 1889.

On Disordered Digestion and Dyspepsia. By Frank Woodbury, A.M., M.D., Fellow of the College of Physicians of Philadelphia, etc. Detroit, Mich.: George S. Davis. 1889.

Transactions of the American Surgical Association, Vol. VII. Edited by J. Ewing Mears, M.D. Philadelphia: Printed for the Association and for sale by P. Blakiston, Son & Co. 1889.

A Manual of Chemistry for the use of medical students. By Brandreth Symonds, A.M., M.D., assistant physician to Roosevelt Hospital, etc. Philadelphia: P. Blakiston, Son & Co. 1889.

A Laboratory Guide in Urinalysis and Toxicology. By R. A. Witham, A.M , M.D., Professor of Chemistry and Physics in the Medical Department of the University of City of New York, etc. Second edition. New York: William Wood & Co.

Text-Book of General Therapeutics. By W. Hale White. M.D., F.R C.P., Senior Assistant Physician to and Lecturer on Materia-Medica and Therapeutics at Guy's Hospital. With illustrations. London and New York: Macmillan & Co. 1889.

Prolapse of the Womb. With especial reference to the (so-called) Hypertrophic Elongation of the Supra-Vaginal Portion of the Cervix. with Report of a Case. By Lewis H. Adler, Jr., M D , late Resident Physician University Hospital, Philadelphia. Reprint. 1889.

Spinal Caries: Operative Treatment. Laminectomy or so-called Trephining of Spine. By De Forest Willard, M.D., Ph.D., Clinical Professor of Orthopedic Surgery in the University of Pennsylvania, surgeon to Presbyterian Hospital, etc. Reprint. Philadelphia, 1889.

Lectures on Obstetric Nursing. Delivered at the Training School for Nurses of the Philadelphia Hospital. By Theophilus Parvin, M.D., Professor of Obstetrics and Diseases of Women and Children at Jefferson Medical College, Obstetrician to the Philadelphia Hospital. Philadelphia: P. Blakiston, Son & Co. 1889.

A Text-Book of Human Physiology, including Histology and Microscopical Anatomy, with special reference to the requirements of Practical Medicine. By Dr. L. Landois, Professor of Physiology and Director of the Physiological Institute, University of Greifswald. Third American, translated from the sixth German edition, with additions by Wm. Stirling, M D , Sc. D., Brackenburg, Professor of Physiology and Histology in the Owens College, and Professor in the Victoria University, Manchester. With 692 illustrations. Philadelphia: P. Blakiston, Son & Co. 1889.

Addresses.

PRESIDENT'S ADDRESS. AMERICAN DERMATOLOGICAL ASSOCIATION.[1]

BY J. E. GRAHAM, M.D., TORONTO.

GENTLEMEN, — It is a subject for congratulation that the Thirteenth Annual Meeting of this Association should be held in Boston. The science of dermatology has been cultivated here in a pre-eminent degree. The years 1868, 1869, and 1870, mark an era in the history of the specialty on this continent. During those years a general interest in the subject seems to have sprung up in many of our larger cities, and it will be seen from the following facts that Boston was at that time one of the principal centres of activity: —

"In 1868 the Boston City Hospital opened an outdoor department in charge of Dr. Howard F. Damon, where, during the first decade, twelve thousand patients were treated. The Massachusetts General Hospital likewise inaugurated an out-patient department for skin diseases in 1869, Dr. J. C. White receiving the appointment. Here, during the first ten years, between nine and ten thousand cases were recorded."

Harvard University was among the first to institute a chair in dermatology.

Dr. Duhring, in his address delivered at the third annual meeting of this Association, makes the following reference to the earliest dermatological literature published on this continent:[2]

"According to Thacher the first medical publication of any kind in New England, and we may safely assert on this continent, was a brochure, entitled 'A Brief Guide in the Small Pox and Measles,' the author being Thomas Thacher, a noted divine as well as a learned physician of Boston, published in 1677. Other small works, as those of Colman, Boylston, and Williams, all of Boston, shortly followed."

To our first president and to his colleagues here, we, as an Association, owe much of our success in the past. It is therefore to be hoped that as we are gathered together in a city, which in some respects may not inappropriately be called the birthplace of dermatology on this continent, our meeting may be noted for zeal and unanimity of action in scientific work.

In an address such as this it is a difficult matter to select a subject that has not already been dwelt upon, and which would at the same time be of general interest. In reading over the proceedings of this Association for the past twelve years, I was struck by the enormous amount of work done by many of the members, as evidenced by the papers read. Several of the departments in the dermatological field appear to have been subjected to the keenest observation and criticism. The subject which perhaps of all others has been the least adverted to is the Prevention of Skin Diseases. Doubtless one of the reasons for this is that in these days we have our State, Provincial and National Associations, whose duty it is to investigate the causes of disease and to suggest the best means for their prevention. The Sanitary Association, however, look to the medical profession for their principal support, and it is to the honor of the profession that this support has always been given in the most generous and self-sacrificing way.

I am led by these considerations to make a few remarks upon the prevention of some forms of skin diseases, and especially that form of prevention which necessitates the enactment of sanitary laws. Passing over the exanthemata, the prevention of which has already been dealt with by our sanitary legislators, two diseases will be adverted to, which, although not dangerous to life, are disagreeable enough, and the cure of one of them sufficiently difficult to make the study of their prophylaxis a matter of importance, namely, scabies and tinea tonsurans.

Dr. J. C. White, in a paper upon the treatment of the former disease, written on account of its then great prevalence in this city, made the following remarks: "As to the general control of this affection in its well-nigh epidemic state of prevalence, it is only by drawing the attention of the profession to this activity, and to the best methods of destroying it in individual cases, that we may hope to accomplish anything."

In case of such state of prevalence would not the course of the epidemic be shortened if, instead of waiting for patients to apply for treatment, the children in the public schools and the workers in factories were inspected by competent physicians, and if necessary at once placed under treatment? In fact, I have learned that such regulations were enforced in one of our provincial towns with very successful results.

The spread of tinea tonsurans, particularly in orphan asylums, is a subject which should receive more attention than is at present given to it. This is a disease which in any case is difficult to cure, but is much more obstinate when it breaks out in a public institution. One who has had experience of the expense, labor and general worry connected with its management under such unfavorable circumstances, will appreciate the importance of the establishment of stringent regulations whereby all boys and girls admitted into orphan asylums should be carefully examined and reported upon by a competent physician before they are allowed to become inmates. Instances have no doubt occurred within the knowledge of many of us where the disease has existed for years in such homes, causing great expense and trouble, when the whole might have been prevented if proper regulations had been enforced.

I shall now refer to two diseases to a greater or less extent preventable, which in importance far surpass those already alluded to, namely, syphilis and leprosy.

When we consider that syphilis is so widely spread on this continent that its *innocent* victims may be numbered by thousands, it might at first appear surprising that so far few attempts have been made to eradicate it or even to check its progress. This history of prevention, as it has been tried in different countries, reveals the great difficulties which stand in the way and makes us hesitate before recommending any particular course. The history of success and failure of such laws in Denmark, for instance, will illustrate this point. The question has been one to which the various governments of that country have for centuries given a great amount of attention. The success of their more recent legislation, although in many ways encouraging, has not been such as was at first expected. Notwithstanding the fact that laws of this character have been for some years in force in Paris, the victims of syphilis are still very numerous, as shown by hospital statistics. These incomplete results arise largely from imperfect registration and as a consequence clandestine prostitution.

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[1] Delivered at the Thirteenth Annual Meeting, Boston, September 17, 1889.

[2] Transactions of the American Dermatological Association, 1879.

In England the Contagious Disease Acts, although not repealed, were divested of any power for good by a resolution passed by the House of Commons in 1883. The Acts were supported by the most eminent members of the profession, and if they had been continued and extended would have doubtless have done good service in the prevention of syphilis. In the report of a Royal Commission, appointed in 1870 to look into their working, the following statement appears:

"The Acts have purged the towns and encampments to which they have been applied of miserable creatures who were masses of rottenness and vehicles of 'disease.'

"We are satisfied from the evidence that the frequent examination of women is the most efficacious means of controlling the diseases."

Notwithstanding this and other strong evidence in favor of the Acts, they were practically repealed on account of persistent opposition from an influential class of the community.

From the history of sanitary legislation in this matter, the inference may fairly be drawn that if a thorough registration and periodical examination of prostitutes were made the ravages of syphilis would thereby be much diminished. It appears to be extremely difficult to effect such thorough registration, and like other laws of the kind unless well administered they had better not be placed in the Statute Book. It is unwise to advocate any legal measures and hope for their success if a large and important section of the community, from conservative motives, directly and vehemently oppose them. This opposition may to our minds seem unreasonable, but the fact of its existence is sufficient to make one hesitate in such a line of action. The great difficulties which surround this subject ought not to deter earnest and thoughtful men from attempting to grapple with them. The importance of the question is such as to demand the greatest intelligence for its solution.

There are, however, some methods of prevention about which there can be little or no difference of opinion, and which members of this Association have done much to further. All will agree that the early diagnosis and successful treatment of syphilis, both in males and females, will have a positive effect in checking the spread of the disease. To this end it is necessary that our medical students should, during their course, devote to it a careful and systematic study. Even in our larger medical colleges, where ample opportunities are given for this course of instruction, it is to be feared that a great number of students do not sufficiently appreciate the importance of the subject to take advantage of such opportunities. Many expect to practice in country districts, and make a great mistake when they think they will not meet with this affection in out-of-the-way places. Some of the worst cases of contagion are reported from small towns, and no doubt all of us have seen cases of unrecognized syphilis sent from country districts. Judging from the announcements of our smaller medical colleges we are afraid that in some of them little attention is paid to this subject.

Next in importance to the early diagnosis of the disease is the provision of free and abundant facilities for its successful treatment in hospitals. This is a work in which all classes of the community may unite, namely, in the healing of those diseased. It would seem advisable to set apart wards in general hospitals for this class of patients rather than that separate institutions should be established. These wards might be placed under the control of physicians who pay special attention to this department of medicine. Every barrier ought to be removed which would in any way prevent those diseased from applying for treatment, so that patients would find it to their advantage early to enter the hospital. They should be treated there with the same consideration as others, so as to remove that fear of control which deters many from applying for relief.

I am well aware that in many cities of this continent these or similar measures have been adopted, but there are still large communities in which little attention has been paid to the subject. How often do we hear it stated that public money should not be used in assisting this class. Such people forget that in allowing persons to remain diseased a still greater danger threatens the community at large. We are satisfied that in the democratic state of society which exists in all parts of North America more can be accomplished upon this than upon any other line yet proposed.

The careful examination of wet-nurses by competent physicians is an important point too often neglected. A bureau for the registration of nurses, such as exists in Moscow, would be found of service in our large cities. In that institution, according to a report made a few years ago, seventeen per cent. of the applicants for registration exhibited suspicious signs, while an additional four per cent. were undoubtedly affected by syphilis. The careful periodical examination of soldiers and sailors, and their immediate and thorough treatment when affected, are measures which ought to be easily enforced.

The spread of syphilis by vaccination and circumcision is a question which should be carefully looked into. Great differences of opinion exist as to what extent the youth of our country should be taught regarding the consequences which frequently follow venereal disease. Although much good may be done in this way the greatest care should be taken to state facts which can be easily comprehended by the listener. It is difficult to conceive of a subject which requires more good judgment, and it is to be deplored that instruction of the kind is often given by men in every way unfitted for the task.

The question of the spread of leprosy has for the last few months excited a good deal of attention in this country and in Europe. Addresses delivered by Dr. Morrow, in the New York Academy of Medicine, upon the history and spread of the disease in Mexico and in the Hawaiian Islands have excited the interest of professional men; while the death of Father Damien, in Molokai, has at the same time drawn popular attention to this subject.

It is very important that the thoughts of the people should be directed in a proper channel, when there is a disposition to deal with the question as one of a public character. Are there at present any grounds for alarm in consequence of the existence and spread of leprosy on this continent? Should measures be adopted for its eradication? and, if so, what course is likely to be successful?

The first question may be best answered by the statement of a few propositions about some of which the majority of scientific men are now agreed.

(1) That leprosy is contagious in the wider acceptation of that term is proved by the rapid spread in the the Hawaiian Islands, by its attacking persons not previously disposed to it after living for a time in a community of affected people, and by the discovery of a distinct bacillus which is intimately connected with the existence of the disease. Dr. Aring, in his report to the Hawaiian Government, made the following remarks with regard to contagion: "Accepting either theory, the direct or indirect transmission, we must look upon every individual leper, whether in the incipient or advanced stage of the disease, as a dangerous focus of the malady, he multiplying and nursing the germs in his own tissues." Dr. Aring further demonstrated the great vitality of the bacilli by finding them in cadavers which had been some months buried.

(2) That the disease can be conveyed from one to another by inoculation is a well-established fact. A number of cases of accidental inoculation have been reported, and the instance of the prisoner in whom the disease was produced in this way ought to set the matter at rest.

(3) That the germs may be introduced with food is a probability which has been much strengthened by Mr. Jonathan Hutchinson, in his paper recently contributed to the *British Medical Journal.*

(4) Dr. Mouritz, in his "Report on Leprosy as it existed in Molokai," dated February, 1886, ventures the opinion that the germs may be introduced by inhalation, and cites the case of Father Damien as an instance in illustration of this theory. The instances given certainly do not seem to prove the assertion, but we are not in a position to deny its truth. A great deal of weight should be given to the opinion of one who for two years has had the best opportunities for studying the disease.

(5) The hereditary transmission of leprosy was, until a few years ago, considered a settled question, and, in fact, the only way in which the spread of the disease could be accounted for. As a result of recent discoveries, the tendency of scientific opinion is in favor of the view that it is a predisposition to the malady which is hereditary, rather than the disease itself.

If the disease may be conveyed by any or all of these means, how can its slow progress on this continent be explained? There are records of cases which occurred in the early part of this century, and diseased persons have been allowed to come in from foreign lands, and still there has been no decided increase until of late years. Again, in leprous districts there are numerous instances of persons who have lived in the closest relationship with those affected, and that have themselves escaped. A marked case of this kind was reported by me in a paper on "Leprosy in New Brunswick," published in 1883.

The growth of the germs seems to depend largely upon the individual with whom they come in contact. In some races, for instance the Anglo-Saxon, as it now exists, there do not appear to be many susceptible individuals. This is strikingly shown in New Brunswick, where the disease exists almost exclusively among the French Canadians, or those connected by marriage with that race. Even then, however, there are some patients of purely Anglo-Saxon origin. In the Hawaiian Islands comparatively few of English or American descent have become affected. This immunity from the disease seems to depend upon our superior methods of living, rather than upon any racial peculiarities. It must, however, be remembered that in the most favored races there are some individuals who appear to be very susceptible, and who will contract the disease after comparatively slight exposure. Mr. Hutchinson has reported many such cases.

The conditions of the people on this continent have been such as in many ways to hinder the spread of disease. The population, as a rule, is not dense; and this is particulaly the case where leprosy is prevalent. In Minnesota, for instance, the dwellings cannot be very close together; and in Tracadie, although large families live in small houses, the whole district is more or less separated by miles of pine woods from other portions of the country.

Another explanation of the slow spread of leprosy exists in the fact that so far the disease has attacked other races than the Anglo-Saxon, and that there has been but little communication between affected persons and the latter race. In Louisiana and Canada the French race has principally suffered; in Minnesota, the Norwegian, and on the Pacific coast, the Chinese.

If, for instance, it were possible to send fifty or one hundred leprous persons of the Anglo-Saxon race into the poorer districts of one of our large cities, where they would mingle freely with the inhabitants, is it not reasonable to suppose that in a few years a number of new cases of leprosy would be developed?

In the same way, if one leprous person were so allowed to live, would it not be equally possible that three or four cases might arise, and the disease thus more slowly but quite as surely spread.

It is said that a wise statesman looks at least a hundred years ahead, and if in the year A. D. 2,000, there will be, as some statisticians say, 700,000,000 of people on the continent, or even half that number, and if the present process of centralization continues so that our large cities should become larger than any even in Europe, how impossible would it be to control this disease if it should become at all prevalent! It is probable that under such circumstances a large section of the community might become susceptible, and that leprosy might reach the dreaded proportion which at present exists in India.

In one respect the conditions are favorable for the extension of the disease, namely, that it exists in every quarter, — in the north, in New Brunswick; in the south, in Louisiana, Mexico and Trinidad; west, in California and British Columbia; while in Minnesota it is found in the very heart of the continent. Is it not possible that even now cases are coming into existence in these various localities? Indeed, only a few months ago three cases of leprosy were transferred from Cape Breton to Tracadie; and it is quite possible that diseased persons may still exist in that part of Nova Scotia.

It would thus appear that although there is no danger of a rapid spread of leprosy on this continent, there is a danger of its insidious propagation until it should reach proportions such as to make it very difficult to deal with. How hard it will be for the authorities of India to stamp out the disease, when, according to some authorities, there are nearly a quarter of million of lepers in that country!

According to statements made in a recent discussion on this subject in the New York Academy of Medicine, the number of cases on this continent has increased five-fold in the last ten years. Would it not be wiser for the various governments at once to adopt means for the prevention of the disease rather than to wait until it has become more widely spread? These measures may be divided into two classes, the prevention of leprous persons from coming into the country, and the proper care of those who are already here. To carry out the first, it would be necessary that all suspicious emigrants should be examined by a physician thoroughly competent to diagnose the disease in its earlier stages, and if leprosy were present, they should at once be sent back to be dealt with as the authorities of their native country might determine. Doubtful cases, if allowed to remain, should be placed under surveillance for two or three years; at least experience has shown that.

The only successful method of controlling the disease in the country is the segregation of the lepers, and their complete separation from healthy persons. This is a measure very difficult to carry out, even when there are but few cases, as is shown by the history of such laws in New Brunswick. In that province it was found almost impossible to compel some diseased persons to enter the lazaretto. If such were the case when there were but a few sufferers, how much harder would it be to enforce the law were the number greatly increased! This difficulty is one of the strongest reasons why such laws should be enacted without delay.

As the disease exists in the three great sub-divisions of the continent, the United States, Canada and Mexico, it would appear necessary that an international understanding should be arrived at whereby an asylum might be established in each country, and that the law should make it compulsory for all persons in whom the disease exists in an active stage to be thus separated from the healthy portion of the community. Such asylums should be made in every way as far as possible desirable places of residence, and should be placed in charge of physicians who would make a careful study of the disease. More successful methods of treatment might thereby be discovered, thus greatly benefiting the unfortunate patients themselves.

Dr. White, in his address delivered at our first meeting at Niagara Falls, in 1874, in giving the various objects and aims of this then new organization, made the following remarks:

"In the division of our work will be included the consideration of questions which may be of national importance. Leprosy has been hovering about our borders for many years; has been introduced into the heart of the country by the importation of stock from a people prone to the disease; has been, according to a reliable report, prevailing to a limited degree within a restricted locality of our Southern States; all for many years, and yet we have seen no reason to fear that it should gain a serious hold upon us. We have regarded it as a disease so far removed from us by time and geographical position that it did not concern us especially; but the history of its progress in the Hawaiian Islands within the past few years, the growing intimacy of communication between them and us, and the immigration in enormous numbers to the Pacific Coast of a race with whom it is indigenous, make the establishment of a foot-hold of the disease upon our soil by no means improbable.

"The question of its possible contagion was lately revived by competent observers; and of its most effective management, as a part of State or international medicine, may demand before long our special attention."

In view of these remarks I feel that, in making the suggestions already offered, I am well within the scope of operations of this Association.

I have thus taken up a few points in the Prevention of Skin Diseases, in order that more attention may be directed to that subject. Some of the remarks may seem superfluous to those coming from districts where sanitary laws are fully carried out. It is, however, quite certain that in many States and cities little attention is paid to such regulations.

It has been the custom of former presidents to make suggestions pointing to the improvement of the Association. Some members are of opinion that the thorough and exhaustive discussion of one or two subjects each year might add to the interest of our meetings. Such subjects for discussion might be selected by the Council, who could also appoint a referee and co-referee to introduce them.

Another point which might be considered, is the advisability of making it a rule to hold our annual meetings in large centres of population. Some of the most interesting and useful features of our gatherings might be the exhibition of rare forms of skin diseases. This could only be developed by making such a rule as that just mentioned.

The past year is memorable by two events, the first International Congress held in Paris, and the first meeting of the Congress of German Dermatologists held in Prague. The formation of these Associations will no doubt greatly stimulate the study of dermatology, and we may expect abundant fruit in future years as the result of their labors.

I will conclude by declaring the Association open for business, according to the programme which you have all received.

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PRESIDENT'S ADDRESS.
AMERICAN GYNECOLOGICAL SOCIETY.[1]

BY H. P. C. WILSON, M.D., BALTIMORE.

FELLOWS OF THE SOCIETY: — For the honor which you have conferred upon me in selecting me to preside over your deliberations, I tender you my hearty thanks. I realize that your partiality has overbalanced your judgment, that many now before me are more worthy of the honor, but not one more zealous for the good of this Society, not one more proud of the record it has made, not one more ambitious for its glorious future.

When I look down the line of pre-eminent men who have preceded me — some of whose names are as household words wherever the word "woman" is pronounced,— when I remember their achievements in this Society (as elsewhere), and realize that I stand here to take up the work which they have laid down, I should feel my utter helplessness, but for that generosity and support which I see beaming from every face before me.

As officers and privates, then, let us stand together in the future as in the past, a solid band battling for the truth in all that pertains to knowledge in obstetrics and gynecology. Let me congratulate you on meeting again under such favorable auspices in this charming city, always distinguished for its men of culture, its lights in science, its overflowing hospitality, — "a feast of reason and a flow of soul," are vouchsafed to us. Here we shall study obstetrics and gynecology pure and unadulterated (which is the sole purpose of this Society), free from the distractions of all other ologies, free from the interruptions of large assemblies with so many diversified interests. Here, too, we shall again cultivate those social qualities which have been such a charm at our annual meetings, and which have drawn us so closely together.

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[1] Delivered at the Fourteenth Annual Meeting, Boston, September 18, 1889.

The social feature of this Society is far more than mere eating and drinking; it brings the fellows together in such close intimacy that the views of one are readily exchanged for the views of another; minute points in science and practice are explained by man to man; obscure points in papers and debates are made clear; little things in operations and therapeutics (so essential) are elucidated, as cannot be done in the set essays and impromptu debates of the stated meetings. In mercantile language, our social gatherings are Gynecology on Change; and we would hold on to them as a powerful lever in elevating this Society.

On the 3d of June, 1876, in the Hall of the New York Academy of Medicine, nineteen gentlemen were assembled to found the American Gynecological Society. Twenty others, who were prevented from being present, sent in their approbation and hearty coöperation in the work undertaken; and thus thirty-nine names constituted the foundation fellows of this Society. Of these eight are dead: E. R. Peaslee, J. Marion Sims, W. L. Atlee, Albert H. Smith, J. P. White, J. D. Trask, Charles Buckingham, Ellerslie Wallace. "When shall we look upon their like again?" "They rest from their labors, but their works do follow them." Five have resigned on account of age, ill-health or other unavoidable causes. They have helped to bear the heat and burden of the day, and rest on their honors. As the shades of evening draw around them, our blessings rest upon them. Thus, of the thirty-nine foundation fellows, thirteen have passed from active membership. One-third of our original number are gone by death and resignation.

Of those who have joined us by election, we have lost eight, — five by resignation and three by death. The latter are, Drs. John Scott, James B. Hunter and Ellwood Wilson, — making twenty-one fellows in all lost to active fellowship in this Society since its foundation.

To Dr. James R. Chadwick, of Boston, is due the conception of this Society. To Dr. Fordyce Barker, more than to any other single fellow, is due its rapid growth to the stature of a strong and full-grown man. The recognition of his pre-eminent abilities, and of his labors in its behalf, has been manifested by his having been three times called unanimously to preside over its meetings, an honor which has never been accorded to any other fellow; and, while naming these, I would not detract one iota from the vigorous work by other fellows who have done so much to make the American Gynecological Society what it is to-day. Their labors are before you in our published transactions, and crown them with honor.

On the 13th of September, 1876, more than thirteen years ago, we held our first annual meeting in the hall of the New York Academy of Medicine. Twenty-eight fellows were present, and a number of distinguished foreign guests. It was my privilege to be there, and it has been with great pleasure and profit that I have attended every annual meeting since. I have always been present to answer to my name when the roll was called, and have never left till after final adjournment. I have watched with great interest and pride the history of this Society. To it can be traced many of my greatest achievements in life, and through it have been made many of my best and dearest friends. It is no wonder, then, that I should be proud of the appreciation in which it is held at home, and the fame that follows it abroad.

Whenever I have been in foreign lands, it has frequently been a passport to me in medical circles to be known as a member of the American Gynecological Society. I have repeatedly been told by medical men in Europe of the admiration they had for this Society, and the pleasure it would give them to be of its membership; and it has gained for me access to persons and places from which I should otherwise have been excluded.

It is of the first importance to me then, as to every fellow, that the reputation of this Society should be maintained, — yea, lifted far above its present elevated position. We must advance, and not rest on our past achievements.

I have already told you how many of the founders of this Society are gone; how many more are travelling down the hill of life burdened with the weight of years and loaded with innumerable cares; and how many more, in the prime of life, are overwhelmed by the daily duties of practical gynecology, from early morn to lingering eve, with nothing left of time or strength for scientific investigations. These are the men, who, under great difficulties as pioneers, have done so much to bring gynecology to what it is to-day. Nothing daunted by the shafts of ridicule, the detractions of jealousy, the threats of prosecution, Sims and his followers have pressed onward till this branch of medicine is now established on everlasting foundations.

In the natural course of things these early workers must soon rest from their labors. Their scalpels and speculums must pass into other hands; but it is with great pleasure and satisfaction that, in looking over this assemblage, I see so many men of youth, strength, diligence, brilliancy of mind and nobleness of purpose, to whom the interests of this Society can be entrusted, with the assurance that its position will be placed higher and higher in the temple of fame. Older men must step one side; younger men must take up the burden.

For the future of this Society nothing has given me more anxiety than the selection of new fellows. We want, as members, the best men in our land, men of brains, laborious men, gentlemen; men, who with cultivated minds, by patient research, can verify or disprove many of our crude pathological ideas. We want more scientific investigation into the pathology of the disease we are called on to treat. Sound pathology always insures better therapeutics. This kind of work cannot be demanded of the older members, who are constantly overwhelmed with the cares of daily practice, and whose minds are preoccupied with the questions of saving life and alleviating suffering.

It is to the younger men of this Society that we must especially look for contributions of original research, which in time, I trust, will make its transactions the storehouse of all that is sound in doctrine and best in practice.

They are not yet overwhelmed with patients; and while they have the time, the strength, the fire of youth, which stimulates to exploration, we would call on them to work for gynecology, as they will not be able to do in later years. Then gynecology will work for them.

I would increase the membership of this Society, not because "in a multitude of counsellors there is wisdom" (this is not always true), but because from our widely extended country many fellows are frequently unable to attend the annual meetings, and we are sometimes reduced to a small working force. Again, with a larger membership, we would have greater diversity of talent from which to bring forth things new and old.

I would abolish the third article of the constitution, which relates to the election of fellows. I would enlarge our number from time to time by invitations to join, and cut off all applications for membership. It was by invitations that this Society was formed. It should be by invitations that it is continued and enlarged. In this way we would get the best men in our country, many of whom are now deterred by the gauntlet they have to run from applying for membership. In this way also we should escape some of the unpleasant things which confront us at each business meeting.

I would restrain this Society from all entangling alliances with other societies. The distractions of such large assemblies are not promotive of the best work in any specialty. If we would make it the great authority on all gynecological subjects, if we would make it the first in wisdom as the first in age, we must abstain from too much allegiance to other societies, and let our full strength be concentrated here. Whatever time and labor are expended on them will be subtracted from this, and by so much will its vigor and strength be diminished.

I would hold with unyielding tenacity to the social feature of this Society. Nothing should be allowed to interfere with it. The cultivation of the heart is hardly second to the cultivation of the head. Cold comfort is a damper to the soul. Nothing so much as social gatherings has tended to bind us so firmly together — a united band of brethren.

LAPAROTOMY DURING MENSTRUATION.

But, gentlemen, before closing this address, which you have required me to deliver, and which is more trying to me than many laparotomies, I must present you with one question: Shall we perform laparotomy immediately preceding or during menstruation?

This is a question which frequently embarrassed me in my earlier professional experience. Books were searched and authorities consulted for its elucidation; but I found nothing to enlighten me on the subject. The medical friends with whom I consulted advised against such a procedure. In addition to this came the paper of Dr. Horatio R. Storer, read at the first meeting of this Society, in 1876, in which he concluded "that for pelvic operations, all things being equal, it is better to select the week immediately following the cessation of the catamenia," for all such operations.

Operations per vaginam may require the selection of the uterine ebb, where such choice can be made, as the dressings and attention necessary afterward may be embarrassed by menstruation; but for laparotomies involving the pelvic organs, my experience teaches me to select the uterine flood, rather than the uterine ebb. During the uterine flood, the circulation and innervation are in a state of tonic excitement. During the uterine ebb they are in a state of relaxation and depression; and patients thus are more liable to passive hæmorrhages, the absorption of septic poison. the deadly influence of shock, than when the system is under the stimulus of the uterine flood.

It may be said that inflammatory troubles are more apt to be set up during the uterine flood. I would ask the Fellows how many of their laparotomies have been lost by inflammation other than septic. I cannot recall one in my own experience. Shock, hæmorrhage, and blood-poison have been the causes of death in all cases, and blood-poison oftener than all other causes together.

On June 19, 1871, more than eighteen years ago, I performed ovariotomy on Mrs. C. C. W. The operation had been fixed for that day; all arrangements had been made. The weather was extremely hot, and the patient was alarmingly feeble. All efforts to build up her strength were futile. She was rapidly losing strength, and I realized that she could not survive much longer. When I reached the house, where a number of physicians were assembled, I found that Mrs. W. was menstruating very freely, about six days before her time. I was in great perplexity what to do. With the patient's great feebleness and the debilitating effects of the intense heat of summer in a large city, I did not think she could much longer survive. My preconceived opinion was that no operation on any of the pelvic organs should be done during menstruation. There was no authority to which I could turn to extricate me from my dilemma. My professional brethren present did not venture an opinion. I finally came to the unassisted conclusion that it was more dangerous to my patient for me to retreat than to advance. I removed the tumor. The woman made a good recovery. Her menses were very free for several days after the operation. This was my second case of ovariotomy — both successful.

In December, 1880, I removed both ovaries from Miss A. E. by abdominal section. This was the first operation of the kind by this method in the State of Maryland. The operation was done to bring on the menopause, for a bleeding myoma in the uterine walls. She was within four days of menstruation. It came on the night of the day of the operation, and was very profuse. She is now living, in perfect health, and married, taking care of her paralyzed husband and a large family of children by his former wife.

I might go on to report many cases on whom I had performed laparotomy very near or during menstruation, but I will not detain you. Within the past year I have done a number of such, and every one recovered. I have never lost a case of laparotomy done immediately before or during a menstruation, and I am thus forced to make the uterine flood the time of selection for such operations, rather than the uterine ebb.

But, gentlemen, there is a limit to all things, even to your patience, which has been great. I thank you for your kindness. You will thank me for — well, I will not say what. A few words more and I am done.

Since our last annual meeting Death has dealt us a terrible blow in cutting down two of our most esteemed and honored fellows, Drs. James B. Hunter and Ellwood Wilson. In no single year before has he been so merciless to us — two, for one in all previous years. The strength of this Society is made up of just such material. They were corner-stones in this superstructure. As one stone crumbles, another stronger one must replace it. To other hands I leave the preparation of memorials worthy of their characters, while we sorrow over our loss.

"In the midst of life we are in death." Who shall be the next to fall? God grant that we may so live as to be prepared to die.

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PRESIDENT'S ADDRESS. AMERICAN ORTHOPEDIC ASSOCIATION.[1]

BY E. H. BRADFORD, M.D.

Before beginning the regular exercises of our Third Annual Meeting, it will be well for a few moments to bring to mind, the facts which have led to the organization of this Association.

Our Association is a pioneer association in the department of orthopedic surgery. This brings with it both honor and responsibility; for the department of surgery we are interested in will be promoted or injured according as our work is equal to or falls short of the opportunity, and we must clearly bear in mind that the progress of orthopedic surgery has not been that of uninterrupted advance.

The history of this branch of surgery has been often told, the first attempts in the correction of deformities is perhaps as old as surgery. The existence of this special branch may be said to date from the work of Andry, who, in the last century gave it a name; and it is due chiefly to a remarkable group of French surgeons, — Delpech, Bouvier, Bonnet, Malgaigne, Guerin, Pravaz, — that the specialty may be said to owe its breath of life. The German surgeons Stromeyer, Heine, Dieffenback, Langenbeck fully equalled the French in their efforts, and too much cannot be said in praise of the work of the English surgeons. Percival Pott's name is stamped indelibly on the records of our specialty; the work of Sheldrake is a tradition for us. It is, however, to Little and his school, that we Americans are more indebted than to any other foreign influence in moulding our current practice.

Even at the present time when orthopedic surgery is so well established as is now the case in America, it is easy to note European influences, — especially that of German surgery; Boeckel and Ollier, of France; Macewen, of Glasgow; and Thomas, of Liverpool.

But though great progress was made in orthopedic surgery, it is not to be overlooked that it fell from the high estate it held in general surgical interest fifty years ago, until it became an almost despised and rejected branch. The orthopedic surgeon was regarded as a man of mere straps and buckles, or the custodian of that surgical chamber of horrors, the orthopedic institute. The reason of this decline of interest is not far to seek, if we recall the fact that fifty years ago the attention of the surgical world was turned to the remarkable feats of the great surgeons who taught us precision, skill and boldness in the triumphs of the amphitheatre, and that the ambition of all men of energy prompted them to emulate those monarchs of the operating-table. The famous line in the Iliad,

Ἰητρος γὰρ ἀνηρ πολλῶν ἀντάξιος ἀλλῶν,

was interpreted to mean the surgeon whose feats meant so much for humanity.

Following this period came the introduction of anæsthetics, which enormously enlarged the field of possible operations; and subsequently came the introduction and perfection of the antiseptic system which has enabled the surgeon to perform in his operations veritable marvels.

It is not strange that in the active current of progress the less brilliant branch of orthopedic surgery, where successes can rarely be won in the amphitheatre, and where the element of patient, persistent work is an important fact, should have been for the while passed aside by the energetic and ambitious.

The history of American orthopedic surgery shows, in a degree, the same tendency in development that existed in Europe, the same interest at one period and the same decline. In the last generation, however, when American arts and sciences had begun to free themselves from the provincialism of mere imitation of European models, the natural spirit of mechanical ingenuity became manifest in this branch of surgery. This has, perhaps, in some cases led to mechanical extravagance; but it will be universally admitted that a marked advance has been won, and that the tendency is in the right direction.

The history of orthopedic surgery in America can never be thoroughly written, as the earlier facilities for presenting cases and recording methods were necessarily imperfect in a new country. The earlier American bibliography, prior to 1860, which, through the kindness of Dr. Billings, has been copied for me from the catalogue of the Army Medical Library, shows not only much that is of interest, but indicates by what is implied as much as by what is published, that much excellent work was done which escapes the annalist.

The first triumph in orthopedic surgery in America is the classical operation by Rhea Barton (*North American Medical and Surgical Journal*, 1827, p. 279), the founder of osteotomy for correction of deformity, as McDowell is the founder of ovariotomy.

Physick's Fixation Hip Splint, described in 1831; Chase's paper on the "Treatment of Club Foot without Tenotomy" (*American Journal of Medical Sciences*), 1841; Mütter's work on "Club Foot," in 1845, — all indicate the intelligent interest taken in the subject. Excision of the hip was first performed in this country by Dr. Wilcox, of Eastern Pennsylvania, as early as 1849.

The stimulus of Stromeyer's achievements was quickly felt in America; and tenotomies were done by Rogers (1834), Dickson (1835) and Detmold (1837). To the latter belongs the credit of the first published tenotomy, the tenotomies of the two former surgeons not having been recorded. Detmold also acted *ex cathedra*, as it were, for he was fresh from the teachings of Stromeyer. The interest taken by general surgeons of the time in orthopedic surgery is indicated by the remarks of Valentine Mott, as quoted by Mütter, of Philadelphia, and by the well-known work on "Orthopedic Surgery," by Dr. Henry J. Bigelow, published in 1845, and which to-day is a model of excellence, and one of the best of publications to illustrate the French school of orthopedic surgery, the dominant school of the time.

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[1] Delivered at the Third Annual Meeting, Boston, September 17, 1889.

An operation by Dr. Sargent, of Worcester, the section of the psoas and iliacus muscle, reported before the Worcester Medical Society in 1841, was a triumph of boldness, and should not be passed unnoticed.[2] The following account is copied from the records of the Worcester District Medical Society, meeting of October 6, 1841:

"Dr. Sargent said he should relate some cases of contraction of the tendons.

"Case I was one of contraction of tendons of lower extremities in a child, with antero-posterior curvature of the spine, adduction of both thighs so that the knees were drawn firmly together, also extension of feet from contraction of the gastrocnemii muscles. First divided the adductor longus of the right thigh, which immediately relieved its position, and abduction became perfectly easy, and in a few days the limb assumes natural position when patient lies on his back. Three days after this the same operation was performed on the left thigh with similar results. Seven days after last operation cut tendo Achillis of each heel which 'let both down at once as low as the toes'; feet assumed natural position; was able to stand on his feet in a month after operation on heels. At the present time (about nine months after operation) there is still want of control over motions of hip-joint. Walking very much improved; can go very well with only one cane; before operation could only waddle along sidewise upon his toes by leaning upon two canes.

"Case II. A lad about thirteen or fourteen years of age came under notice in April last. About five months previous to that time, parents began to observe some deformity about left shoulder; spine of scapula was drawn upwards, and the inferior angle inwards, by permanent contraction of the trapezius and levator scapular muscles, so that the whole shoulder was raised about three inches. April 7th, made section of part of trapezius and levator scapular; on the 8th, elevation of shoulder about two inches; on the 10th, divided the remaining anterior portion of the trapezius. Owing to admission of air which followed the manipulation necessary to effect this section, and also to a peculiar constitutional predisposition of the patient, small abscesses formed, which were troublesome. After section of this muscle, by a little force, the shoulder could be depressed as low as the other. Without force, it remained elevated about one inch and a half. This was attempted to be overcome by mechanical means. Patient left, and went to Ohio a few days afterwards. Heard from him about a month after, when he had very much improved.

"Case III. A boy eight or nine years of age, about three years ago was taken sick suddenly after some exercise taken in a long walk the day previous. In two or three days every limb became stiff and immovable as though he were dead. In this condition he lay about three weeks. After gradually improving for some time he was sent into the country (his father living in the city of Boston), where his health continued to improve. But there remained permanent contraction of the muscles of the whole left half of the body, — with lateral curvature of the spine; contraction of muscles of lower extremities, rectus femoris and adductors of both thighs, both hamstrings, and tendo Achillis of left leg. Was six or eight months under the care of Dr. Abbe, and has been subjected to a great variety of treatment without the least benefit. Was subject to violent twitchings of the muscles of diseased parts. April 27th, divided tendo Achillis of left leg. May 3d, divided adductor longus femoris. A small artery was cut, which was followed by considerable hæmorrhage, which occasioned a little abscess. Leg was let down somewhat from former position. Ten days after division of heel-cord it was perfectly united. Convulsive movements ceased in each muscle after cutting the tendons. May 19th, cut tendons of rectus femoris and sartorius; slept better the night following than he had for a long time before. This let his thigh down somewhat. After trying extension for a while, it was found, about the 2d or 3d of June, that the thigh was still held up by contraction of the psoas and iliacus internus muscles. June 17th, after consultation, proceeded to divide these muscles, which lie in immediate contact with the femoral artery, and their section also endangered the cutting of the profunda and its branches. Great hæmorrhage followed the knife, but it was controlled immediately by compression. This operation let the thigh down completely, and relieved the drawing in the back, of which he complained before, whenever an attempt was made to extend the thigh. June 23d, removed all the dressings, and no bleeding; signs of large effusion; extensive lividity, etc., some vessication about parts compressed. June 26th and 27th, eschar forming below Poupart's ligament. June 30th, removed eschar and a portion of the large coagulum of blood; no hæmorrhage. Removed some daily till the whole came out, about a week after. About a week after the operation commenced extension of limb; kept the leg down and exercised it to prevent contraction. The leg, when extended, was now as long as the other. Could stand erect and walk easily in August. There still remained curvature of the spine and contraction of the abdominal muscles. But further division was out of the question. Supposing this might be acute contraction, and not permanent retraction, it was determined to try the effect of exercise of the muscles, and friction, with stimulating applications over the parts. The following pomade was used:

Ext. Bellad. . . . . ℨiij.
Tart. Ant. . . . . ℨi
Tr. Opii. . . . . . q. s. to form an ointment.

"This was applied perseveringly till the 24th of August, when the boy left, and went to Hadley. A fortnight ago heard from his father, that he continued to make great improvement."

Dr. Buckminster Brown has been kind enough to write for me the following outline of the history of orthopedic surgery in New England, which I quote in full:

"The history of orthopedic surgery in New England commenced in 1838, when Dr. John Ball Brown, of Boston, treated nine cases of spinal disease and curvature. Dr. Brown was for several years associate surgeon with Dr. John C. Warren, and afterwards consulting surgeon at the Massachusetts General Hospital. For some years previous to the above date he had given much attention to this class of complaints. In 1839 Dr. Brown received from Paris a copy of a publication of M. Bouvier, in which he describes the operation for the section of tendons in club foot devised by Delpech, together with the introduction by Stromeyer of subcutaneous tenotomy, his own (M. Bouvier's) modification of this method. He also received at the same time the apparatus employed in the after-treatment. Dr. Brown at once decided to perform this operation, and to pursue the method of treatment described.

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[2] As I am unable to find the records of Dr. Sargent's important case, Dr. Gage, of Worcester, has furnished me with the above copy of the transaction.

"On February 21, 1839, he did the operation on a little girl four or five years of age, who had talipes varus. The treatment was successful. So far as was known to Dr. Brown, this was the first time that subcutaneous tenotomy had been done in America. He afterwards learned it had been done once previously by Dr. Detmold, of New York. Dr. W. J. Little, of London, about this time published his first work on 'Club Foot and Analogous Distortions,' and this was a great assistance to the American pioneer.

"The various French treatises on this and kindred subjects by Guerin, Bouvier, Chassaignac and others were also welcome aid during the earlier years. He imported from Europe various instruments and drawings of apparatus, invented many and modified others.

"From the date above named, Dr. Brown had an extensive experience in this branch of surgery, and his reputation spread widely; patients, not only from the neighboring States, but from the South and from the West, and even from the Sandwich Islands, journeyed to Boston for the purpose of being placed under his care. In 1849 he opened, in a house hired for the purpose, a small hospital for the treatment of orthopedic cases. Dr. Brown continued in the practice of orthopedic surgery until his death, which occurred in 1862.

"Dr. Brown's treatment of talipes was essentially modelled on that of Little and Bouvier. In lateral curvature he adopted, to a certain extent, the course pursued by Jules Guerin, with modifications and improvements of his own; and in spinal caries fixation was the point aimed at.

"In 1846 Dr. Buckminster Brown returned from Europe, where he had followed the practice of Little, Stromeyer, Guerin and others. He immediately commenced practice in his profession, at first combining the orthopedic branch with general practice, and finally confining himself to the former. From this date to the present, he has from time to time published some of the results obtained from his practice and experience.

"In 1861 Dr. Buckminster Brown took charge of a ward in the Samaritan Hospital, for treatment of deformities."

The Children's Hospital in Boston, opened in 1866, though not an orthopedic institution, necessarily demanded treatment for cases of this sort, and has developed in this direction to such an extent that its orthopedic clinic may be said to be one of its most prominent features.

The increase of interest in this branch of surgery is marked in a practical way by the foundation of special hospitals. On May 1, 1863, the Hospital for Ruptured and Crippled, of New York, was opened by Dr. Knight, and is now one of the largest hospitals of its kind in existence. In 1866, an Orthopedic Dispensary was opened in New York, by Dr. C. F. Taylor. In 1873 it was enlarged into a hospital. Dr. C. F. Taylor was appointed consulting physician, in 1868, to St. Luke's hospital; and in 1872, Dr. Shaffer was appointed visiting consulting surgeon there. The interest in the treatment of deformities by Dr. J. K. Mitchell, of Philadelphia, was active, and led to the establishment of an orthopedic hospital in that city.

The progress of American orthopedic surgery, however, gives evidences of the same influences which delayed its progress abroad; but it is clear that the decadence of interest was less marked, and that the renaissance noticeable now in many places in Europe, came much earlier in America. For this we are specially indebted to the efforts of a few unusual men; and though others have contributed to the result, the influence of a few men is most marked on the current of orthopedic surgery.

It is not intended to consider here the different claims in small matters of priority. It is not a study of dates, but of influential factors, which the true historian is interested in. Discussion has long since ceased in our recognition of the results accomplished; and all are agreed to pay respect to Dr. Henry G. Davis for the originality and courage of conviction he displayed at at ime when originality was needed. It is to his suggestion that we, as members of the Association, owe more than we realize in the treatment of hip disease, in the treatment of caries of the spine, in the elastic correction of deformities. It is hardly an exaggeration to say, that, before his time, the general treatment of hip disease in common surgical practice was the actual cautery or the seton, and we all know the results which we can gain by treatment which has grown from his suggestion. Whether we know it or not, we are all followers of the teachings of Dr. Davis.

It is difficult to do full justice to the great influence and excellence of the work of Dr. C. F. Taylor. The best tribute to him lies in his unpublished records of an unparalleled series of difficult successful cases, reaching in thoroughness of observation through many years after a time when others would have termed a cure established. Those who have witnessed his methods and results, can simply add their testimony to the remarkable energy, thoroughness of method, perfect adaptation of mechanical appliances to surgical indications, and a force of character enabling him to carry, through years of discouragement, difficult cases of caries of the spine, until ultimate and permanent cures were reached. The stamp of thoroughness has marked all his work. To him we especially owe practical improvements of great importance in the traction splint; the introduction of a perfected protection splint in the convalescent treatment of hip disease; more rational methods of the treatment of club-foot; of paralytic deformities; the thorough mechanical treatment of Pott's disease. But, more than this, we owe the fact of the introduction of a rational, thorough, practical method of treatment by mechanical means, of a class of affections needing such treatment. Without his teachings our specialty would not have attained the perfection in mechanism it has reached. He has shown clearly the need of a variation of appliances in each individual case, according to the variation of the indications, and he has shown us how to meet those indications.

It is scarcely necessary to mention the name of Dr. Sayre in connection with the subject of orthopedic surgery. His fame in this regard is world-wide. One achievement alone would be sufficient for his renown, the well-known plaster corset; but it is not for this, or for his able advocacy of excision, for which alone are due our special thanks, so much as to the one great fact of the influence he has exerted. It is to him we owe the wide-spread interest which brings help to us from all over the country. Orthopedic surgery is no longer — thanks to the energy of Dr. Sayre. his brilliancy as a writer and teacher — a neglected branch of surgery. The surgeon no longer looks upon the treatment of orthopedic cases as a forlorn hope of despairing surgical duty, or as a matter to be relegated to the commercial instincts of the maker of trusses. The surgeon at present no more feels that his work has been fully done if he cuts the tendons of a clubfoot. and sends his patient to an instrument-maker than would a physician treating typhoid fever, feel justified in recognizing the affection, and leaving the direction of the diet and nursing to the apothecary, with the sale of the drugs.

Dr. Sayre has not only promoted the cause of the treatment of deformities; he has broadened the field of general surgery.

One other name can be added to the list. for the painstaking, determined courage of his work, and especially for the unusual record of success won through his unparalleled persistence. The records of surgical annals can be searched in vain for a well-established cure of double congenital dislocation of the hip, until we come to the work of Dr. Buckminster Brown. Space does not permit a full mention of the names of the workers who have labored so successfully in the department of orthopedic surgery, — Marsh, of Albany; Bauer, the first lecturer on the subject in America; Prince; Andrews. It is not intended to consider here contemporaneous work, which will speak for itself.

Enough has been said to indicate that a great responsibility falls upon us in our attempt to carry on the work which we inherit, and to do full justice to the legacy which is bequeathed to us. The work in the successful treatment of the chronic cases of diseases of the hip and spine is no holiday task, is not a triumph of the amphitheatre. It demands the highest qualities of the practitioner, — tact; judgment; knowledge of human nature; patience; estimate of character; the ability to gain the confidence of a fretful, suffering, petted child; the skill of a diplomate; the force to control through years of discouragement the surrounding household, ruled by a petted invalid, often despotic as a Turk; a determined courage which can force success after years of paralysis and suppuration; the sympathy which should always be hearty, kindly and sincere, but which should never warp our judgment. All this we know is often demanded of us. We know how rarely we can, in full measure, meet the demand; but we also know how often complete success will meet thorough work.

The successful treatment of Pott's disease, or hip disease, may not be as brilliant as excision of cancer of the pylorus; but it is more than brilliant, it is satisfactory. And though orthopedic surgery to-day offers many opportunities for the exercise of that surgical sense, and the art of operative interference (which we would not be worthy of the name of surgeon did we not prize), yet we should remember always, as our predecessors have done, that our specialty must essentially remain conservative in the best sense of the word. It should seek to obtain results with the least sacrifice of tissue, the least impairment of function. We are bound by our calling not to maim; we must, of all surgeons, be the last to fall victims to the *delire operatoire*. But it is also incumbent on us to remember that our duty as surgeons compels us to obtain the best results in the speediest way compatible with safety to our patient, and that he certainly is unworthy — a surgical laggard — who trusts to the temporizing expectancy of a mechanical appliance, when an osteotomy, an arthrectomy, an excision are needed.

It is well for us, in endeavoring to promote the study of the proper treatment and nature of deformities and deforming joint affections, to remember that the fact of our membership of this Association, formed for this purpose, involves especial responsibilities from the fact that it is a pioneer organization, and that the progress of the special branch of surgery we are here interested in, will be materially advanced or delayed according as our work is well or badly performed. Our success stimulates the endeavor of others, and our failure will check subsequent attempts.

We can trust that, as Americans, we have to some degree that spirit which we are proud to call American, which, respecting tradition, looks also for individual experience as the best of traditions, the spirit which prompts us to attempt the impossible, unmindful of the ill-success of others, trusting to ourselves. But we should also remember that individualism has also its defects, and that organizations like this of ours are often wrecked, or degenerate into assemblages of dull mediocrities or organizations of medical politics, unless the spirit of self-advancement, and the relation of mere personal triumphs, natural in all men of achievement and ambition, is subordinated to the highest scientific purpose, which alone promotes the best work.

The opportunity offered us in advancing orthopedic surgery is certainly an unusual one. The work is in many respects new. New methods are demanded in many directions. Investigation is especially needed, as well as the careful collection of recorded facts and results. Further, in no branch of surgery can greater satisfaction be gained than crowns success when success is won in the treatment of cases of our specialty.

It has been said epigrammatically that the practice of medicine consists of writing prescriptions while Nature effects a cure. Even in surgery, often we can claim to ourselves but little credit. "J'ai pansé : Dieu à guari," as Ambrose Paré so truly said; but sometimes we are enabled to fairly take up arms against an erring Nature, by our own efforts to check the destruction of caries, correct the deformity, and cure the distortion, winning results *invito Apolline*. This is nowhere more true than in the department we devote ourselves to, and it is to the advancement of this study, that we meet here, it is to be hoped, with a purpose of laboring earnestly, zealously, persistently, to promote our branch of the "noble art of surgery."

— Mayor Grant, of New York, was recently waited on with the suggestion that a meeting of the New York Relief Committee for the Pennsylvania flood sufferers be called in order that Governor Beaver, of the Keystone State, be requested to take steps to establish a hospital at Johnstown and another at Williamsport — each to cost $75,000 — out of the $1,600,000 now in Governor Beaver's hands as a surplus of the relief fund. Mayor Grant declined to take any action on the proposition in advance of the meeting of the Relief Committee.

Original Articles.

ABSTRACT OF A REMARKABLE CASE OF SLOW PULSE, EXTENDING OVER A PERIOD OF NEARLY TWO YEARS.[1]

BY D. W. PRENTISS, M.D., WASHINGTON.

G. W. P., white, male, carpenter by trade, aged fifty-four years. Father died of cystitis (enlarged prostate?) at age of seventy-five years. Mother died of cancer at age of forty-five. Has himself always been healthy. Almost never lost time from his work on account of sickness. The only illness he remembers was neuralgia of the stomach, fourteen years ago. Has received no injuries, except a fall when nineteen years old (fell on his feet; distance fifteen feet; suffered no bad consequences); and ten years ago a piece of brick fell on his head, cutting the scalp, but causing no serious injury.

Never had any form of venereal disease. Has always been temperate as to use of alcoholic stimulants, but not so as to use of tobacco, smoking a pipe almost constantly when opportunity offered.

I have been his family physician for sixteen years. During this time was never called upon to attend him personally until the present illness began.

December 13, 1887, he had been building a house down in Maryland in a malarial locality, when he began to have "weak spells"; and finally, upon lifting heavy weights on several occasions, he fainted. Becoming alarmed, he returned home; and I was sent for.

At this time I could find no well-defined disease. He was weak and depressed; tongue clean; no fever; mind clear; pulse, 36. As far as I can learn, there had previously been nothing abnormal about his pulse, urine normal. Bowels constipated. Examination of the heart discovered no organic disease. The systole was full and strong; the diastole greatly prolonged. Between the dates of December 13, 1887, and January 20, 1888, the pulse ranged from 22 to 76. During this time he had frequent attacks of syncope. He had been ordered to stay in bed; but as he became better, he got up and started down stairs. Was seized with fainting attacks; during one of which he fell down stairs; during another, fell out of a chair, remaining unconscious about a minute.

After January 20, 1888, when pulse had risen to 76, he had no more fainting-spells, but continued to convalesce slowly; and in March was able to resume work. He was cautioned about over-exertion, and specially not to use tobacco; which last caution, however, was not observed. He continued to work at intervals during the summer, until October, 1888, when he had a relapse, coming on with the same symptoms as the previous attack. The clinical record from October 2, 1888, to April 15, 1889, is given in detail: during this period the pulse ranged from 15 to 44 per minute. The fainting attacks continued throughout this time, and were sometimes very severe.

By April 15, 1889, he had improved so that he could sit up and go round the house, and out for short walks. No attempt was made to work.

About August 1, 1889, began to have a return of the old symptoms. For a week had had frequent fainting-spells with partial unconsciousness and dyspnœa. Pulse down to 12 and 15 during spells. Once fell down stairs. Between dates of August 5th and September 18th, the pulse ranged from 12 to 38 per minute, and from August 10th to August 15th it did not rise above 14 per minute. The temperature during this time was sub-normal, between 94.5° and 97°.

He improved after August 15th so as to be able to sit up, and September 18th was well enough to present himself for examination before the meeting of the Association of American Physicians at the Army Medical Museum.

The "spells" referred to in the report of this case are described as follows: They come on suddenly without warning, often without apparent cause, sometimes following exertion. He faints, losing consciousness. He describes the sensation as one of utter helplessness as they attack him, and as he comes to himself when they pass off. They last from a few seconds to half an hour.

The breathing is gasping and slow as in dying, and consciousness returns with a long-drawn breath. Face and hands become first pale and then dark purplish. There is no pain, but great exhaustion. Says, himself, they are due to "stoppage of the heart." Has great confidence in the bromide of ammonium, which he thinks controls the attacks.

During the time his pulse was slowest, — from 12 to 16, — these spells were recurring almost constantly; and his wife described the condition as being "terrible." She worked over him faithfully with whiskey and camphor internally, mustard and rubbing externally, and nitrate of amyl by inhalation, but thought many times that he was dead — with the black face, gasping respiration and pulse that seemed at times to entirely stop. She had learned to count the pulse, and she was certain that during the spells it was often much slower than I have recorded.

The treatment of the case from the first has been rest in bed, tonics, stimulants, electricity and bromide of ammonium, together with supporting diet. The tonics used were strychnia, quinine and iron, with belladona, in the following prescription:

℞	Strychniæ	0.04
	Ext. bellad.	0.20
	Ferri pyrophos.	3.00
	Quin. hydrochlo.	3.00

In twenty capsules, one three times a day.

These capsules were taken nearly constantly while he was under observation. The stimulants used were whiskey, camphor and coffee. Digitalis was tried, but made him distinctly worse. Nitro-glycerine seemed to help for a few doses, but later caused distress. Convalaria and strophanthus were tried with a like result. The form of electricity employed was the Faradic current — one electrode over the heart, and the other at the back of the neck. It seemed to be of decided benefit.

The drug, however, which appeared to give most relief, was bromide of ammonium given in doses of one gramme (1.00) three times a day, and extra doses when paroxysms threatened. He appreciates the relief from this medicine so much that he is not satisfied to be without it.

The most interesting question in this case turns on its pathology. What is the cause of the retarded action of the heart? I can but believe that it is a condition of rare occurrence, although in looking up the literature of the subject, I have found a large number of cases reported under the title of "Slow

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[1] Abstract of a paper read before the Association of American Physicians, Washington, D. C., September 19, 1889.

Pulse," some of which correspond in many particulars with the one here presented.

The causes which produce slow pulse may be classified as follows:

(1) Diseases or injuries to the nerve centres, producing either irritation of the pneumogastric or paralysis of the sympathetic (accelerator) nerves of the heart.

(2) Disease or injury of the pneumogastric nerve, increasing its irritability.

(3) Disease or injury of the sympathetic nerves of the heart, paralyzing them.

(4) Disease of the cardiac ganglia, by which the influence of the pneumogastric preponderates.

(5) Disease of the heart muscle (degeneration), whereby it fails to respond to the normal stimulus.

(6) Action of poisons, as of lead or tobacco, either on nerve endings or on nerve centres.

In one case reported, the slow pulse may have been due to a poison generated in salt fish. In another, it was due to the poison of algid pernicious fever.

In the present case, it is difficult to say, even at this late stage, to which of these divisions it belongs. There are no symptoms to indicate any form of disease of the nerve centres. There is no evidence of disease of the nerves themselves. Nor have we been able to discover any organic heart disease that might account for the symptoms. We have left, then, only the action of certain poisons; and the question presents itself, whether, in some obscure way, the conditions here present may not be due to tobacco poisoning from excessive smoking. This appears to be the most plausible explanation.

Another possibility is malarial poisoning. When the attack came on, he was working in a very malarial district; and in the summer of 1888, he had intermittent fever, which was relieved by quinine. These considerations make it probable that we have a paralysis of the accelerator nerves, and not an irritation of the vagus.

The symptoms presented in the case are those due solely to defective circulation. The syncope attacks were the result of insufficient blood-supply in the brain, and, if long continued, must result in serious alterations of the nerve centres, as well as of other organs, more particularly of the heart itself, by interfering with its nutrition.

In many of the cases collected in connection with this report, the pathological appearances were a *result* of the slow pulse rather than a cause.

In looking up the literature, it was found more extensive than anticipated. Abstracts are given of fifty-five cases of slow pulse, of which the following is a brief analysis as to causes:

		Cases.
1.	Fracture or dislocation of the cervical vertebræ	9
2.	Diseases of brain	9
3.	Cerebral syphilis	2
4.	Sunstroke	1
5.	Ossification of aortic valves and coronary arteries	2
6.	Starvation, exhaustion, loss of rest, convalescence	3
7.	Epilepsy and epileptoid disease	9
8.	Heart disease	6
9.	Lead poisoning, poisoning by salt fish, pernicious fever	3
10.	Nervous shock, cholera morbus	2
11.	Not stated	9

— The regents of the new hospital at Ann Arbor, Mich., have received an offer of ten acres of land for a hospital site, from Mrs. Israel Hall.

ANALYSIS OF ONE HUNDRED AND EIGHT CASES OF TYPHOID FEVER.[1]

BY J. N. HALL, M.D. (HARVARD), STERLING, COLORADO.

These comprise all that the writer has seen in six years, in private practice. During much of the time he was without professional neighbors, and hence saw all the cases occurring near him. It seems, therefore, that this series should present an especially fair average of the disease as it occurs on the Plains. The cases were partly in town and partly in country practice.

Of five years of age or under there were five cases.
Of five to ten years, fifteen cases.
Of ten to twenty years, thirty-two cases.
Of twenty to thirty years, thirty-eight cases.
Of thirty to forty years, fifteen cases.
Over forty years, three cases.

The oldest was fifty-five years of age; the youngest three years. These cases were equally divided between the sexes, fifty-four being male, fifty-four female. The total mortality, eight cases, gives a percentage of 7.4 +. Of the ninety-three cases cared for by the writer alone, five died, a percentage of 5.37 +. Of six cases under care of irregular practitioners during part of the sickness, two died, or 33 + %. Nine were seen in the temporary absence of other physicians, or in consultation. These were necessarily grave cases, and one died, or 11 + %. The two cases fatal under irregular care apparently would have recovered with any reasonable treatment, as in each case, as we shall see later, death occurred from an avoidable cause.

The mortality of 7.4 + % would go to substantiate the position assumed by the writer, that the disease is considerably milder on the Plains than in other parts of the country, notably the eastern and middle parts of the United States. Statistics from Murchison's tables and from various hospitals, give a general average of about 18 %, which, it seems, is ordinarily accepted as a fair statement of the mortality. So small a number of cases, is, however, manifestly more liable to error than larger ones are. Of the eight deaths, five were of males, three of females. Occurring in one household, there were in two instances, six cases of the disease; in two instances, three cases; in six instances, two cases. No instance of recurrence is noted, which would go to prove what is often not plainly set forth, that one attack seems to be often protective against others in future.

In regard to the ordinary signs: Rose-spots are noted in fifty-four cases, two of which were fatal. They were generally distributed over the body in two cases. In fifty-two cases they were not noted, four of these being fatal. They undoubtedly might have been found in many of these fifty-two cases if examined for at other times.

There were six cases of intestinal hæmorrhage, three fatal, three recovering. In one of the fatal cases hæmorrhages recurred almost daily for three weeks, accompanied by most extreme emaciation.

Affections of the lungs sufficiently serious to be called complications occurred in eleven cases, four of these being fatal. Two of the latter were cases of pneumonia. One case with hæmoptysis recovered. The others had the ordinary pulmonary congestion seen in severe cases of fever.

One woman was confined at term, without any serious symptoms, her temperature on the days preceding and following labor running from 103° to 104.5°. One woman, four months advanced, carried the child through in safety. One fatal case developed in the second week after a normal labor.

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[1] An abstract of a paper read before the Colorado State Medical Society, at its annual meeting, Denver, June 19, 1889.

Five cases relapsed, one proving fatal. Three fatal cases had bed-sores, one accompanied with an abscess in the groin.

Of epistaxis and hæmoptysis there were each one case, with recovery. Three cases of lymphangitis of the leg occurred, two being on the left side, one on the right; one of the former was fatal. Two cases of indigestion, as a sequel retarding convalescence, were noted.

Three cases, two boys and one woman, exhibited severe mental symptoms, possibly such as have, at times, given rise to the term, "meningeal typhoid"; all recovered. One case of balanitis was noted.

In one woman organic heart disease caused death several weeks after the subsidence of the fever, the course of the disease having been modified by pneumonia and rheumatic fever. This case is not included in the fatal cases, as she died long after all symptoms relating to the fever had disappeared.

The tissues in the neighborhood of the sublingual parotid gland inflamed and sloughed in a strumous girl of eight years. The destruction extended over the whole anterior part of the cheek, causing death from hæmorrhage.

Unfortunately no complete record of the presence or absence of diarrhœa was kept. The writer's impression is, that at least one-half of the cases were constipated. Diarrhœa occurred in five of the fatal cases.

In the treatment of this disease in hospital cases, the writer was led to think that the use of antipyretics, other than the sponge-bath, influenced the patients toward recovery little, if at all.

As to the lowering of the temperature, there was of course, no room for doubt. As a result of this experience, no one of these cases received any treatment directed toward the high temperature, other than the sponge-bath. It is to be noted, however, that these cases were, as a rule, mild, as evidenced by the very low mortality. In other localities, an opposite conclusion might be arrived at, of course. The objections which the writer has found against the drugs popularly used in the disease to control the temperature, are as follows: They disturb the stomach in many cases; some of them disturb the nervous system seriously; at times they cause dangerous collapse. None of them have seemed to the writer to hasten the recovery of the patient, however much they might lower the temperature.

In a general way the treatment has been expectant. The patients have nearly all received some dilute mineral acid, generally hydrochloric. Diarrhœa, cough, hæmorrhage and other symptoms, have been treated as they arose, and alcoholics used as indicated; especial attention was given to the feeding and nursing. Many of the patients have been cared for without skilled assistance in nursing. Hence the thermometer was not constantly used as a guide in giving the sponge-baths. In a general way it was ordered that these should be given whenever the skin became hot and dry. In many cases this required that they be given very frequently, of course. The writer believes that in no one fatal case could the fatal result be attributed directly to the high temperature.

Of the eight deaths: one was from intestinal hæmorrhage; one from hæmorrhage from face; one from pleuro-pneumonia, the patient drinking during convalescence, after being cautioned in the matter, two quarts of ice-cold milk at once, and dying in about three hours from heart-failure; one from exhaustion accompanying a lymphangitis of the leg; one from lack of attention to nursing, under care of an irregular practitioner; one from the too liberal use of a narcotic drug administered by an irregular physician; one from hæmorrhage and exhaustion, after the giving of a dose of Epsom salts, against the directions of the physician; the eighth death supervened upon child-bed, from diarrhœa and exhaustion.

The full baths advocated by Jürgensen, Liebermeister and others, seemed entirely uncalled for in these cases.

With regard to the influence of dry seasons upon the disease, it is interesting to note that, in 1887 and 1888, which were the dryest of the years included, the disease was very prevalent. Although more than one case was found in the same household frequently, the doctrine of contagion seemed to receive no support therefrom.

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Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Fourth Annual Meeting, held in the Army Medical Museum and Library, Washington, D. C., September 18, 19, and 20, 1889.

WEDNESDAY, 18TH. — MORNING SESSION.

The Association was called to order at 10 a. m. by the President, Dr. Francis Minot, of Boston.

The first business was the reading of the President's Address, which dealt with

THE PROGRESS OF MEDICINE DURING THE LAST FIFTY YEARS.[1]

The President reported the deaths of the following members: Drs. H. D. Schmidt, New Orleans; John C. Dalton, New York (honorary member); Robert Palmer Howard, Montreal; and Edward T. Bruen, Philadelphia.

THE EARLY STAGE OF GENERAL PARALYSIS,[2]

by Dr. C. F. Folsom, Boston.

The author first reported a number of cases illustrating the early stage of the disease, in which the motor disturbances were very slight, and might readily be overlooked and escape detection. The striking loss of muscular control or power, generally considered a part of the disease, was not found until a late period of the disease. The mental symptoms consist in impairment of a peculiar quality, often so slight as to be made out with difficulty.

The disease arises most commonly under prolonged strain, particularly when associated with unaccustomed excesses. At least two-thirds of the general paralytics have had syphilis. The relation of the disease with syphilis is too frequent to be accidental. The disease is, however, not a stage of syphilis, and is not benefited by specific treatment. The prognosis is probably not so hopeless as it is generally considered to be.

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[1] See page 269 of the Journal.

[2] This paper will be published in full in the Journal.

The common early treatment is harmful. Foreign travel is injurious. The only hope of at least partial cure or marked amelioration is in entire mental and physical rest.

DISCUSSION.

Dr. Robert T. Edes, Washington, reported the case of a man suffering now from pronounced general paralysis, in whom the first symptoms of the disease made their appearance some twenty years ago. If the anatomical view of general paralysis is accepted, he did not consider it strange that mental symptoms might precede the motor, depending upon the seat of the lesions.

Dr. S. Weir Mitchell, Philadelphia, was sure that certain cases of general paralysis began most markedly with motor trouble, while others began most decisively with mental conditions. In regard to syphilis he agreed with the author, except that he had seen cases due to syphilitic disease in which cure followed specific treatment. He had also seen cure follow in a small number of cases where the treatment was begun in the early stages, but where the motor disturbance and the mental incapacity were sufficiently marked to render the diagnosis reasonably certain. In all of these cases there had been a total abandonment of all previous pursuits with absolute mental and physical rest. He agreed with the author that foreign travel was often injurious.

Dr. James J. Putnam, Boston, remarked that the fact that syphilis acts in this disease, not by producing a direct lesion, but in an indirect manner, justified us in looking for other causes of degeneration which might act in a similar manner. He asked if the reader had seen any cases in which chronic lead poisoning was the apparent cause of the general paralysis, and related a case in which the imperfect and slow speech, the imperfect handwriting, and the expression of apathy and indifference, suggested a diagnosis of general paralysis. In this case there was, however, a history of drinking-water contaminated with lead, and there were certain local symptoms indicating lead-poisoning.

Dr. Wm. Pepper, Philadelphia, believed that he saw these cases from a different stand-point than that of Dr. Folsom. They come to him as cases of dyspepsia, lithæmic disturbance, and the like, and are under his care for some time before symptoms leading to recognition are developed, — sometimes for years before the paretic symptoms appear. He could not regard syphilis as in any way essential in the causation of general paralysis.

In regard to the early stage of the disease, there was not one symptom mentioned by Dr. Folsom or described by others as indicating the early stage, which he did not often find in cases of nervous lithæmia. There may be a grouping of these symptoms, or a delicacy on the part of the diagnostician which will enable a finer and finer shade of these differences to be recognized, which does constitute a basis of diagnosis.

He thought that general paralysis could be initiated by many disturbing, depressing or irritating causes, and that, in its early stages and slight degrees, it was capable not rarely of being entirely cured. If these cases are permitted to go on, with neglect of hygeine, and with excesses (sexual, alcoholic or business), a notable proportion will end with symptoms of general paralysis.

Dr. C. F. Folsom, Boston, said, in regard to lead, that while he had seen cases in which this agent had produced symptoms similar to the initial symptoms of general paralysis, he had not seen a case in which the terminal symptoms of general paralysis had been produced. As illustrating apparent cure after specific treatment, he referred to a case in which the use of large doses of iodide of potassium apparently produced complete recovery, and the patient returned to his previous business. The symptoms, after several months reappeared, and have continued to steadily progress. Whether this is the result in all such cases, he was unable to say.

TETANY,

by **Dr. James Stewart**.

The details of the following case were referred to:

The patient, a male, aged forty, has been troubled during the past eight years with regularly recurring attacks of tetany. He served as a soldier during the American civil war. Suffered at that time and subsequently from chronic dysentery and malarial attacks. For upwards of ten years he has been troubled with diarrhœa. Patient is tall, emaciated and anæmic. The first subjective symptom of his tetany is usually double vision, which is quickly followed by the characteristic contractions of the flexor muscles of the hands. Occasionally the flexors of the fore-arms and the adductors of the arms become spastic, muscles of the face almost constantly suffer, muscles of the lower extremities rarely.

The affected muscles are the seat during the attacks of fibrillary twitching. The attacks often last several days (seven to twelve), unless terminated by the very free use of morphia.

The galvanic irritability of the nerves is found to be greatly increased, also the mechanical irritability of both nerve and muscle Knee-jerks exaggerated during attack, absent in intervals. Œdema of the hands and arms, with herpetic eruptions frequently to be seen after particularly severe attacks. The quantity of urine excreted during attacks is usually normal in amount, and contains urea and indican in great excess. Patient has been under observation for more than three years, and it has been noticed during the past two years that he has been getting gradually dull and apathetic. It takes him a long time to answer questions, he complains of general numbness, his face and lips are swollen; symptoms closely resembling those seen in myxœdema.

Tetany may be divided into three varieties: —

(1) Epidemic or "rheumatic" tetany, common in Europe, but rare in America. This course is acute and favorable.

(2) Tetany from exhausting causes, as lactation, diarrhœa, etc. Course is chronic and favorable.

(3) Tetany from removal of the thyroid glands. Course generally is usually either quickly fatal or chronic and incurable.

(4) A form of tetany occurring in cases of dilatation of the stomach. Very fatal.

Infantile tetany is excluded from above division, as what is so frequently called tetany in infants is not that disease. No doubt, true tetany may occur in childhood.

Experimental Tetany. — When the thyroid gland is removed from cats, dogs or monkeys, a condition very similar to the typical tetany of the human subject is observed, namely, fibrillary tremors and intermittent spasmodic contractions. Death usually follows in a week, and no changes can be found to adequately account for it.

The fact that there is a great increase in the electric irritability of the nerves after the removal of the thyroid glands is strong evidence of the similarity of the tetany of man and animals. Of the many forms of muscular contractions seen in man, in none, with perhaps the exception of cholera, do we find any marked increase of the electric irritability of the nerves and muscles.

Morbid Anatomy. — No changes that in any way can be considered characteristic have been described.

Nature of. — All recent observers tend to confirm the conclusion of Schiff that the tetany following removal of the thyroid gland is directly due to the loss of the gland, and that the thyroid gland in some way has a direct influence over the nutrition of the nervous system.

It is difficult to explain how causes so diverse in their operation, as "rheumatic" influences, diarrhœa, pregnancy, lactation and removal of the thyroid, can induce similar symptoms.

It appears probable that impoverishment of the nerve centres is one of the main factors in its production.

TETANY AND A NEW THEORY OF ITS PATHOLOGY,

by Dr. John T. Carpenter, Pottsville, Pa.

The author defined tetany as a nervous disorder accompanied by tetanic spasms of an intermittent character, which may extend from the extremities to the muscles of the jaw, and is reproduced during the periods of intermission at will by pressure on the track of the affected nerve trunk or over the blood vessels obstructing the circulation.

An historical review of the disease was given. Tetany was regarded, not as a special disease, but as a sequel of precedent phenomena only. The affection was regarded as the result of septic absorption. The diminution of cases of tetany coincident with the successful treatment and the prevention of septic poisoning was regarded as an argument in favor of the connection between septicæmia and tetany. Cases illustrating this view were cited. The views previously held in regard to the pathology of tetany were discussed and considered untenable.

DISCUSSION.

Dr. Francis P. Kinnicutt, New York: I have seen but two cases of intermittent tetany, both occurring in patients with dilatation of the stomach. In one the dilatation was due to pyloric stricture resulting from cancer. In the other there was non-malignant stricture. In both of these cases the conditions were favorable to absorption of poisonous matter.

Dr. F. T. Miles, Baltimore, reported the case of a young woman aged twenty-two years. She had suffered from six to eight years from dilatation of the stomach. She had vomited acid matters but never offensive. She had several times had numbness of fingers and toes. She suffered her first attack of tetany twenty-four hours before her death. In this case the stomach had never been washed out.

Dr. A. Jacobi, New York, had been struck with the stress laid by the readers upon sepsis as the cause of tetany. In one of the cases reported by Dr. Stewart, which he thought was due to the absorption of putrid material, the stomach was twisted; and Dr. Jacobi suggested that the intermittent contracture was due to nervous influence resulting from the twisting rather than to absorption. He did not doubt that there were cases in which septic absorption produced such symptoms; but when we recall the fact that the contracture is temporary, we must conclude that the influences giving rise to that attack were also temporary. Many of these cases are, I think, the result of nervous irritation. In some of these cases reported I should attribute the condition to anæmia.

Dr. James J. Putnam, of Boston, remarked that the reported cases of tetany showed such a variety of infectious sources, that it seemed hardly probable that they should act in such a similar manner unless there were something else behind. Two or three things are to be considered. First, the influence of habit. The disease set up by a variety of causes may continue as a result of habit. Second, the suggestion that in such cases of disordered action we have to deal with an over-sensitiveness of physiological arrangement is important. In these conditions we have the disordered manifestation of what is really a function, but one which we ordinarily recognize, as it has no independent existence. It would seem that, in the absence of further knowledge with regard to infection and the manner in which this infection arising from various sources may act, we should insist upon the possibilities of explanation which are presented to us by what we know of the physiology and disordered physiology of the nervous system, in attempting to explain conditions met with in this and similar diseases.

Dr. James Stewart, Montreal, said, in connection with the influence of peripheral irritation, that in the cases of dilatation of the stomach where tetany had caused death, the symptoms came on a few hours after the stomach had been washed out. This would point to irritation rather than decomposition as the active cause in this class of cases. There are many other cases where infection could not enter.

Dr. John T. Carpenter, Pottsville, said, in regard to anæmia as the cause of tetany, that we should have to go back of the anæmia to the cause that produced it. He knew of no cause that would produce anæmia so surely as septic absorption.

AFTERNOON SESSION.

THROMBOSIS OF CEREBRAL SINUSES AND VEINS,

by Dr. A. B. Ball, New York.

The author first referred to the influence of the following factors in the production of thrombosis: — (1) blood stasis; (2) vessel lesion; (3) blood changes. The anatomical conditions in the sinuses that favor thrombosis were described at length. A number of cases of marantic thrombosis of cerebral veins and sinuses in chlorotic girls were given.

The symptoms were next considered. Much importance has been attached to distension of external veins collateral to the internal veins supposed to be affected, giving rise to hæmorrhages and œdema. These signs are frequently absent, and may be due to other conditions. The mobility of the symptoms have been considered of value. In these cases the cerebral symptoms undergo strange alterations not seen usually in other affections. Active delirium is exceptional. The depression continues, but alternates with a certain amount of improvement. Fever is absent at first, and, if present, is to be attributed to complicating conditions. Paralytic symptoms of varying extent are usually present. With the exception of the variation in degrees, the paralysis does not differ from paralysis from other causes.

DISCUSSION.

Dr. William Osler, Baltimore, exhibited two specimens illustrating the conditions described by Dr. Ball. The first specimen was one of extensive thrombosis of the lateral sinus occurring in a man who died from phlegmonous erysipelas of the cheek. There were no special symptoms in that case.

The second specimen was from a woman dying of consumption. It was thought that gradually increasing coma and the onset of cerebral symptoms were supposed to be due to the basilar meningitis.

Dr. A. Jacobi, New York, enumerated certain additional aiding causes. The first was a disproportion between the white and red blood corpuscles. The second cause was the relative absence of muscular tissue in a number of the veins. A third cause was absence of water in the blood, often due to the withholding of sufficient fluid in the diet of patients. The last cause referred to was weakness of the heart. When in exhaustive diseases, the heart is allowed to become feeble, thrombosis with all its bad results must be expected. It is certainly a good therapeutic measure to stimulate and strengthen the heart in every disease that will last long or tends to terminate in exhaustion.

Dr. William H. Welch, Baltimore, said: There is one point of great force in explaining the production of thrombosis, that is the possibility that there is some form of intoxication analogous to that produced experimentally by various substances, such as the fibrin ferment. Under such circumstances there is almost instantaneously thrombosis wherever the ferment reaches. Pathologists are aware of the frequency with which thrombi, usually of a mixed character, are found in the cerebral sinuses, particularly the superior longitudinal, in cases that have presented no symptom during life.

THE EFFUSION OF CHYLE AND OF CHYLE-LIKE, MILKY, FATTY FLUIDS INTO SEROUS CAVITIES,

by **Dr. Samuel C. Busey**, of Washington, D. C.

The object of the paper was to present the subject of effusion of chyle, chyle-like and fatty fluids into serous cavities. It was limited to the effusion of such fluids into the cavities of the pleuræ, peritoneum and tunica vaginalis. The subject of traumatic injuries of the absorbent vessels seems to have been peculiarly attractive to many of the older writers: Ruysch, as early as 1665, drew attention to wounds of the lymphatic vessels. The reported cases of effusion of chyle and milk-like fluids into the pleural and peritoneal cavities, including the doubtful cases, do not exceed forty-three; and these cases cover a period of one hundred and ninety years. Nevertheless, twenty-three of the cases of effusion of chyle and chyle-like fluid into the abdominal cavity have been observed during the present century, fifteen since 1850, and thirteen during the last and present decades. The increasing frequency of the occurrence is thus clearly shown.

Effusion into the Pleural Cavities: Chyle-Thorax. — Of this, including the doubtful cases, there have been ten cases reported. In five of these the chyle poured directly from the thoracic duct. The diagnosis in these cases can only be made by evacuation and examination of the fluid. The prominent symptoms are dyspnœa and accumulation of fluid in one or both cavities. The prognosis is improvable, and the treatment expectant.

Effusion into the Tunica Vaginalis Testis. — The case of galactocele reported by Vidal (de Cassis) seems to have been the first observation of this class of effusions. In two of the reported cases the patulous orifices of the vessels from which the lymph exuded were found. Since 1885 there have been reported in this country thirteen cases in which filaria were found; and two of these were cases of lymphocele. It has not been shown, however, that filaria are present in every case of lymphocele. It is conceivable that adenitis, gonorrhœal lymphangitis or other conditions which obliterate the permeability of neighboring and connecting glands might cause stasis of lymph and dilatation and rupture of lymph capillaries and plexuses with which the serous membranes are so richly supplied. The opinion of those who have had the best opportunity to study the relation of filaria to disease in general, seems to be that of Sir Joseph Fayre's, that "it has been shown that disorders of the lymphatic system are most frequently associated with, if not caused by, the filaria." The recent invasion of portions of the sub-tropical belt of this country by the filaria, and the reports of cases of disease with which the parasite has been so uniformly associated, together with the fact that the mosquito has been proven to be its intermediate host, present considerations of the highest importance to the profession and general public. Some of the cases have been cured by injection of iodine, others have been cured by dissecting back the vessels, and tying the bundle *en masse* with a silk ligature.

Chylous and Oily Ascites. — A tabulated statement, arranged chronologically, presenting a condensed summary of the reports of cases of chylous and oily ascites was given. The number of cases reported were thirty-three. Primary rupture occurred in but five cases. Chylous ascites may be the secondary result of a variety of morbid conditions which directly or remotely obstruct the flow of the chyle through the lacteals, receptaculum or thoracic duct, impede its exit into the left subclavian vein or retard the current of blood in the left subclavian vein, right side of the heart or lessen circulation. The relation of puerperal conditions to the effusion of chyle are not susceptible of explanation. In five cases the fluid found in the peritoneal cavity was associated with tuberculosis, and in four it is stated that the peritoneum was more or less studded with tubercles. No perforation or rupture of chyle-conveying vessels was found in any of these cases.

The symptomatology of effusion of chyle into the peritoneal cavity is not sufficiently distinctive to differentiate such cases from ordinary ascites, and a diagnosis is only possible after examination of the evacuated fluid. Of the thirty-three cases, nineteen died, nine recovered, and in five the result is not stated. Of the twenty-two cases of chylous ascites proper, twelve died, five recovered, and in five the result is not stated. Meagre and unsatisfactory as are the clinical details of these cases, they point to two conclusions: (1) that a free and obstructed channel of communication between the venous system and the chyle-conveying vessels is essential to the proper nutrition of the body and preservation of life; and (2) that death following the partial or complete obliteration of this communication is the result of inanition.

In seventeen of the thirty-three tabulated cases, tapping was practised, and in most of the cases repeated several times. Six of these recovered. In two, laparotomy was resorted to with recovery of both patients. One was a case of intact retention cyst, and the other was probably a ruptured cyst. As a medical resource, paracentesis is of questionable value. The treatment is mainly directed to the prolongation of life. The causative condition may in some cases be amenable to medicinal treatment, but in most cases some surgical procedure might offer a prospect of cure. In filarial cases, the treatment applicable to such would be admissible. Sonsina thinks that astringents such as gallic acid and tincture of the chloride of iron with rest, tonics and proper alimentation are useful. Lancereaux thinks that the parasitic forms of lymphatic disease are curable. He has found mercurial inunction in the region of the affected gland, in connection with hydropathy, of service. He suggests the injection of parasiticides into the affected glands for the purpose of destroying the female adult worm.

DISCUSSION.

Dr. Wm. Osler, Baltimore, said that in ordinary post-mortem work it was not unfrequent to meet with varices of the chyle vessels of the mesentery covering the walls of the intestine. Sometimes there are extravasations which may form large chylous cysts.

With reference to chyluria he was positive that there was a non-parasitic form. He had made thorough examinations in one such case and failed to find filaria. On post-mortem examination nothing was discovered. Also in a case of lymph scrotum, he had examined the fluid and the blood, and had found no embryos. He laid a great deal of stress upon these cases, as it is generally stated that these conditions are always parasitic.

Dr. Wm. H. Welch, Baltimore, exhibited a specimen of chyle removed from the abdominal cavity of a boy twelve years of age. He described the chemical and microscopical characters of the fluid, and dwelt upon the importance of distinguishing between chylous and fatty hydrops.

SUBSTITUTES FOR OPIUM IN CHRONIC DISEASES,[3]

by **Dr. J. F. A. Adams**, of Pittsfield, Mass.

The disadvantages attending the use of opium are: (1) in an overdose, it is a poison; (2) in ordinary doses, its benefits are largely offset by various functional derangements; (3) its use involves the danger of the opium habit. Other remedies may be substituted for opium for the relief of pain. The antipyretics, antipyrine, acetanilide, phenacetine and exalgine have well-grounded claims to be regarded as rivals of opium. They are, however, less certain, and less prompt, particularly where pain is very violent. Antipyrine in five to ten grain doses, had been found valuable as an analgesic, particularly in headache, neuralgia and rheumatism.

Acetanilide he had found less active than antipyrine. Used in doses of seven or eight grains, he had found it particularly serviceable in lumbago and dysmenorrhœa. In the latter condition one or two doses had afforded prompt relief. Salicylic acid and its sodium salt for the relief of pain in rheumatism, is to be included.

DISCUSSION.

Dr. G. M. Garland, Boston, referred to the value of the fluid extract of gelseminum as a substitute for opium. In frontal headaches it has an admirable effect. It is used also with advantage in difficult and painful menstruation, and certain forms of neuralgia. As a simple hypnotic, gelseminum answers well in cases of temporary congestion with insomnia and headache. In hysterical conditions, this agent will often induce sleep in a short time. The drug is given in doses of five to ten drops every half-hour until the desired effect is obtained, or its physiological effect is produced in diplopia and ptosis. These appear sufficiently early to serve as a warning.

Dr. Israel T. Dana, of Portland, reported two cases of opium habit occurring in a man and wife. The husband was a young man who had for some time given hypodermic injections of morphia to a patient dying of cancer. He subsequently broke his leg, and remembering the effect of the injections in the case of cancer, he tried them on himself. The result was so exhilarating that he "could not see why his wife should not have a little of the fun," and he began giving her the injections, although she was perfectly healthy. In this way the habit was induced, and when admitted to the hospital, each one was taking six grains of morphia daily.

Dr. M. G. Dadiman, who had practised in Asia Minor and Constantinople, stated that he had never seen a case of opium habit in his practice in these places.

REMARKABLE CASE OF SLOW PULSE,[4]

by **Dr. D. W. Prentiss**, Washington.

THURSDAY, 19TH. — MORNING SESSION.

RELATION BETWEEN CHLOROSIS, SIMPLE ANÆMIA, AND PERNICIOUS ANÆMIA,

by **Dr. Frederick P. Henry**, Philadelphia.

The discussion of the relation between chlorosis, anæmia, pernicious anæmia, etc., may be divided into three heads: —

(1) Are they separate diseases?
(2) Are they of kindred nature?
(3) Are they different stages of one affection?

Pernicious anæmia is first considered, because the determination of its status is of fundamental importance. It is admitted by all that the clinical features of this disease are common to a number of affections, especially cancer and atrophy of gastric glands; but those who argue most forcibly in favor of its independent nature exclude from the category of pernicious anæmia all cases in which an anatomical lesion of any organ is found. This appears to me unscientific, for an independent disease is one which rests upon a constant anatomical basis or is invariably produced by the same specific agent. Hunter has endeavored to establish pernicious anæmia as an independent disease by the demonstration of an excess of iron in the liver in cases of that affection. He regards this as the essential anatomical feature of pernicious anæmia. The work of Hunter is of great value, and certainly demonstrates the existence of an excessive hæmolysis in that disease. In my opinion, however, this excessive hæmolysis is a consequence of defective hæmogenesis, for certain facts show the red corpuscles of pernicious anæmia to be abnormally weak and perishable. Chlorosis is universally admitted to be due to defective hæmogenesis, and therefore I regard it and pernicious anæmia as closely related affections. Transitions from one affection to the other have also been observed by myself and others.

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[3] This paper will be published in full in the Journal.

[4] See page 303 of the Journal.

Conclusions. — (1) That pernicious anæmia is a process, not a disease; (2) that it is closely related to chlorosis; (3) that it may be the terminal stage of other diseases, and especially of cancer of the stomach and atrophy of the gastric glands.

Leucocythæmia and Hodgkins' disease, in that they are always associated with lesions of the blood-making organs — spleen, lymph-glands, bone-marrow, etc., — are independent diseases, or, rather, different stages of the same disease, for several cases are recorded in which an undoubted transition from one to the other has been observed.

THE RELATION OF ANÆMIA TO CHLOROSIS,

by Dr. F. Forcheimer, Cincinnati.

The speaker first referred to the confusion which existed in regard to the definition of the two diseases. Immermann states that we are justified in stating that anæmia is that condition in which there is a diminution of red corpuscles as well as of the albumins of the plasma in the blood (hypalbuminosis). Strümpell considered that "the essential element in anæmia is therefore a diminution in the number of red corpuscles, or so-called oligocythæmia," and states further that "oligocythæmia is not invariably accompanied by a diminution in the amount of serum-albumin (by which he means plasma-hypalbuminosis)." Going on, it is found that anæmia or oligæmia vera really means a diminution of the whole quantity of the blood, and that this condition can be divided into hydræmia, oligocythæmia, oligæmia sicca and oligæmia hypalbuminosis. We have three representative definitions: the one, broad and general, including a diminution of any one or all of the constituents of the blood; a second in which hypalbuminosis and oligocythæmia are the principal if not the only factors; and a third, which makes oligocythæmia alone the characteristic feature. From a purely practical standpoint the latter seems the best.

The same confusion in regard to definition is met with in a consideration of chlorosis. Duncan (1867) was, however, probably the first to make the distinctive feature, oligochromæmia characteristic for chlorosis, that is, in chlorosis we find the individual red corpuscles deficient in hæmoglobin. Unfortunately for this definition, the term chlorosis is to be looked upon as an essentially clinical one; it is not going too far to state that by far the great majority of reported cases of chlorosis are not chlorosis at all. Another difficulty is that both oligocythæmia and oligochromæmia may occur in the same individual, so that the term chloranæmia is justified by observation of existing conditions. It is more than probable that anæmia is a forerunner of chlorosis in a great many instances; and possibly a number of cases occur in which there is a combination of both conditions.

Almost any cause put down for anæmia will hold good for chlorosis. Sex, age, a peculiar composition of the blood, and certain vascular anomalies are held to be especially characteristic of chlorosis. The two latter are the only ones to be found in chlorosis. The process of sexual development is looked to as the time of most common occurrence of chlorosis. This age also produces a great number of cases of anæmia; but children and old people are subject to anæmia, and practically excluded from chlorosis. The greatest number of cases occurs between the ages of fifteen and twenty-five years, decidedly after the time of first menstruation. Furthermore, an anæmic constitution is a strong predisposing cause for chlorosis.

The clinical characteristic of chlorosis lies in the peculiar changes in the blood. In anæmia, the red corpuscles, as well as the albumin of the plasma, are reduced in quantity, and frequently there is production of a greater number of smaller corpuscles (microcytes). As a result of the reduction of the number of red corpuscles, the Hb. is correspondingly reduced in quantity. In pure chlorosis the number of red corpuscles is not diminished, and a tendency to the production of larger red corpuscles (megalocytes) is especially well marked. These changes are, however, not sufficiently characteristic to establish a diagnosis. It is, also, found that the amount of Hb. in each corpuscle is diminished. It has been said that in anæmia there is always hypalbuminosis, while in chlorosis this is absent; but this has not yet been positively proved.

One respect in which chlorosis is said to differ materially, if not absolutely, from anæmia, consists in the pathological changes, first described by Virchow. These are narrowing of the lumen of the aorta and larger arteries, as well as thinning of their walls. The heart is sometimes small, sometimes hypertrophied. This view would permit us to state that chlorosis is always congenital, in some cases latent for years, while anæmia in most cases is acquired. Many objections have been urged against this view.

The relation of the symptoms of anæmia to chlorosis depends upon the conditions of the blood and the anatomical sub-strata. Given a case of anæmia in which there is only a reduction of Hb. as a result of oligocythæmia, and a case of chlorosis, in which there is a reduction of Hb. as a result of oligochromæmia, and metabolism in both these cases will be approximately the same; but if in anæmia we have oligocythæmia as well as hypalbuminosis, which is said to co-exist in the majority of cases, the metabolism must be different from that of a pure case of oligocythæmia. As a result of reduction of Hb. there is simply reduction in the process of oxidation; at the same time the waste products are carried off, and sufficient albuminous food is carried to the tissues by the plasma of the blood, which is unchanged. Hypalbuminosis and oligocythæmia produce an entirely different result. We have the same factor, suboxidation; but we have, in addition, deficiency of supply. In mild cases of anæmia there is produced a loss of weight; in severe cases the condition called marasmus. In chlorosis very little if any loss of weight occurs; very frequently the opposite condition is brought about by too great supply, and by the presence of too much CO_2 preventing decomposition of fats. When anæmia is associated with chlorosis, we have a very unfortunate combination, especially if there is a great amount of hypalbuminosis.

Unless we believe that the anatomical lesions of Virchow to belong to chlorosis, there exists no difference between the symptoms of chlorosis and anæmia.

The therapeutic relations of the two diseases must be considered. While the indiscriminate use of iron in anæmia must be deprecated; yet, upon the whole, iron is just as much looked upon as a specific in anæmia as in chlorosis. Where in anæmia we try to remove the cause and institute causal treatment, we are satisfied in chlorosis with removing that symptom which is the essential of the disease. It has been repeatedly demonstrated that the removal of this essential symptom is followed temporarily by complete recovery. Whereas, in anæmia, treatment is followed by complete recovery or complete failure, iron in chlorosis will always result in amelioration, even if the tendency to relapse cannot be removed. There are few cases of chlorosis, even those with the lesions of Virchow, that are not benefited by the administration of iron in sufficient quantity. In a great many cases of anæmia, the use of iron would be followed by negative or by bad results.

DISCUSSION.

Dr. William Osler, Baltimore, took issue with Dr. Henry in regard to chlorosis. He held that chlorosis is absolutely distinct from pernicious anæmia, and for the following reasons: (1) The sex. He had never seen chlorosis in the male. (2) The pathological conditions. He regarded the hyperplasia of the heart and great vessels as a specific anatomical distinction of a certain number of cases. (3) The character of the blood. He considered the diminution of the percentage of hæmaglobin a distinctive feature of chlorosis. (4) Curability. Although in chlorosis there is a tendency to relapse, each given attack can be cured if sufficiently large doses of iron are employed.

Dr. Francis P. Kinnicutt, New York, agreed as to the lack of relation between chlorosis and pernicious anæmia. He had never seen true chlorosis in the male. All his cases of pernicious anæmia on the other hand, with one or two exceptions, had occurred in males. He agreed with Dr. Henry in regard to the relationship between Hodgkins' disease and true leucæmia. He reported a case which came under his observation with typical symptoms of Hodgkins' disease. At this time the proportion of white corpuscles to red was normal. The spleen and liver gradually enlarged, and two years later, at the time of the patient's death, there was one white corpuscle to five or six red.

Dr. W. W. Johnston, Washington, thought that a study of certain anæmias which are met with in women will throw light upon the association of anæmia with diseases of the intestinal glands and gastric tubules. The explanation of the chronic anæmias of parturition is probably the continual pressure upon the intestinal tube, causing a long starvation lasting nearly a year. This seems to produce an actual organic change in the intestinal glands. Several illustrative cases were cited.

Dr. William Pepper, Philadelphia, agreed with Dr. Osler in regard to the relation between true anæmia and chlorosis and progressive pernicious anæmia, so-called. He was not prepared to admit the analogy between true chlorosis and progressive pernicious anæmia. The conditions of the blood are widely antagonistic in these two affections. The clinical differences are also very marked. In the present state of knowledge, it is probably wiser to consider essential anæmia as an independent affection.

Dr. Frederick P. Henry, Philadelphia, thought that the definition of chlorosis given by Dr. Osler could not be maintained, that is, that there is always a diminution of hæmoglobin with a nearly normal number of red corpuscles. The arguments that he had advanced were based entirely upon personal observations. While chlorosis is readily relieved by treatment in the early stages, yet, if it is neglected, the chlorosis may become more intense and may present the appearance of pernicious anæmia.

SUBJECTIVE FALSE SENSATION OF COLD, CONSIDERED AS A SYMPTOM,

by **Dr. S. Weir Mitchell**, Philadelphia.

The speaker had met with many cases where a feeling of cold is complained of in members which do not present any objective changes in temperature. These may be placed in three classes: (1) those due to a central cause; (2) those due to neuritis; (3) those whose origin is at present inexplicable or due to hysteria. A number of cases exhibiting this symptom to an extreme degree, were reported. In the first case, a marked sensation of cold, involving the left side of the body, followed an injury to the head. Three or four cases were referred to, coming in the second class. The sensation of cold involved the posterior part of the legs, the back or buttocks. In all these cases, there was either neuritis at the time, or it developed subsequently. When this symptom is noted neuritis may be expected. Two cases belonging to the third group were described. One was an elderly individual with no sign of hysteria. The other was a case of a young woman with marked hysterical symptoms.

DISCUSSION.

Dr. James J. Putnam, Boston, had frequently seen the coldness spoken of in chronic spinal disease and in neuritis, and described such a case in a man with chronic sensory neuritis.

Dr. F. T. Miles, Baltimore, regarded this sensation of coldness as a very important symptom of neuritis, and reported a case associated with acute neuritis of the ulnar nerves.

GASTRIC NEURASTHENIA,[5]

by **Dr. G. M. Garland**, Boston.

The author first reviewed Leube's observations on dyspepsia nervosa, and presented a category of the gastric neuroses. A case of anorexia nervosa, occurring in a woman sixty-three years of age was reported. The woman was of feeble constitution. She had digested her food without consciousness of the process, and her bodily functions were practically normal in every way except that she suffered from anorexia. Three cases of vomitus nervosus were then reported.

The conclusions drawn from the cases were that: (1) All the women have been of dark complexion. (2) They have not been of the so-called hysterical temperament. (3) Feeding by the mouth was abandoned in every case, and rectal enemata were necessary. (4) None of the drugs usually potent in soothing a nauseated stomach were of any avail. Morphia subcutaneously was the only remedy that was of benefit. (5) The vomitus caused great discomfort along the throat, and in one case caused severe glossitis. In connection with the hyperacidity, the reader referred to certain cases of acid vomiting described by Rossbach, and designated nervosa gastroxynosis. The acidity of these cases depends upon excessive secretion of hydrochloric acid, and is independent of the presence of food in the stomach.

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[5] This paper will be published in full in the Journal.

AFTERNOON SESSION.

The discussion of Dr. Garland's paper was taken up.

Dr. S. Weir Mitchell, Philadelphia, said that in all cases of neurasthenia where there are great complaints of gastric and intestinal difficulty, the presence of hypochondriacal conditions must constantly be considered. It is rare for grave cases of neurasthenia to present themselves without some abdominal symptoms. In regard to anorexia nervosa he thought that in the majority of cases a background of hysteria would be found. It is suspicious that this condition is never seen in men.

Dr. William Pepper, Philadelphia, asked in what respects, other than the invariable and extreme acidity of the matters vomited, these cases differ from those that have been described under the head of cyclic and recurrent vomiting. He had seen many such cases, and some like the fatal case reported. In some of the cases the vomited matters were extremely acid. He had had these matters examined chemically, with the hope of finding some leucomaine, but so far with negative results. In regard to the treatment, the only remedy that had been of benefit, had been antipyrine. In one or two cases this had apparently stopped the attacks.

SPECIMENS FROM TWO CASES OF CRETINISM,

were presented by **Dr. W. F. Whitney**, of Boston.

PRIMARY CANCER OF THE GALL-BLADDER AND DUCTS,[6]

by **Dr. John H. Musser**, Philadelphia.

The speaker, after describing two cases of this affection that had come under his observation, reviewed the cases that had been reported and presented the the following conclusions:

Primary cancer of the gall-bladder is not so rare as is generally believed. It occurs in the female nearly three times as often as in the male. A large number (fifty-seven per cent) of the cases occur under the age of sixty.

Gall-stones are an exciting cause especially in persons predisposed to the affection. The organ is generally not much enlarged save as the result of secondary processes.

Dr. Henry Formad, Philadelphia, read a paper on

THE ANATOMICAL AND PHYSIOLOGICAL RELATIONS OF LESIONS OF THE HEART AND KIDNEYS.

The paper was based upon the post-mortem study of three hundred cases observed in public and private practice.

THE CONTAGIUM OF DIPHTHERIA,

by **Dr. P. G. Robinson**, St. Louis.

The subject is one which merits our most earnest and continued study, because of the prominent place it occupies among the prevailing causes of annual mortality, and because of the diversity of opinion which is entertained in regard to its etiology, pathology and treatment. The disease has become familiar to the practitioner only within the last generation, although traced historically to a very remote period. It prevails very generally throughout this continent, and constitutes one of the chief and most constant causes of mortality, which amounts to nearly 125 per thousand of the population of the United States, and of cases reported the percentage of deaths is from thirty to thirty-five.

Diphtheria is an acute infectious disease, doubtless due to a living organism (microbe) the exact identity of which cannot yet be regarded as settled.

Primarily a local affection, the system becomes secondarily and generally infected through absorption of a poison generated at the primary and localized seat of inoculation.

The modes of infection are numerous, the contagium being directly transferred by contact in a dry state through the air for limited distances in foul clothing, in polluted food and drink, milk probably being a prolific source of infection.

The most difficult problem to solve is that which relates to the conditions most favorable to the growth and development of the germs and the propagation of the disease.

While, strictly speaking, diphtheria can hardly be called a filth-disease, since it prevails often to a very limited extent in those localities whose hygenic surroundings are apparently the worst, yet certain kinds of filthy accumulations, as the ordure of animals, notably the refuse of cowsheds and dairies, seem to furnish the most favorable conditions for the culture of this particular germ.

Until this problem can be solved and the life history and habitat of the diphtheritic germ is understood, no definite plan can be formulated for the arrest of the contagion nor for the hopeful treatment of the disease.

FRIDAY, 20TH. — MORNING SESSION.

The following officers were elected:

President, Dr. S. C. Busey, Washington; *First Vice-President*, Dr. William Pepper, Philadelphia; *Second Vice-President*, Dr. Henry U. Lyman, Chicago; *Recorder*, Dr. I. Minis Hays, Philadelphia; *Secretary*, Dr. Henry Hun, Albany; *Treasurer*, Dr. W. W. Johnston, Washington; *Member of Council*, Dr. G. Baumgarten, St. Louis; *Representative on Executive Committee of Congress of American Physicians and Surgeons*, Dr. William Pepper, Philadelphia.

The following members were elected: Drs. William G. Thompson, William H. Thomson, J. West Roosevelt, New York; Drs. Charles Carey, Charles G. Stockton, Buffalo; Drs. Victor C. Vaughn, Heneage Gibbes, Ann Arbor; Dr. Charles W. Purdy, Chicago; Dr. Starling Loving, Columbus, O.; Dr. W. H. Geddings, Aiken, S. C.; Dr. William C. Dabney, Charlottesville, Va.; Dr. B. F. Westbrook, Brooklyn; Dr. Henry P. Walcott, Cambridge, Mass.

The date of the next meeting to be between May 20 and June 15, 1890.

A SUPPLEMENTARY INQUIRY INTO THE FREQUENCY WITH WHICH LEAD IS FOUND IN THE URINE,[7]

by **Dr. James J. Putnam**, Boston.

The paper embodied further researches as to the frequency with which traces of lead are found in the urine of persons in good health, or not presenting the classical symptoms of lead poisoning; and discussed the propriety of enlarging our clinical conception of that disease. A table was shown in which the results of the present investigation were combined with those reported upon two years ago, which may be summarized as follows: The urines of sixty-eight persons, either presenting no symptoms (healthy medical students), or only symptoms of specific or local disease (phthisis, pleurisy, local injuries, etc.), were found by Dr. A. M. Comey and Dr. C. P. Worcester, to contain lead in the proportion of about seventeen per cent.; while those of another group of 125 persons, presenting various symptoms of disease such as it was thought might possibly be due in part to lead poisoning, contained lead in the proportion of fifty per cent. The largest sub-group of this latter class embraced thirty-six cases, not strictly homogeneous, but made up of chronic or sub-chronic affections of the spinal cord and peripheral nerves. One (typical) fatal case of this sub-group was analyzed at some length, and the results of the microscopic examination of the spinal cord and nerves were reported upon.

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[6] This paper will be published in full in the Journal.

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A NUMBER OF OBSERVATIONS MADE ON BOSTON DRINKING-WATER,

by Dr. E. M. Greene, were reported, showing the frequency with which lead is present, and the length of time required to wholly rid a pipe of its presence.

HOW FAR MAY A COW BE TUBERCULOUS BEFORE THE MILK BECOMES DANGEROUS AS A FOOD-SUPPLY?

by Dr. Harold C. Ernst, Jamaica Plain, Mass.

The observations which he reported were made at the instance of the Massachusetts Society for the Promotion of Agriculture. The surroundings of the animals used were prepared in the most careful manner. One hundred and fourteens amples of milk were examined for the bacillus, and these were obtained from thirty-six cows suffering with tuberculosis of some organ other than the udder. Seventeen samples were found to contain tubercle bacilli. These specimens came from ten cows. The cream was found to contain bacilli as often as the milk. The bacilli were present with a fair degree of constancy.

Well animals were then inoculated with the result of inducing the disease in 50% of the cases treated. Feeding experiments were also made with the result of inducing the disease in a number of calves and young pigs. The following conclusions were presented:— (1) Emphatically, milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease. (2) The virus is present whether there is disease of the udder or not. (3) There is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis. (4) On the contrary, the bacilli of tuberculosis are present and active in a very large proportion of cases in the milk of cows affected with tuberculosis, but with *no discoverable* lesion of the udder.

PRIMARY CANCER OF THE DUODENUM,

by Dr. E. N. Whittier, Boston, was read by title.

Dr. Wm. Osler, of Baltimore, exhibited a patient showing anæsthesia, the result of lesions of the cauda equina, from spina bifida which had healed.

HOT AIR INHALATIONS IN PULMONARY TUBERCULOSIS,

by Dr. E. L. Trudeau, Saranac Lake.

The paper presented a brief clinical history of four cases treated during periods varying from one to four months, by Weigert's method. This was considered as secondary and only as a basis for the bacteriological study which is left to answer the claim of specificity made for the method. The question to be answered is, whether breathing of hot air can prevent the growth of the tubercle bacillus in the lungs of living individuals. The clinical evidence obtained brings out no positive proof in favor of the treatment. From the bacteriological research the following notes are made: In all the cases the bacillus which was present before the treatment remained in the sputum, and no effect was produced upon that important element of the disease. The claim of diminished virulence was tested by inoculations made on rabbits before, during and after the treatment. The sputum of one of the patients who improved was found fifteen weeks after the uninterrupted daily breathing of hot air to produce tuberculosis in the animals injected, as promptly and to a similar extent as that injected before the treatment had been instituted.

The author's conclusions were: (1) the therapeutic value of hot air inhalations in phthisis is doubtful; (2) the evidence obtained by bacteriological study of the cases recorded does not confirm the assumption that inhalations of heated air can either prevent the growth of the tubercle bacillus in the lungs of living individuals or diminish the virulence of this microbe when it has gained access to them.

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NEW YORK ACADEMY OF MEDICINE. SECTION ON ORTHOPEDIC SURGERY.

Stated Meeting, April 19, 1889. A. B. Judson, M.D., Chairman.

PSOAS ABSCESS FOLLOWING POTT'S DISEASE.

Dr. V. P. Gibney presented a patient, a girl fourteen years old, on whom he had operated for double psoas abscess following Pott's disease of nine years' duration. The carious vertebræ were evidently consolidated when, last November, large abscesses were discovered, and the patient was brought under treatment. On the right side the tumor was incised in Scarpa's space, and long forceps were passed under Poupart's ligament through the iliac fossa, and into the lumbar region, and a counter-opening was made on the forceps along the border of the erector spinæ muscle. Pieces of bone escaped with the pus. The cavity was curetted, and the bone scraped gently. With antiseptic dressing and injections of carbolic acid solution (1–40), and one per cent. creolin solution, both wounds closed in a month. The left side was then operated on by simple incision and drainage. Large quantities of bone detritus were scooped out with the finger. A sinus still remains on the left side from which a piece of bone is occasionally discharged.

The case was exhibited as showing the advantage of Owen's method over attacking simply the sac and not the whole suppurating track.

Dr. Gibney believed it would have been better to have treated both sides according to Owen's method; but in general he doubted the propriety of doing this operation during exfoliation, which would necessitate a subsequent operation. It is also important that the patient should be in pretty good condition.

Dr. R. H. Sayre had used injections of peroxide of hydrogen in large abscess cavities, with better results than from carbolic, or bichloride, or boro-salicylic solutions.

Dr. Gibney said that a similar experience had been reported by Dr. Vance.

Dr. Judson thought an objection to operating on these cases was that for the natural incarceration of the pus and detritus, we substituted an artificial opening, necessitating antisepsis to hasten cicatrization. If these accumulations are doing no harm, it is better to leave them for removal by natural processes; and if in due time they perforate the skin, the general and local conditions are ready to promote evacuation and speedy cicatrization.

Dr. J. A. Wyeth said that operation is indicated when large abscesses are situated on exposed parts of the body, and liable to injury and subsequent septic complications. He recalled the case of a woman who, thirteen years after being considered cured of Pott's disease, slipped and fell on a large gluteal abscess. The accident speedily gave rise to symptoms of sepsis with high febrile movements, and several operations under ether were necessary for the removal of bone detritus, which was spread through the gluteal muscles. The patient ran great risks, but finally recovered. He had had other similar cases. A psoas abscess behind the peritoneum causing no trouble should be left alone, but one pointing in the thigh, back, or other exposed situation should be operated upon as the danger of the operation is almost nil.

Dr. N. M. Shaffer was reminded of the history of a patient with Pott's disease and an abscess occupying the gluteal region and the anterior part of the thigh. The child fell, striking the gluteal tumor. The immediate symptoms were alarming, but without the adoption of any special treatment the accident resulted in the entire disappearance of the abscess. If there were any means of determining with certainty when an abscess from Pott's disease contains bony detritus, it would be preferable to operate; but while spondylitis is still active, it is better to postpone operating as long as possible.

He recalled a case of Pott's disease and hip-joint disease which he had been watching for several years, where spiculæ of bone as large as the end of the finger were expelled in a sudden and violent attack of coughing. The bone was undoubtedly from the cancellous structure of the sixth or seventh cervical vertebra. The patient was relieved at once, and physical examination showed that very little trouble had been caused by the entrance of the bone through the lung tissue into the bronchial tubes.

KNOCK-KNEE. — CLUB-FOOT. — DEFORMITY FOLLOWING HIP DISEASE.

In a paper on "Osteotomy," Dr. Wyeth related two cases in which he had corrected in-and-out knee in the same patient by double osteotomies. The patients were three and a half and four years old respectively. Both were discharged entirely relieved. Strict antisepsis was followed and the limbs were dressed in plaster-of-Paris in a position of over-correctness. He prefers MacCormac's incision on the outer side and just above the capsule, since the saphena vein and anastomatica magna artery are not endangered as in Macewen's operation on the inner aspect of the thigh. He also briefly related three cases in which patients, aged thirteen, eighteen, and twenty-six years respectively, had been relieved of the deformity following hip disease, and restored to good locomotions by operations on the femur. The method pursued was Gant's osteotomy below the lesser trochanter. The after-treatment had been Buck's extension and Hamilton's long splint. In one of the patients there had been double hip disease. Two months after the left femur had been operated on, the right was operated on; and four months after the date of the first operation the patient was discharged cured, with good locomotion.

He also related two cases in which congenital talipes equino-varus of the most exaggerated type had been corrected with good recovery, and with the feet in excellent shape. Tenotomy of the tendo Achilles, tibialis anticus, and tibialis posticus was first done; the first two subcutaneously, and the last by open incision, the tendon being disassociated from that of the flexor digitorum, and divided on an aneurism needle. The operation was completed by an osteotomy as follows: An incision was made on the outer side of the dorsum, exactly over the point of greatest convexity; the tissues were lifted from the tarsus by an elevator, and a conical section, including portions of the calcaneus astragalus, cupoid, and scaphoid, was removed. The rule should be to remove all parts which prevent replacement of the foot. The foot being brought into normal position by aversion and rotation, aseptic dressing and plaster-of-Paris completed the treatment, the result of which was excellent.

Dr. Gibney said that the anatomical point raised in the paper concerning supra-condyloid osteotomies certainly commends to us the operation of MacCormac. Although in-and-out knee in the same subject is rare, he had seen many instances of multiple deformity among Bohemians and Italians. He had recently done a sextuple osteotomy at one sitting, and is treating an ununited fracture of the right tibia, all the others having united.

Dr. Judson thought that in congenital talipes the reduction of the deformity by mechanical or operative means is easy; but that is a small part of the necessary treatment. So long as the patient is growing, he must be under occasional observation, and if necessary, made to wear for a few months, at intervals of two or three years, a brace fitted to the present needs, in order to prevent threatened relapses. In the deformities of the knee there is especial reason for preferring mechanical means of correction, because here we have the advantage of the leverage found in the tibia and femur; while in club-foot there is only the tibia on one side, and on the other, the short and many-jointed foot.

Dr. H. L. Taylor said that late observation of the results of treatment is of especial importance in orthopedic practice. If surgeons and orthopedists would report the condition of patients five, ten, or more years after dismissal, a more intelligent choice of methods could be made.

Dr. Shaffer said that his experience with mechanical appliances in the treatment of talipes leads him to think that many severe operations are performed on patients who could be better treated by traction. He recalled a case in which there was confirmed equino-varus, although three or four tenotomies, and five or six osteotomies had been performed. He had applied the "external lateral stretcher," and the patient is now walking on the flat of the foot. He referred to the interesting question whether osteotomy is advisible when there is motion in the hip-joint. In a patient on whom Dr. W. T. Bull had operated, some motion was found after etherization. The reduction of the deformity by osteotomy had been followed by persistent traction with the hip-splint; and good position and slight motion had both been retained.

Dr. Gibney believed that the presence of motion is not a contraindication to the operation. About six months ago he had performed Gant's operation for a right-angled deformity. The flexion had been reduced from 90° to 15°, and the limb was retained at 15° of flexion by a traction apparatus for three or four months, when it was removed and the patient allowed to walk about with a high shoe. After about six weeks, the flexion had increased to 25° or 30°. Traction was reapplied, and the limb is being again brought down. He recognized the necessity of protective apparatus in order to retain or increase the result secured by operation.

Dr. Wyeth had operated in several cases where there was motion, and had refused to do it in others. In a patient whom he had seen with Dr. L. A. Sayre, there was considerable motion, and he had done a tenotomy for temporary relief, postponing osteotomy.

Dr. R. H. Sayre said that in the case referred to improvement had followed the tenotomy, but an apparatus is necessary to prevent a return of deformity. He thought that in some cases sufficient reduction of the flexion might be brought about by section of the psoas and iliacus muscles. This had been done in one case in which, although the operation had been subcutaneous, injury of the vessels had been avoided. By open section this danger would be avoided.

Dr. J. D. Wilson expressed surprise at the frequent mention of elevations of temperature in the history of Dr. Wyeth's cases, which had been treated antiseptical. Have our teachings been too absolute, or do such temperatures really indicate imperfect antisepsis?

Dr. Wyeth replied that "the temperature of reaction," occasionally as high as 102°, occurred in the first twenty-four hours, but it usually fell to normal in forty-eight hours. Traumatism, ether, shock, and the use of sublimate combine to produce this reaction, which might still be called an aseptic temperature. He closed the discussion by saying that the simplicity and safety of osteotomy had been shown by the cases he had reported. While no case of equino-varus treated the first two years of life should require tarsotomy, neglected cases will present themselves where nothing but tarsotomy will give relief. The operation may give considerable foreshortening to the foot, but one can certainly correct the deformity, however great, by removing enough bone; and if this be properly done, he believed it to be real conservatism.

— Plans have been drawn and estimates approved for the erection of a large and well-equipped hospital building for the Philadelphia Polyclinic. The building committee is composed of six members of the faculty, Drs. Williams, Mays, Jackson, Leffman, Roberts and Wilson. A lot of ground on Lombard Street between Eighteenth and Nineteenth, 96x143 feet, has been purchased. Work will be begun at once on the task of clearing the ground, and the corner-stone laying is expected to take place in early November. The building entire will cost about $55,000, and it is thought will be ready by the winter of 1890.

Recent Literature.

The Essentials of Physical Diagnosis of the Chest and Abdomen. By J. Wallace Anderson, M.D., Physician to the Royal Infirmary, Glasgow, and Lecturer on Medicine, Royal Infirmary Medical School, author of "Medical Nursing." New York: Macmillan & Co. 1889.

This little volume of 150 pages, was written, as the author tells us, to provide junior students with a simple, concise work on Physical Diagnosis, that would take the place to some extent of the clinical lecture, and leave the instructor more time for practical demonstration. It seems to us to meet this aim, on the whole, very well. As the student progresses farther in his work he will find it advantageous, of course, to consult more extended works; but for the essentials, the cardinal points of physical diagnosis, Dr. Anderson is clear and sufficiently explicit. Occasionally only are mooted points introduced, and they are thrown into smaller print.

In a few points only does Dr. Anderson depart from the ordinary usage of the majority of authorities. For instance, he apparently uses only the monaural wooden stethoscope, saying of the ordinary form (flexible binaural) that its use involves the disadvantage of training one's self to the employment of two different modes of mediate auscultation; "for few will hold that the exclusive use of the binaural is to be preferred to that of the ordinary (sic) form." It is hardly necessary to say that this objection seems quite untenable.

While Dr. Anderson's descriptions of physical signs are, as a rule, clear and graphic, as, for example, in saying that the emphysematous chest is "the thorax of permanent inspiration," he lays stress always on showing the student when and how he may hear for himself specimens of each of the sounds to be studied, and so form his idea, independent of any description; for example, to hear bronchial breathing over a bronchus, etc.

Only one-sixth of the volume is given to the examination of the abdominal organs, and this is the least satisfactory part of the book. A full index greatly facilitates the usefulness of the volume for purposes of reference.

Lectures to Practitioners on the Diseases of the Kidney Amenable to Surgical Treatment. By David Newman, M.D.. Surgeon to the Western Infirmary, Out-door Department; Pathologist to, and Lecturer on Pathology at Glasgow Royal Infirmary; Examiner in Pathology in the University of Glasgow; Vice-President Glasgow Pathological and Clinical Society. London and New York: Longmans, Green & Co. 1888.

This work is a series of lectures delivered to post-graduates in Glasgow during the autumn of 1886. It is a work that bristles with statistics and tables, the author having evidently consumed a vast amount of time and energy in collecting a large number of operated cases. Very few illustrations break the text. This is a matter to be regretted.

This work reads well and will be of interest to the busy practitioner. The author's opinions are calm and judicious, and the work distinctly marks an advance in this field of surgery.

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SPECIAL NATIONAL MEDICAL ASSOCIATIONS.

Last week was pre-eminent in medical annals for the number of Special National Medical Societies holding their annual meetings, and most of these were on the same days, September 17, 18, 19 and 20.

The American Gynecological Society (the pioneer in these special national organizations) held its fourteenth annual meeting; the Dermatological Association (a but slightly younger sister) its thirteenth annual meeting; the Orthopedic Association (almost of another generation, but with the same vigor) its third annual meeting. These three societies all met in Boston; and we are fortunate enough, through the courtesy of their presiding officers, to be able to give our readers the Presidential Addresses delivered before these three learned bodies. There can be no doubt that our Boston friends will feel properly appreciative of the kind things which these gentlemen felt it right to say in regard to the professional zeal and wisdom manifest in the past in the city where they found themselves.

The meetings were scientifically and socially successful and agreeable and will be reported in full in the Journal.

At the same time, in Washington, the Association of American Physicians was holding its fourth, and the American Pediatric Society its first annual meeting. The address of the President of the former, Dr. Francis Minot, we published last week; and the proceedings of the three days are reported in this issue. The Pediatric Society, which met under the able presidency of Dr. A. Jacobi, will give a good account of itself.

At the same time, the American Association of Obstetricians and Gynecologists, one of the youngest candidates for favor as a national special organization, met at Cincinnati, Dr. William H. Taylor being President. In October the American Public Health Association meets in Brooklyn, N. Y., the Rhinological Association on the 9, 10 and 11, in Chicago. In November the Academy of Medicine has its annual meeting in Chicago, and the Southern Surgical and Gynecological Association meets in Nashville. Indeed, at the rate at which these organizations are now springing up, no reputable physician ought to be able to satisfy himself long with any excuse for not belonging to at least one of them and for not attending its meetings, at least at times.

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THE CAUSES OF SUPPURATION.

In a paper read before the French Association for the Advancement of Sciences, M. Steinhaus, of Varsovia, combats the notion which has of late been gaining a strong hold of the professional mind, that without microbes there can be no suppuration.

He cites the experiments of Straus, of Bary and Christmas (among others) as giving results entire contradictory to the doctrine that suppuration is absolutely dependent on microbes. He has himself made two hundred and forty-five experiments on dogs, cats, guinea-pigs and hares.

As pyogenic agents, he has employed chloride of zinc, chloride of mercury, pure mercury, nitrate of silver, oil of turpentine, croton oil, and culture broths, which had contained the staphylococcus pyogenes. All these substances were injected under the skin of animals, after having previously been sterilized in Koch's apparatus.

The results were as follows: In the guinea-pigs and hares, only the chloride of mercury, mercury and the sterilized broths produced suppuration, while in the cats and dogs, besides these substances, oil of turpentine, petroleum, and nitrate of silver produced it as well.

These results compelled the conclusion that suppuration may be provoked by sterilized chemical bodies, and that it is possible without microbes.

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MEDICAL NOTES.

— Dr. S. Weir Mitchell, of Philadelphia, has been elected President of the Congress of American Physicians and Surgeons which meets in Washington in September, 1891.

— The decline of the birth-rate proportionately to the death-rate, has again attracted legislature attention in France. The French Chamber of Deputies has inserted in an appropriation bill the following words: — "The fathers and mothers of seven children shall be exempt from all personal taxes and taxes on personal property." In the year 1888 there were registered in France 882,639 births and 837,867 deaths, or only 44,772 births in excess of the number of deaths. In 1887 the number of births in excess of the deaths was 56,536. The number of births over the number of deaths has been regularly decreasing for many years, and statisticians look forward naturally to the time when the figures will be equal, and then will turn the other way. In 1884 there were 937,000 births; in 1885, 924,000; in 1886, 912,000; in 1887, 899,000. In London alone in the year 1888 the number of births above deaths was superior to that in all France.

— The National Conference of Charities and Corrections was held in San Francisco, September 15th and following days. Among the subjects discussed was the "State and Care of the Insane," opened with a paper by Dr. W. W. Godding, Washington.

— The *New York Herald* discusses the Faith Cure System, as exemplified in the case of the late Martha Olsen, and after some pretty strong expressions of its views, concludes by saying, "It is all right to be religious, but it is all wrong to be fools."

— The President and Fellows of the King's and Queen's College of Physicians, in Ireland, having requested the Privy Council to include carbolic acid under the list of poisons, for purposes of restriction of sale, the lord-lieutenant has refused to do so, basing his decision on uniformity with usage in England, where, it appears, carbolic acid is held not to be a poison.

— A reporter of the *Pittsburgh Dispatch* "does up" an amputation for the delectation of his readers and explains the great care taken "to keep small insects out of the wounds."

"After the leg was severed from the body," says the scribe. "the stump was scraped very carefully; the chloride of mercury was kept flowing constantly over the wound to kill any insects that might be drawn by the wound. The doctors hold that the air is full of poisonous germs, which are attracted to a wound where blood flows. All the linens and gauze which are used in operations are soaked for twenty-four hours in bichloride from 100 to 500 per cent. in strength. This is done to prevent the slightest irritation after the operation has been performed!"

— As an illustration of the sort of problems in heredity which Mr. Francis Galton is desirous of investigating, we print the following question, which was proposed by him to the recent Congress of Psychological Physiology. He spoke of an aquarium divided into two parts by a plate of glass perfectly transparent, and therefore invisible to the fish. In one division there was a pike, in the other a gudgeon. Every time the pike saw the gudgeon he rushed to seize him, but every time he was stopped by the plate of glass. He did not learn soon, but for several months made this rush and bruised his nose against the glass. Finally he came to understand that for some reason inscrutable to his intelligence he could not seize the gudgeon, and then he gave it up. He now swam about seeing the gudgeon constantly but paying no attention to it. Then the plate of glass was removed. This made no difference, the pike did not attempt to take the gudgeon. He had acquired the habit of leaving the gudgeon alone. The question was, would his descendants inherit that habit or possess the original impulse of their kind? Illustrations of this kind, or showing the operating of the principle of acquired inheritance, are what Mr. Galton wants.

— The following item is copied from the *Evansville, (Ind.) Courier* as an example at once of clear English expression and intelligent economical science. "It has become customary with all corporations, societies, companies and many private individuals, when they have a job of building, repairing, painting, glazing, papering, printing, or any work to do, to ask for bids for the same. This has become so common that a large number of citizens have lately joined together for what they claim is self-protection, and will soon hold a mass meeting to act upon measures already proposed for mutual protection. Among these the one most necessary is some means to protect themselves against what they claim to be the exorbitant charges of the Medical trust. To do this blanks will be given to the heads of families for the purpose of getting bids for attending their families by the year or by the job, as they may deem best. This seems to be a good move, if carried out properly, and should include, besides the physicians, preachers, lawyers, and all other professions and artisans that have formed trusts, and thus a revolution will occur that all would gladly see succeed."

BOSTON.

— The following sign is displayed on a public thoroughfare in Boston. What it means, or what its patrons think it means, or what its owners intend its patrons to think it means, we do not venture to conjecture:

DOCTORS OF THE
BRITISH STAFF OF PHYSICIANS AND SURGEONS
ARE NOW STOPPING HERE.

NEW YORK.

— During the month of September there have been two deaths from electricity in the city. The first was that of the Superintendent of Construction of the East River Electric Lighting Company, who came in contact in the dynamo room at the works, with a current of a force of about one thousand volts (considerably less than it is proposed to employ in the execution of criminals under the new law), and was instantly killed. The other was that of an Italian fruit seller, who, while engaged in clearing out the gutter of an iron awning which leaked upon his stand at the curb, during a severe storm, touched an electric light wire and was also instantly killed.

— By will of the late Alonzo Clark, M.D., LL.D., it was placed in the power of the faculty of the New York College of Physicians and Surgeons to bestow a scholarship, with an income of about nine hundred dollars a year, for the purpose of promoting the discovery of new facts in medical science. This has been bestowed for three years from October 1, 1887, upon T. Mitchell Prudden, M.D., of New York City.

— A coroner's jury has held for the grand jury, for criminal negligence, one Carl Olsen, in whose family a young woman recently died of typhoid fever. Both Olsen and the patient were believers in the "faith cure," and refused medical attendance.

Miscellany.

DR. I. MINIS HAYS RETIRES FROM THE EDITORSHIP OF THE MEDICAL NEWS.

WE regret to learn that Dr. I. Minis Hays, who succeeded his father as Editor of the *American Journal of Medical Sciences*, and who has been identified with the *Medical News* as its editor since its establishment under its present form and title, is about to retire from the editorship of this weekly medical periodical. We are sure the readers of the *Medical News* will share these regrets, for Dr. Hays has been a most faithful and admirable medical editor.

The *Journal of the Medical Sciences* will continue to enjoy the advantage of the valuable services of its present editor. Dr. Hobart A. Hare succeeds Dr. Hays in the editorial chair of the *Medical News*.

COEXISTENCE OF DIABETES IN HUSBAND AND WIFE.

AT a meeting of the *Société Médicale des Hôpitaux* of Paris, on July 26th, as we learn from the *London Medical Recorder*, Dr. Debove presented a communication on the comparatively frequent existence of diabetes in husband and wife at the same time. In a series of fifty cases which had come under his observation, this had occurred five times. A similar coincidence had been noted by M. Lécorché, who thought it might be explicable either by similarity of diet, or by both patients sharing each other's anxieties. M. Debove, however, asks whether the fact is not suggestive of contagion, but, till more facts are accumulated, he refrains from formulating any theory on the subject. In the discussion which followed, instances of the coincidence in question were cited by Drs. Rendu, Gaucher, Letulle, Labbé, Dreyfous, and others.

PRE-CANCEROUS CONDITIONS OF THE TONGUE.

IN a paper read before the Harveian Society of London (*Illustrated Medical News*, March 30, 1889, and *Edirburgh Medical Journal*, September, 1889), Mr. Butlin gives the result of his experience on the above subject. His conclusions are under three heads :— (1) The proportion of cases of cancer of the tongue in which there is a preceding well-recognized diseased condition. On this point the result is that of fourteen cases observed by himself, "more than seventy per cent of them had suffered from a pre-cancerous condition, some form of leucoma, or chronic superficial glossitis." (2) The relative importance of various pre cancerous conditions. On this point Mr. Butlin gives as his opinion, "that the most dangerous condition is that in which the leucomatous areas are very thick and watery." (3) The question of the early and free removal of pre-cancerous conditions. Mr. Butlin's remarks on this head resolve themselves mainly into a recommendation to remove pre-cancerous affections of the tongue freely, if at all, — in other words, to treat such conditions as if they were really malignant, and not merely suspected.

MISAPPLIED PHYSIOLOGICAL INGENUITY.

THE *Medical Press and Circular* finds in an Indian contemporary some curious instances of misapplied ingenuity on the part of certain habitual criminals in that country. The discovery on a prisoner of a heavy leaden bullet, about three-quarters of an inch in diameter, led to an inquiry into the object to which it was applied. It was ascertained that it served to bring about the formation of a pouch-like recess at the base of the epiglottis. The ball is allowed to slide down to the desired position, and it is retained there for about half an hour at a time. This operation is repeated many times daily until a pouch the desired size results, in which criminals contrive to secret jewels, money, etc., in such a way as to defy the most careful search, and without interfering in any way with speech or respiration. Upwards of twenty prisoners at Calcutta were found to be provided with this pouch formation. The resources of the professional malingerer are exceedingly varied, and testify to no small amount of cunning. The taking of internal irritants is very common, but would-be in-patients very frequently overshoot the mark and render recovery impossible. Castor oil seeds, croton beans, and sundry other agents are employed with this object in view, and the medical officers of Indian prisons have to be continually on the lookout for artificially induced diseases, which baffle diagnosis and resist treatment. Army surgeons are not altogether unfamiliar with these tricks, but the British soldier is a mere child in such matters compared with the artful Hindoos.

FIFTEENTH ANNUAL SESSION OF THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THE Mississippi Valley Medical Association met in its Fifteenth Annual Session, September 10th, 11th and 12th, at Evansville, Ind., the Crescent City of the Ohio. Dr. A. M. Owen, was chairman of the committee of arrangements. The President of the Association, Dr. George F. Cook, of Indianapolis, presided over the meeting. He waived his right to make a presidential address, in view of the amount of scientific work to be done, as the programme showed ninety-eight papers to be read. The majority of these were read during the three days' session, though the time for discussion was rather limited. Much time was saved by grouping papers on kindred topics, and discussing them together.

The election of officers resulted as follows: *President*, Dr. Joseph M. Matthews, of Louisville, Ky.; *First Vice-President*, Dr. E. R. Earley, Ridgeway, Pa.; *Second Vice-President*, Dr. T. B. Harvey, Indianapolis, Ind.; *Permanent Secretary*, Dr. E. S. McKee, Cincinnati, O.; *Treasurer*, Dr. C. F. McCaban, Chattanooga, Tenn.; *Chairman Committee of Arrangements*, Dr. I. N. Bloom, Louisville, Ky. Louisville was chosen as the next place of meeting; time, September, 9th, 10th, 11th, 1890.

The social features of the meeting were much appreciated. On the evening of the first day a banquet was given in a beautiful grove just out of the city, which was rendered perfect by perfect weather, everything else having been perfected beforehand.

A complimentary concert and ball were given on the evening of the second day.

Correspondence.

POSTURE AFTER CONFINEMENT.

Boston, September 14, 1889.

Mr. Editor, — In confirmation of the rational mode of treatment as given in the paragraph "Position immediately following delivery," in the Journal of the 12th inst., I send you a record of a regular midwife, who has practiced here in Boston since 1851, and whose treatment is just like that one recorded. She has a nurse to her cases only when subsequent illness occurs, otherwise the mother and infant are attended by her once a day, and the remainder of the time by a neighbor or some inmate of the family.

Mrs. Hasenfuss' books record a marvellous success in treatment dating from April 1, 1851, to April 1, 1889, — 7,440 deliveries.

Some of our most renowned men-physicians attended with her to those cases where forceps were needed. All other irregular presentations she manages herself. She has had child-bed fever occur in regular cases only, between twenty and thirty times; no loss by death.

About twenty deaths are recorded from peritonitis or convulsions, and one from placenta prævia; in all these cases she had the assistance of well-known obstetricians.

She herself has borne seventeen children, of whom the youngest is eighteen years old.

Marie E. Zakrzewska, M.D.

— A man in Manchester, N. H., has brought suit for one hundred dollars damages against "Dr. Fritz," for failure to cure him of dyspepsia; the contract price for which achievement was to be fifteen dollars. This sum the patient paid down, but he unfortunately remains uncured.

— Dr. J. W. Owen, over eighty years of age, a prominent physician, well-known throughout Virginia and Maryland, died at his residence in Stephens City, Va., the 15th inst.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 14, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	624	261	25.59	16.22	15.11	2.39	5.09
Philadelphia	1,040,245	—	—	—	—	—	—	—
Chicago	830,000	360	195	33.33	6.44	22.68	2.52	6.16
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	164	63	18.91	25.25	7.93	3.66	3.05
St. Louis	450,000	165	66	17.69	6.06	9.15	3.05	4.27
Boston	413,567	204	98	27.93	9.10	19.11	2.94	5.39
New Orleans	250,000	—	—	—	—	—	—	—
Cincinnati	225,000	108	—	16.56	18.80	7.36	4.60	1.84
Washington	225,000	101	38	25.74	9.90	8.91	5.94	9.90
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	17	7	41.16	5.88	29.40	5.88	—
Charleston	60,145	38	14	23.67	13.15	15.78	—	—
Portland	40,000	17	6	35.28	11.76	35.28	—	—
Worcester	78,292	20	17	45.00	5.00	20.00	—	20.00
Lowell	71,518	32	12	31.25	15.65	21.91	3.13	6.26
Cambridge	65,552	28	13	21.42	10.71	17.85	3.57	—
Fall River	62,647	35	19	28.57	5.72	20.00	5.72	—
Lynn	53,334	17	—	17.64	11.76	17.64	—	—
Springfield	40,731	16	4	25.00	12.50	6.25	12.50	6.25
Lawrence	40,619	16	9	50.00	—	12.50	6.25	31.25
New Bedford	37,253	29	17	29.20	6.90	20.70	6.90	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	6	2	16.66	—	16.66	—	—
Brockton	28,813	7	4	71.40	—	28.56	-	14.28
Chelsea	28,167	11	1	18.18	18.18	9.09	9.09	—
Haverhill	26,058	4	2	50.00	—	50.00	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	5	1	20.00	—	20.00	—	—
Newton	21,553	6	2	—	33.33	—	—	—
Malden	19,774	6	3	16.66	16.16	16.16	—	—
Fitchburg	17,534	7	4	42.84	—	14.28	14.28	14.28
Waltham	17,332	3	1	—	33.33	—	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	4	2	—	—	—	—	—
Quincy	13,728	9	8	11.11	—	11.11	—	—

Deaths reported 2,059: under five years of age 869; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 528, consumption 239, acute lung diseases 129, diarrhœal diseases 322, diphtheria and croup 92, typhoid fever 64, whooping-cough 15, malarial fever 14, scarlet fever 9, cerebro-spinal meningitis 8, measles 3, erysipelas 1. From whooping-cough, New York 8, Chicago 4, Baltimore 2, Fall River 1. From malarial fever, New York 8, Baltimore 4, Charleston 2. From scarlet fever, New York, Chicago, St. Louis and Cincinnati 2 each, Baltimore 1. From cerebro-spinal meningitis, Cincinnati 2, Boston, Washington, Nashville, Charleston, Worcester, and Brockton 1 each. From measles, New York, Cincinnati and Brockton 1 each. From erysipelas, Chicago 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending September 7th, the death-rate was 16.2. Deaths reported 2972: Infants under one year 839, diarrhœa 255, fever 63, scarlet fever 59, whooping-cough 58, measles 40, diphtheria 37.

The death-rates ranged from 13.2 in Leicester to 26.9 in Newcastle-on-Tyne, Birmingham 17.3, Bradford 18 2, Hull 17.6, Leeds 18.8, Liverpool 18.2, London 14.0, Manchester 20.7, Nottingham 16.9, Sheffield 14.8, Sunderland 20 6.

In Edinburgh 12.7, Glasgow 21.2, Dublin 18.6.

The meteorological record for the week ending Sept. 14, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Sep. 14, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.		8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 8	30.21	64.0	67.0	61.0	89		95	92	N.E.		E.	6		2	O.		C.		.00
Monday,.. 9	30.22	62.0	66.0	58.0	94		95	94	N.E.		N.E.	12		17	R.		O.	2.00	.T
Tuesday,..10	30.18	63.0	66.0	60.0	84		89	86	N.E.		N.E.	24		20	O.		O.	0.35	.T
Wednes. ..11	30.12	61.0	64.0	58.0	94		89	92	N.E.		N.E.	24		24	R.		O.	13.20	.30
Thursday,.12	30.17	64.0	66.0	61.0	100		89	94	N.E.		N.E.	24		24	R.		O.	9.50	.40
Friday,....13	30.29	62.0	65.0	60.0	87		89	88	N.E.		N.E.	24		14	O.		O.		.00
Saturday,.14	30.29	65.0	70.	60.0	90		95	92	N.E.		N.E.	6		11	O.		O.	11.10	.44
Mean for Week.																			

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 14, 1889, TO SEPTEMBER 20, 1889.

By direction of the acting Secretary of War, leave of absence for fourteen days on surgeon's certificate of disability is granted Colonel **ANDREW K. SMITH**, surgeon U. S A. Par. 1, S. O. 214, A. G. O., September 14, 1889.

By direction of the acting Secretary of War, First Lieutenant **FREEMAN V. WALKER**, assistant surgeon, is relieved from duty in the Department of Texas, and will, upon the expiration of his present leave of absence, report in person to the commanding officer Jackson Barracks, La., for duty at that station, and by letter to the commanding general Division of the Atlantic. Par. 2, S. O. 212, A. G. O., September 12, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 21, 1889.

BEARDSLEY, G. G., medical inspector, granted six months' leave with permission to go abroad.

RUTH, M. L., surgeon, order granting furlough revoked, and placed on waiting orders.

HUDSON, medical director, **WOODS**, medical inspector, and **DICKINSON**, surgeon, will continue as president and members of an Examining Board for examination of applicants for the position of assistant surgeons in the Navy, at San Francisco, Cal., until June 30, 1890.

OBITUARY. DAVID S. GLONINGER, M.D.

Dr. David S. Gloninger, a well-known obstetrical surgeon, of Philadelphia, died September 13th. He was born sixty-one years ago in Lebanon County, where his father, John W. Gloninger, M.D., was a surgeon, and in 1840 was graduated from the Pennsylvania University, since which time he had been a resident in Philadelphia. During the late war Dr Gloninger was in charge of the hospitals located in the Second Regiment Armory, and in the school-house at Crown and Race Streets. He was also stationed for a while on a gun-boat at Fortress Monroe. It is said he established the German Reformed Mission, from which the present church at Seventh and Oxford Streets was evolved, more than thirty years ago.

BOOKS AND PAMPHLETS RECEIVED.

The Fatality of Cardiac Injuries. By. H. A. Hare, M.D. Reprint. 1889.

Infant Feeding By Charles Warrington Earle, M.D., Chicago. Reprint. 1888.

The Fatality of Heart Wounds. — Part II. By H. A. Hare, M.D. Reprint. 1889.

Antiseptic Obstetrics. By Charles Warrington Earle, M.D., Chicago. Reprint. 1888.

New York Post-Graduate Medical School and Hospital. Eighth Annual Announcement. Sessions of 1889-90.

Monomania. By Clark Bell, Esq. President of the Medico-Legal Society of New York. Reprint. 1889.

The Treatment (not Preventive) of Puerperal Fever. By Charles Warrington Earle, M.D., Chicago. Reprint.

Syphilis of the Nervous System. By H. C. Wood, M.D., LL.D. 1889. Detroit, Mich.: George S. Davis,

State Board of Health of New York, Local Health Service of the State. Extract from the Ninth Annual Report.

Suicide and Legislation. By Clark Bell, Esq., President of the Medico-Legal Society of New York. Reprint. 1888.

Fourth Annual Report of the State Board of Health of the State of Maine, for the fiscal year ending December 31, 1888.

A Case of Loreta's Operation for Stricture of the Pylorus. By T. W. Huntington, B.A., M.D. Sacramento, Cal. Reprint. 1889.

The Effect of the Entrance of Air into the Circulation. By H. A. Hare, M.D. Reprint. Detroit, Mich: George S. Davis. 1889.

How Shall We Deal with the Inebriate? By L. W. Baker, M.D., Member New York Medico-Legal Society, etc. Reprint. 1889.

Eighth and Ninth Inaugural Addresses of Clark Bell, Esq., as President of the Medico-Legal Society of New York. Reprints. 1888-89.

Light Gymnastics for Schools. By F. N. Whittier, A.M., M.D., Director of Sargent Gymnasium, Bowdoin College, Brunswick, Me Reprint. 1889.

Observations in Vienna: The General Hospital; Billroth, Carl Braun, Bandl, and others. By Charles Warrington Earle, M.D., Chicago. Reprint. 1888.

Observations in Chiara's Clinic and the Hospital St. Maria Nuova, Florence, Italy. By Charles Warrington Earle, M.D., Chicago. Reprint. 1887.

The Influence of Sewerage and Water Pollution on the Prevalence and Severity of Diphtheria. By Charles Warrington Earle, M.D., Chicago. Reprint. 1888.

An Experimental Study of Intestinal Anastomosis with some practical suggestions as to a Modified Technique. By A. V. L. Brokaw, M.D., of St Louis, Mo. Reprint. 1889.

On the Healing of Aseptic Bone Cavities by Implantation of Antiseptic Decalcified Bone. By N. Senn, M.D., Ph.D. Attending Surgeon to the Milwaukee Hospital, etc. Reprint. 1889.

The Diseases of Children, Medical and Surgical. By Henry Ashby, M.D., London, M.R.C.P., etc., and G. A. Wright, B.A., M.B., Oxon., F.R.C.S., England. London: Longmans, Green & Co. 1889.

Addresses of President C. W. Earle, Delivered at the Thirty-Ninth Annual Meeting of the Illinois State Medical Society, May 21, 1889. The Responsibilities and Duties of the Medical Profession Regarding Alcoholic and Opium Inebriety.

The Mortality of Acute Lobar Pneumonia, from a study of all the cases of this disease treated at the Massachusetts General Hospital from the first Case in 1822, up to the present day. By C. W. Townsend, M.D., and A Coolidge, Jr., M.D., of Boston.

Cyclopædia of the Diseases of Children, Medical and Surgical. The articles written especially for the work by American, British and Canadian authors. Edited by John M. Keating, M.D. Vol. I. Illustrated. Philadelphia: J. B. Lippincott Co 1889

Die Krankhaften Störungen des Baues und der Zusammensetzung des Menschlichen Körpers. (Allgemeine Pathologische Morphologie) von Dr. Edwin Klebs. O. O., Professor der allgemeinen pathologie und der pathologischen anatomie an der universität Zurich. Mit 79 farbigen abbildunden im text und 47 farbentafeln. Jena: Verlag von Gustav Fischer. 1889.

Original Articles.

GASTRIC NEURASTHENIA.[1]

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In 1878[2] Leube demonstrated the fact that many cases which had previously been grouped under the term "gastric catarrh" were clearly free from catarrh. The stomachs involved were organically and functionally sound so far as the gross results of digestion were concerned. To determine the gastric integrity of such cases he gave the now celebrated test breakfast (Probe frühstich) of beef, bread, and tea, and washed out the stomach during the seventh hour. In each of the special cases differentiated by him he found the digestion perfectly completed within the normal time.

On the other hand, accompanying this interval of normal digestion were the following complaints: congestion of the head, headache, dizziness, palpitation and pulsation of the abdominal aorta. In the intestinal tract itself the patient suffered from belching, pressure, fulness and tenderness in the epigastrium, pyrosis, anæmia, nausea, hiccough, yawning, and alterations of taste.

Secretory neuroses	Irritative forms	Gastroxynsis. Gastrosuccorrhœa.		
	Depressent form	Deficient secretion.		
Sensory neuroses	Alterations of physiological sensations,	Hunger	Increased.	Heisshunger. Wolfhunger. Bulimia.
			Diminished.	
			Absent — Anorexia nervosa.	
		Satiety	Increased. Diminished. Absent.	
	Pathological changes	Feeling of motion and of burning. Nausea. Pressure. Gastralgia. Cardialgia. Gastrodynia. Hyperæsthesia.		
Motory neuroses	Hyperkinesis	Peristalsis and antiperistalsis. Eructation. Belching. Nervous vomiting.		
		Cramps in stomach	General. Cardiac. Pyloric.	
	Hypokinesis	Atony of the stomach, Insufficiency of the cardiac orifice, Insufficiency of pylorus,	Regurgitation or merycismus.	
Vaso-motor neuroses.				

Leube argued that such discomforts must be due either to the irritation caused by certain chemical products of digestion acting peripherally or centrally, or they must be directly called forth by an increased irritability of the gastric nerves to ordinary stimuli. Inasmuch as chemical changes of food require a certain interval for their production, one would not expect the nervous effects until later in the process of digestion, whereas, in Leube's cases the discomforts usually began immediately on eating. Therefore, he believed that they were due to direct mechanical irritation of over-sensitive nerves, and he grouped such cases under the title of *Nervöse Dyspepsie*. He considers this dyspepsia an independent affection, and one that must be carefully distinguished from the nervous phenomena which accompany gastric catarrh, ulcer, cancer, etc.

"We should apply the term nervous dyspepsia," he says, "only to such abnormal cases as present no anatomical obstacle to the assumption that the nervous system, and particularly the gastric nerves themselves, are exclusively involved in the production of the trouble."

Following Leube's paper, there arose an active discussion as to his assumption that the syndrome described by him was due to a local affection of the gastric nerves. It had been previously well-known that gastric crises of varying degrees and kinds were associated with certain central lesions of the cerebro-spinal axis. Working upon the lines suggested by Leube, it was soon found that neurasthenic patients, having no central nervous lesions, were presenting all kinds of gastric phenomena, which were simply the results of nerve-storms sweeping through systems endowed with deficient inhibitory powers. Hence nervous dyspepsia has secured a place in the category of neurasthenic accidents.

Stiller[3] has divided such gastric neuroses into *idiopathic*, *reflex*, and *general* neuropathic types. Inasmuch as this arrangement necessitates considerable repetition, Oser[4] and Glax abandon the etiological basis, and draw upon the physiological functions of the stomach for the classification of the disorders. The arrangement given above, modified from Glax and Oser, seems on the whole to be the most simple.

The time allowed for this paper will not admit of an extended discussion of this classification, and no doubt cases occur to each one of my hearers which readily fall into place in the tabular arrangement without further explanation. I desire merely to describe a few cases which have occurred to myself, and note their position in the list. The first case is one which seems properly to come under the group of sensory neuroses; it is *Anorexia Nervosa*.

Case 1. May, 1884. Mrs. T., a widow, sixty-three years of age. Patient has never been very strong. Had an attack of dysentery one year ago, and is troubled more or less with piles. She complains of great weakness, which comes on by spells, and she has a tired feeling all over. Sleeps well. She has *absolutely no appetite.* She gets out of breath going upstairs, and vomits often. Occasionally has dizzy spells following the vomiting, and some headache. The bowels are pretty regular, but inclined to looseness on provocation. She looks very pale, and dark around her eyes, and has a melancholy-depressed expression. There is no cough. Her chief complaints are weakness, and entire absence of appetite. There is a systolic murmur at the apex of the heart. Forced feeding and tonics gradually restored her to her usual strength after several weeks.

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[1] Read at the meeting of the Association of American Physicians, Washington, D. C., September 19, 1889.

[2] Leube: Deutsche Arch. f. Klin. Med., 1878, p. 98.

[3] Stiller: Die Nervösen Magenkrankheiten, 1884.

[4] Oser: Die Neurösen des Magens, 1885.

January, 1886. Mrs. T. began to complain of numbness and prickling in the tips of the fingers on both hands. The touch of woolly materials was very disagreeable to her. In the following March she summoned me, and complained of three things: the distressing prickling of finger-tips, no appetite, and weakness. She grew gradually weaker and weaker until April 8th, when she became unable to go about any longer, and kept her bed. Temperature and pulse were normal; urine also normal. She lay in bed four weeks, and was fed every three hours on milk, Mellin's food, broths, wine, etc. She gradually lost her sense of prostration; her bowels became regular. Tonic medicines were administered as her stomach would bear them. Her tongue was always red, and never coated. When she first began to walk, her legs were excessively weak, so that she staggered and fell against articles of furniture. She could not lift her feet, but hitched them along. In May, 1886, I tested the knee-jerk, and found that it was absent. Under prolonged use of massage, forced feeding, and tonics she slowly regained her usual health, and numbness and prickling of fingers-tips almost disappeared. During this entire illness she never complained of anything except repugnance to food, weakness, and prickling of finger-tips.

August, 1889. Patient applied to me again on account of poor appetite. When she entered my office she looked so pale and wan that I thought she would faint away. She said her appetite had been failing for six months, and since hot weather set in it had gone entirely. There were days when she would feel as well as ever, except for weakness and absence of appetite. Sometimes she would taste nothing all day long until evening, when she would force herself to take a teaspoonful of Murdock's food. She has been able to go about the house at will, and she had particularly noticed that during the spring she was able to walk up two flights of stairs from her dining-room without palpitation or shortness of breath. Since her appetite left her completely, she has lost flesh and grown very nervous. A very little excitement will prevent her from sleeping. Tongue is red, and has no coating; its edges are sore with canker spots. The patient has no nausea or vomiting, however, and food when eaten does not distress her. It apparently digests all right, although, as I have previously noted, her bowels are inclined to looseness if she indulges in fruit or indigestible food. At present her bowels are regular. She complains of no belching, no eructations of gas, and no acidity in throat. The urine was found normal. The murmur of the apex still persisted, but was very faint, and the action of the heart was otherwise normal. She was put upon tonics and forced feeding — a teaspoonful of some kind of food every fifteen minutes.

We have here the history of a woman of feeble constitution and a small fund of reserve energy, who digests her food without any consciousness of the process, and whose bodily functions are practically normal in every way except that she suffers at times from an absolute anorexia. The term anorexia nervosa was originated by Sir William Gull, and indicates that loss of appetite is the chief and characteristic feature of the case. J. Matthews Duncan[5] says:

"A good example is one of the most ghastly spectacles you will meet with in practice, but the sadness of the picture is relieved by the fact that they all recover and recover completely. I dare say the disease occurs in men but I am not aware of a case. The patient loses appetite and becomes emaciated. The catamenia cease, and, if the woman is married, fecundity is arrested. The bowels are very constipated, the stools dry and hard. There is no increase or desire for attention and sympathy, on the contrary the patient is rather inclined to reserve and seclusion. The patient makes little or no complaint, it is her friends that complain for her. There is no noticed weakening of the mind. There is great desire for exercise, especially walking exercise; the patient has a degree of festination and does not get tired, does not want to rest. Here you recognize a disease quite different from hysteria and neurasthenia."

For cases of this character Wiessner[6] recommends the *gavage* of Dujardin-Beaumetz. He employs a short rubber tube which reaches just below the cricoid cartilage, and is attached externally to a bottle or funnel containing the liquid food. The tube is easily introduced, and, although it occasions some retching at first, the patient soon becomes accustomed to it. On removal, the tube should be tightly pinched to prevent any of its contents from dropping down the larynx and trachea. The food should be liquid and should not be introduced too rapidly, or it will excite attempts at vomiting.

Wiessner figures that about 100 grammes of albumen, 150 grammes of fat, and 300 grammes of carbohydrates are a sufficient amount of daily nourishment. Accordingly he mixed up 2 litres of milk, 60 grammes of butter, 6 eggs, 100 grammes of sugar and warms them while stirring. He give a third of this amount three times daily. He says the patient soon finds she can digest her food and she is encouraged to eat for herself.

The next three cases I classify under the term *Vomitus Nervosus.*

Case II. Miss S., began at two years of age to have sudden attacks of vomiting, in which she expelled a quantity of bile, and then recovered. She had three attacks at that time in three months, and from then to the date of her death she was subject to similar seizures at irregular intervals. Her mother always called them bilious attacks, and said that they were most frequent in the fall of the year and after the first cold snap. The mother always expected an attack when the child appeared extra well and vivacious, and it usually came the next day. The vomitings generally lasted twenty-four hours, and then it took a week for the child to recover her strength.

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[5] J. Matthews Duncan. The Lancet, May 18, 1889.

[6] Wiessner: Nervöse Dyspepsie. Inaugural Dissertation, Berlin, 1888.

She had scarlet fever at six years of age, and it was ushered in by a violent attack of vomiting and muscular twitchings. Subsequently the measles were similarly introduced. She broke her arm during her sixth year, but had no serious disturbance with it.

At eleven years of age Miss S. had a slight attack of St. Vitus dance, and was removed from school for two years by advice of her physician. The menstrual flow was established at thirteen years of age, but it had been preceded for six months by a peculiar pain in the abdomen, which disappeared when the menses began.

As Miss S. approached the age of twenty she began to develop a new symptom in association with her so-called bilious attacks. Whenever nauseated, she would experience excessive muscular twitchings of the entire body, which, increasing in energy with the progress of the nausea and vomiting, would finally be sufficient to throw the body all over the bed. The contractions were never tonic. There was no opisthotonos or prolonged tension of any kind, but simply a violent commotion of the muscles, which was not attended by any pain, but was uncontrollable by the patient. When seen in such an attack by the writer, the patient was apparently perfectly calm mentally and in full possession of her senses, without excitement of any kind, and she usually tried but in vain, to exert restraint upon the bodily movements. There was no hysterical mental phenomena whatever. There seemed to be merely a loss of inhibitory power and the muscles ran riot. These same twitchings occurred on ship-board during sea-sickness.

In the fall of 1882, when Miss S. was twenty-two years of age, she began to have severe headaches which gradually increased in frequency until the spring of 1883, when they were merged into one steady ache. The patient was naturally of a very dark complexion, but at this time she lost flesh, became very sallow, and was prostrated by any ordinary effort of exercise, and was very despondent. She was treated during the summer by Chapman's ice bags to the spine, prolonged hours of rest in bed, and general tonics, and gradually recovered her flesh, strength and good spirits. During the fall and winter she was apparently perfectly well.

January 1, 1884, I was summoned, and found her in bed with intense headache and slight twitching of the arms and legs. On the next day vomiting began, and the twitchings were so violent that morphine (one-eighth grain), was administered to stop them. Two subcutaneous injections of morphine per day were all that were required. The bowels were constipated but were relieved by aloin. No food was retained by the stomach. Patient after vomiting some time complained of intense burning and rawness in the throat and stomach. The tongue was sore and the mouth dry. Improvement set in on the fourth day and she began to eat on January 6th.

January 9th. Found her better of other troubles, but her tongue was very sore with canker spots along its left border. The left half of tongue swollen, tender and very red. This swelling, redness and soreness, subsided in a few days under local washes.

January 13th. She ate a piece of brown bread and took some beef tea. She soon began to vomit, and passed through her previous distress again. The vomitus consisted of thick, viscid mucus, stained with bile. Stomach was painful and tender to pressure. Evening temperature was 100.8° F. Pulse 100.

January 14th. Temperature 99.6°, pulse 96. Gradually recovered from this attack until January 27th, when she had a third, which lasted a few days. She was fed by the rectum for three days during this attack. She enjoyed exceptionably good health during the following summer and fall.

November 12th. Miss S. started on her last illness at twenty-six years of age. She was seized with an intense headache, loss of appetite and malaise. On November 15th vomitings and twitchings began. She vomited once an hour, or oftener, for thirty-six hours. One-quarter of a grain of morphine was given every four or five hours. There was occasional hiccough, distress in stomach, with burning and dryness of the mouth, tongue and throat. The headache persisted, and the eyes became bloodshot. The micturition caused trouble during one night, but afterwards occurred naturally. The epigastrium grew very sensitive and the face sallow.

After the vomiting ceased, she was fed on teaspoonful doses of Mellin's food and milk, which amount was gradually increased as the stomach bore it. Dejections were obtained by enemata, but caused prostration. She seemed to be gaining slowly but steadily until December 2d, when all the regular symptoms began again without any discoverable cause. She took breakfast at 4 A. M., consisting of ten teaspoonfuls of Mellin's food and one teaspoonful of London beef essence. At 5 A. M., severe colic ensued, and lasted several hours, and then the vomiting, etc., began.

December 3d. Same story of vomiting. Morphine, one quarter of a grain, subcutaneously every three hours. Pulse 68.

December 4th. Pulse 120, and weak. Temperature below normal. After violent attacks of retching there are occasional streaks of red blood in the vomitus. Patient had a few chilly spells.

December 5th. Stopped everything by the mouth. Gave two ounces of milk and two teaspoonfuls of brandy every three hours by the rectum.

December 6th. Vomiting beginning to diminish in frequency. Patient is occasionally flighty in her mind. Menses appeared. Pulse 140, temperature 97° F. The mother says this is the most persistent attack of vomiting that Miss S. has ever had. The longest previous attack lasted fifty-two hours and the patient is already upon the fourth day of vomiting now. She takes five-sixteenths of a grain of morphine every five or six hours, according to her symptoms, this produces sleep for about three hours, when she becomes restless and begins to vomit in about six hours. She does not complain so much of acidity and burning in the throat and beneath the sternum as formerly. She looks very emaciated; the eyes are sunken, hands cool, the tongue is slightly coated. The epigastrium is tender in the median line, but there is no tenderness along the border of the liver. There is no abdominal distension. There is occasional hiccough but not much twitching. Patient does not complain of thirst and asks for nothing to drink or eat.

December 7th. Patient lay like a log with her eyes closed all day. No nausea, no suffering, no talk. Passed her water at 5.30 P.M., for the first time in twenty-four hours. Morphine was reduced during the day. She vomited only once, a mouthful, at 6 P. M.

December 8th. Pulse 130. Lies passive most of the time. Asked for food once. Can be easily moved. She was fed every three hours with about three teaspoonfuls of prepared milk.

December 9th. Still very quiet and apathetic. Yesterday there was noticed an offensive odor from her body, and it was discovered that her beef injections were becoming putrid. The bowel was also inclined to be irritable and reject the enemata.

December 10th. Took a small amount of milk and Mellin's food by the mouth every fifteen minutes for two hours, and then waited two hours, then food as before: appeared to bear the food well. She was fed continuously by the rectum all this time. Morphine was withheld for nine and one-half hours to-day. Patient then grew restless and cried, and was very excited for a short time.

Up to this date nothing abnormal had been discovered in the urine, though it had been frequently examined. It now began to smell ammoniacal, and contained a sediment of pus, and there was a marked trace of albumen. Her temperature was 98.5° F. It is fair to add that Prof. E. S. Wood analyzed the urine on December 12th and found alkaline. Specific gravity 1022. Sediment of pus, blood, triple-phosphate crystals, muscular fibres, fat, few epithelium cells (bladder or vaginal), and few dumb-bell oxalate of lime crystals. The muscular fibres showed that the urine was contaminated by leakages from the rectum, although the nurse took all possible precautions in collecting it.

December 12th. Urine is growing scanty in amount. Morphine was reduced to one-quarter grain in twenty-four hours.

December 13th. Passed a good night. Took six ounces of milk and Mellin's food by the mouth in twenty-four hours; also about twelve ounces of the same by the rectum; also three teaspoonfuls of brandy in each enema every three hours. Pulse weak, 104. At 1 P. M. pulse very weak, 104. She could not be aroused to reply. She swallowed food with difficulty. Allowed it to run out of her mouth. The breathing was very quiet.

In consultation with Dr. David W. Cheever, we injected one-twentieth grain of strychnine under the skin and gave a brandy and coffee enema.

She sank gradually, and died at 7.30 P.M.

The autopsy was made by Dr. W. F. Whitney, Curator of the Anatomical Museum, Harvard Medical School, who has kindly furnished me the following report:

"*Autopsy*, December 14, 1884, sixteen hours after death. Body of a slight girl, much emaciated, rigor mortis present, and lividity of the dependent parts.

"Skull: Thin, especially from absence of diploë. A slight protuberance on the left side near the groove of the anterior cerebral artery, but no corresponding depression on the surface of the brain. In the right temporal region at one point the dura mater had apparently disappeared and the bone beneath was slightly crumbling, but there was no increased redness about the edges nor any change in the contiguous surface of the brain. Considerable thin, watery fluid flowed from the surface of the brain, and the meshes of the pia were distended with it. Vessels of the pia engorged. Substance of the brain moist and pale, otherwise not abnormal.

"Heart normal in size; valves normal. Muscular substance slightly granular.

"Lungs did not fully collapse. Lower and posterior parts dark and red, distended. Watery fluid mixed with air flowed from the cut surface.

"Spleen small, follicles distinct.

"Stomach: Marked reddening of the inner surface with minute hæmorrhagic points. Mucous membrane very thin.

"Intestine normal in appearance.

"Mesenteric glands normal.

"Liver: Periphery of lobules yellow and opaque. Numerous large, fat drops of varying size in the cells.

"Pancreas normal.

"Kidneys slightly enlarged, firm. Abundant blood in the pyramids. Cells markedly granular, here and there an occasional fatty one. Slight increase of intertubular tissue.

"Supra-renal capsules normal.

"Ovaries: In the right was a cyst as large as a peach-stone, with smooth inner wall. Left ovary elongated, firm, and contained a small corpus luteum.

"Bone marrow normal.

"Diaphragm: Numerous fatty, degenerative fibres. External and internal intercostal muscles extremely granular, striations lost, and every fibre more or less fatty.

"The diagnosis is atrophy of the mucous membrane of the stomach, but this is far from well-marked. A very slight interstitial nephritis, but in itself of little account. The slight œdema of the brain had probably occurred at the very end in connection with the slow manner of death.

"The fatty degeneration of the respiratory muscles is undoubtedly a marked factor in the cause of death. Whether it can be placed as an original cause or one that has supervened on the persistent vomiting, future cases will have to decide."

In this case we have the history of a highly educated young woman, who was very active and prominent in her social circle and in the affairs of her church. She had had no severe diseases since childhood except the one history of the gastric attacks and their associated phenomena. The urine was frequently examined between 1884 and 1886, and always proved normal until a few days prior to her death, when it contained a trace of albumin but *no casts*. Moreover, at that time it was contaminated by the leakage from the rectal injection of albuminous substances. The slight organic change in the kidney, described by Dr. Whitney, was not sufficient to account for the case; moreover, the heart was perfectly normal in size. We should have expected some cardiac hypertrophy if the interstitial nephritis had been extensive or of long duration. Therefore, I have classified the case among those of purely neurotic type. The father of Miss S. informed me that he had suffered with indigestion and gastric discomforts all his life, and that these troubles were especially conspicuous during his youth. An aunt of Miss S. had been an inmate of an insane asylum.

Case III. Miss Sh., twenty-two years old, dark complexioned. Very active society girl and very devoted to painting. Complained of headache, malaise, and loss of appetite during the spring of 1888. Early in the summer her parents took her to the seaside, and later went with her to the White Mountains. I first saw her on September 19th, when I found her in bed complaining of a severe headache, poor appetite, constipation and weakness. She also had begun to speak of nausea. Her temperature, pulse, and urine were normal. At first I endeavored to give her stomachic sedatives and regulate her food. In a few days she began to vomit and the vomitings gradually increased in frequency until all efforts at feeding by the mouth were abandoned and rectal enemata of milk and Mellin's food and brandy were used. She was fed exclusively by the rectum for three weeks, but still continued to vomit. The vomitus consisted of a thin mucus stained with bile. After vomiting a short time the patient began to complain of an intense burning along the entire œsophagus and great distress in the epigastrium. This burning was increased by the vomiting and seemed to occasion more suffering than the headache, which was almost constant. She could not bear the light of day and her room was kept dark. She exhibited no mental excitement but was ordinarily calm and obedient. Her abdomen was retracted during the entire attack. She never had any tympanites. Her skin, which at first was soft and velvety, became dry and parchment-like, and she emaciated to skin and bone. Pads were necessary about her body to prevent bed-sores. She also complained of muscular soreness, especially about the neck, and the nurses were obliged to use great care in turning her. She was also tender to pressure over the abdomen. At times her urine was very scanty and was passed only once in the twenty-four hours. It was examined frequently and never contained albumin.

October 4th. I began to give her subcutaneous injections of morphia which was continued until her stomach became quiet. As the vomiting diminished she was fed at first on rice-water and then on small quantities of more substantial food. She gained very slowly, and was not strong enough to be moved to her home until November 15th. At this time a porter took her in his arms and carried her to her compartment in a sleeping-car, as she was not yet able to stand upon her feet. During the ride to Philadelphia that night she began to vomit again, and I was told that the stomach was refractory for several days after reaching home. At present she is well enough to be about, but is not considered as strong as she was before her long illness.

Case IV. Miss D., forty-three years old, very dark complexion, black hair, sallow skin; white of eye clear, however. She has always been subject to bilious headaches. During the summer of 1888 she had an attack of vomiting, which made her very ill for several weeks and necessitated a number of consultations. In the following September I saw her for the first time, and she was still feeling weak. A young niece in her charge was one day seized with convulsions, which were followed in due time by an eruption of measles. The aunt was, of course, anxious and worried about the child for a few days. As soon as the benignity of the measles was established the aunt went to bed. Her appetite left her and the old nausea came back. She did not vomit, but she ate very little for a few days in order to avoid vomiting.

I have had one or two other cases of this type of vomiting, but they presented practically the same features as those described above.

In Sajous' *Annual*, 1888, page 333, Dr. W. H. Thompson refers to two cases in his own practice which resemble my own. He says:

"In this connection the editor may mention two cases of vomiting of intensely acid matters in two female patients, each under thirty years of age, and which exceeded in severity any cases of vomiting that he had ever had to deal with. Both were of highly neurotic families, the first having an insane sister and a dipsomaniac brother; her mother died also in an epileptic fit. The second has a very extensive history of nervous diseases on her mother's side, including three cases of paralysis agitans, and one, an uncle, died of bulbar paralysis. The patient herself is greatly troubled with attacks of pruritus. After every other means recommended for the arrest of vomiting had been unavailingly tried in each case, they both had the affection completely checked by hypodermatic injections of morphia, which, however, had to be repeated in full doses; in one case for two days, in the other for five."

There are certain conclusions to be drawn from the above cases:

(1) All the women whom I have treated for this type of vomiting have been of a *dark complexion;* some of them were pronounced brunettes. I have never had a patient of this class with red hair.

(2) My patients have not been of the ordinary, so-called hysterical temperament. They were all calm and self-controlled, even during the severest suffering.

(3) Feeding by the mouth was abandoned in every case, and rectal enemata were necessary.

(4) None of the drugs which are usually potent in soothing a nauseated stomach were of any avail in these cases. They all seemed to increase the frequency of vomiting, because they necessitated giving something by the mouth. Morphine was the only drug which I have found to be of any service. This remedy I have given subcutaneously, and have regulated the size and frequency of the dose by the exigencies of the case. With patient No. II, the morphine nearly always caused vomiting within two minutes of its administration but no further trouble. This drug not only controls the vomiting but it also abates the other discomforts. I do not know whether it shortens the illness or not. It has seemed to me that this class of cases run their course in spite of all medication until some hidden nervous impulse has exhausted itself. To illustrate, I would refer to a certain type of alcoholic impulse. Some men lead abstinent or temperate lives for months at a time, and then start off suddenly upon a prolonged drunk. They will drink until satiety is obtained, and then they become good citizens again until another alcoholic energy is generated. By conserving the strength, however, morphine may contribute materially toward recovery. Case IV could not take morphine on account of its unpleasant effects, and no other drugs did any good, so she simply lay in bed and vomited until her nerve-centres were satisfied. Her strength was sustained by nutritive enemata.

(5) The vomitus of Cases II and III was very acid, and caused great discomfort along the throat, and particularly beneath the sternum. In Case I the tongue became excoriated and painful, and at one time one side of it was so swollen that the mouth could only be closed with difficulty.

In connection with this hyperacidity it will be interesting to note certain cases of acid vomiting described by Rossbach,[7] and designated *nervôse gastroxynsis.*[8] This trouble affects the upper classes and those persons exposed to great mental strain. It comes on in attacks of one to three days' duration, which may be repeated weekly or every month or so. Anger, trouble, excitement, or public speaking may explode an attack. Each invasion begins with a headache, or with a sharp, gnawing sensation in the stomach, which is then followed by headache; the latter becomes very intense during the height of the attack. The acid feeling in the stomach increases, and may be sufficient to prevent sleep. The patient looks pale, and shows intense suffering. There is pain and sinking-in of the eyes. Finally, the vomiting of an intensely acid fluid begins, which irritates the mucous membrane so that the entire throat feels raw in a few hours. Rossbach says that pyrosis has never occurred in any of his cases, and he emphasizes this fact as a differential point in distinguishing gastroxynsis from dyspepsia acida and Reichmann's cases of excessive gastric secretion.

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[7] Rossbach: Deutsch. Arch. für klin. Med., 1884, 35.

[8] *γαστὴρ* — stomach; *ὀξὺς* — acid.

Rossbach says the best treatment for this trouble is to wash out the stomach thoroughly with warm water. As soon as the acid contents are removed, the headache, etc., subside, and the sufferer rapidly returns to his normal condition. If the attack has been progressing for some time, and a large quantity of acid has been poured into the stomach before the lavage is begun, then the recovery is not so rapid, but the washing produces amelioration. If the patient is vomiting vigorously there should be given him a half-pint of warm water to drink after each act of vomiting, and repeat this until relief is obtained.

The acidity of these cases depends upon the excessive secretion of hydrochloric acid, and is independent of the presence of food in the stomach. It should be distinguished, therefore, from the ordinary *dyspepsia acida*, which is a condition produced by an abnormal fermentation of the food, and in which the acids are butyric, lactic, or acetic according to the ingredients of the food.

It is needless to add that the Rossbach type of gastroxynsis is often a symptom of tabes, and may even precede the appearance of other symptoms. Thus Spier and Clark[9] report the case of a young gentleman who "suffered from intermittent attacks of uncontrollable, very acid vomiting, which would sometimes last for weeks, and yet the usual signs of gastritis were not present." The suspicion that his vomiting might be due to tabes was confirmed by the subsequent development of the characteristic lancinating pains and motor disorders. The etiological values, therefore, must be carefully estimated in each case before it can be classified as a pure neurosis.

There is another condition of the stomach which requires mention at this point, and that is gastrosuccorrhea or the hypersecretion of gastric juice, which was first described by Reichmann.[10] The first case observed by him was a young man, twenty-seven years of age, who was very anæmic, emaciated, and weak, but he had no organic disease of the nervous system. Every afternoon he was seized with severe cramp-like pains in the stomach, which increased during the night, and spread over the entire abdomen. The cramps prevented sleep, and caused an expression of great suffering on the face. There was no distention of the abdomen, and *no vomiting*, but the patient was troubled with pyrosis, great thirst, and an increased appetite. Upon washing out this man's stomach Reichmann always found a large amount of very acid secretion, whether the stomach was empty or full of food. To test the amount of the fluid thus secreted, Reichmann pumped out the man's stomach late in the evening, and washed it clear of everything; then the man took no food or fluid into the stomach until the next morning, when the washing-out was repeated. This experiment was tried four times, and on each morning the stomach contained from 180 to 300 cubic centimetres of a fluid which was very acid, more or less green, and nearly translucent. This fluid was evidently rich in pepsin, as it digested albuminoid matters very rapidly, but the amyloid foods remained undigested. After a breakfast consisting of one cutlet, 250 grammes of milk, and 250 grammes of water, the stomach was pumped out in the third hour, and contained one and a half litres of a dirty-looking fluid, which had an acidity of 0.28 per cent. After an ordinary mixed meal the evacuated contents of the stomach presented a very characteristic macroscopic appearance. The albuminoid ingredients had all been dissolved, while the mass was full of large starch remains, pieces of bread, etc. Riegel[11] says:

"I must emphatically recommend the simple observance of the pumped-out mass, and especially of the filtrate, the importance of which has never before been pointed out. The appearance of the mass will often, without further chemical examination, furnish conclusions as to the digestive power and nature of the secretory disturbance."

This type of hypersecretion of the stomach occurs in two forms: in some patients it comes on periodically, and is then usually associated with some nervous diseases; in other persons the condition is chronic. Jaworski[12] has collected 48 cases of this chronic type in 222 gastric patients, while Ewald has met it 15 times among 600 gastric cases. The best treatment for this complaint is daily lavage, which is usually very gratefully appreciated by the patient.

In studying this subject I have discovered that there is one factor which is common to all the cases described in this paper, and which is the keystone to all the suffering and misery which befall the poor victims of these functional derangements. We notice, namely, that the description of each case of vomitus nervosus, gastroxynsis, and gastrosuccorrhea is accentuated by the excessive amounts of hydrochloric acid present in the gastric secretions.

The standard acidity of healthy gastric juice is placed at 0.2 per cent., though it may vary five hundredths of one per cent. each side of this without harm. Rossbach, however, reports one case in which the acidity was 0.416 per cent., and in two others it was 0.334 per cent. In Reichmann's cases the acidity was 0.25 per cent., 0.27 per cent., 0.28 per cent., and 0.32 per cent. In my own cases no estimate of percentage was made, but the acidity was so great that it caused intense burning of the œsophagus, fauces, and tongue, and this burning was often the chief complaint of the patient. In my first case of anorexia nervosa I was unable to obtain any gastric secretion; but, inasmuch as the tongue was extremely clean and red, and the patient complained of canker, I suspect the gastric acidity must have been above the normal standard.

Leube made no mention of this point in connection with his cases of dyspepsia nervosa, but this deficiency of evidence has been recently supplied by Wiessner,[13] who made a special study of nervous dyspepsia in the wards and laboratory of Prof. Leyden. He found that all such cases presented high degrees of acidity. He reports instances of 0.29 per cent., 0.40 per cent., and 0.312 per cent., and he concludes his thesis as follows:

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[9] Sajous's Annual, 1888, p. 33.

[10] Reichmann: Berl. klin. Wochenschrift, 1882, No. 10, and 1881, No. [illegible]

[11] Riegel: Zeitschrift f. klin. Med., 1886, p. 1.

[12] Jaworski: Wien. med. Wochenschrift, 1886, p. 1673.

"In *nervöse dyspepsie* the motory function of the stomach is intact. The secretory function is abnormal to the extent that a notable HCl hyperacidity is demonstrable during the entire process of digestion."

Jaworski,[14] in an article upon gastric symptoms, namely; objective findings, gives his deductions from the examination of several hundred stomachs in health and disease, and he has evidently reached conclusions similar to mine concerning the influence of hyperacidity in gastric troubles. He lays down the following suggestions:

(1) In great anæmia, and even cachexia with idiopathic gastric trouble, there is a probability of a hyperacidity of the gastric juice.

(2) Vomiting usually occurs with those who have no deficiency of hydrochloric acid.

(3) With great sensitiveness of the epigastrium to pressure, deficiency of hydrochloric acid is not probable.

(4) Excessive thirst points to hyperacid secretions, and is generally combined with mechanical insufficiency or gastric ectasy.

(5) Cramps indicate acidity.

(6) Gnawing at the stomach and false appetite denote acidity.

Arrived at this point, we are met with great difficulties in our study of the physiological mechanism of these cases. We know practically nothing about the specialization of the nerve supply to the stomach. Schiff thinks that sensory nerves run to the stomach through the vagi, because if these trunks are cut one can abuse the pylorus, which is ordinarily the most sensitive part, without the animal showing pain. It is also possible that sympathetic branches from the cœliac plexus also convey sensory fibres to the stomach. We know, however, that the stomach is sparingly endowed with sensory nerves. Its temperature perception is imperfect and localization is very indefinite. If a sound is introduced it is felt in the œsophagus along the thorax, but it is hardly perceived when it touches the inner surface of the stomach. The organ may even be mutilated without much discomfort to its possessor. A case is reported where a piece of the mucous membrane was caught in the eye of the pump and was brought away, but the patient only felt a sense of pulling; the pain was unimportant, and ceased in a few hours. Oser[15] says, "The healthy stomach has properly only two perceptions: the feeling of hunger and the feeling of satiety." Pathologically the sensitiveness of the stomach may be intensely aggravated. What nerves stimulate and what ones inhibit the secretion of the hydrochloric acid, pepsin, mucus, etc., is simply a conjecture. No more do we know the special nerves which govern the rhythmical sequence of the muscular churning, or which dilate the pylorus, or hold it in cramp-like closure. Some physiologists have thought that they could stop all gastric secretions by section of the vagi, but later observations have demonstrated that such section may produce a temporary slowing of the secretion of pepsin and hydrochloric acid, but no obliteration of the same.

We can only say from our present standpoint and by reasoning from analogy, that the secretion of hydrochloric acid in the stomach must be governed by a special system of nerves which have a definite centre of departure. Like other similar systems, these nerves appear at times to become functionally deranged, and perform their work with a reckless disregard of the comfort of their possessors.

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[13] Wiessner: Diagnostische und therap. untersuch. u. d. nervöse Dyspepsie. Inaugural Dissertation. Berlin, 1888.

[14] Jaworski: Wien. med. Wochenschrift, 1886, p. 1873.

[15] Oser: Die Neurösen das Magens, 1885.

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ASEPTIC SURGERY.[1]

BY H. L. BURRELL, M.D., AND G. R. TUCKER, S.B., OF BOSTON.

There is hardly a subject of greater practical interest to surgeons than Aseptic and Antiseptic Surgery. Like all principles of great importance it has passed through many changes; hot-tempered advocates have claimed too much, luke-warm opponents have belittled it.

It seemed to the writers that a contribution of an experimental inquiry into the practical value of the many details that have been introduced in this work would appropriately open the subject for discussion. Surgery has had come to its assistance the science of Bacteriology, and the information which it has furnished and will continue to furnish must greatly aid in the work of practical surgery.

The plan of work which we shall suggest may be changed as new information is contributed, but never will the full benefit of bacteriological science be realized until schools of medicine educate their students in this collateral science and surgeons become familiar, not alone with the principle, but the detail of the work.

The primary aseptic healing of wounds, prior to the advent of antisepsis, was by no means an unheard-of thing. Surgeon after surgeon would boast of how quickly his wounds healed. Fortune favored him by excluding or destroying the germs, no matter what dressing was used. Now came what he considered a new dressing, which he was loath to use from being an innovation. One detail after another has arisen, withstood the crucial test of experience and satire, and again subsided; this will continue, but beneath this evolution of a method that has the fault, as we were told by a prominent practitioner, "of being so complicated and changeable that no one can follow it," rests, as the foundation which has never been shaken, the principles of asepticism and antisepticism; the fact, that pus in a wound means infection by germs and putrefaction. Although it is inevitable that further changes must take place in the development and application of the principle, we have attained surgical possibilities not dreamt of by our predecessors.

It is, of course, well recognized that a surgeon to-day should start with his instruments and materials aseptic, and yet how rarely do we see the surgeon and his assistants carry through an operation to the end aseptically. Constant vigilance and a thorough belief in the necessity of attention to little details is the price of gaining aseptic healing.

The principles of asepticism and antisepticism are perhaps well recognized, but it is the belief of the writers that only in a partial way is it appreciated that sources of contamination exist in operative work in every detail. If one wishes to have this success, he must believe.

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[1] Read at the annual meeting of the Massachusetts Medical Society, June 11, 1889.

Some of these sources we shall attempt to demonstrate.

The labor which would have been necessary to identify species in this work would have been stupendous; the sole idea influencing us, has been to find out whether each detail of the work would stand a bacteriological and clinical test.

The following details will be presented:

The Preparation of the Room for an Operation.
The Toilet of the Surgeon and Assistants.
Preparation of the Operative Field.
The Disinfection of Instruments.
The Disinfection of Sponges, Ligature, and Suture Materials.
Irrigation.
Dressings.

I. PREPARATION OF THE ROOM FOR AN OPERATION.

The subject of micro-organisms in the atmosphere is at the present time receiving considerable attention, and it has been found that their presence in the air of a room depends on the numbers present in the room itself, and that their absence is a measure of cleanliness.

This naturally calls for rooms which may be rendered bacteriologically clean. These are being provided in the newer hospitals.

A room filled with micro-organisms may be a source of infection, and to the private practitioner, who is liable to be called upon at any moment to do a laparotomy in the homes of the wealthier classes or the hovels of the poor, the preparation of the room is a matter of some importance. Directly bearing on this subject may be cited some experiments by one of us on the air of the Boston City Hospital.[2]

It was found that in a series of "Night experiments" conducted in the wards of the hospital, that the air, when the room was free from any commotion, was also practically free from micro-organisms. In another series of experiments, entitled "Before and after Sweeping," it was found that after the first sweeping a large number of micro-organisms existed in the air; on allowing these to settle out and again sweeping, the numbers found in the air were comparatively small; after the third sweeping, very few micro organisms were found. As Carnelly has aptly put it, "a room is a trap for micro-organisms," from which they can only be removed mechanically by the ordinary and extraordinary means of cleaning.

The practical application of these experiments is self-evident. The less commotion that exists in a room, prior to and at the time of an emergency operation, the better. This is quite apart from the usual housewife's custom. The removal of dirt from a room before an operation, would be considered a matter of great importance, but really by sweeping, dusting and the removal of furniture we put the micro-organisms into the air, and thus render our patient liable to infection. Where time can be allowed for the preparation of a room, it should be freed from all movable objects, thoroughly swept, dusted, its floors mopped, walls sponged and only the necessities of the operative procedure allowed to be present in the room; in short, it should be freed from dirt.

In case of an emergency operation, nothing should be disturbed.

II. TOILET OF THE SURGEON AND HIS ASSISTANTS.

The most scrupulous care should be exercised in providing for cleanliness of person and clothing. From our standpoint all that is necessary to consider under this subject is the question of, "How shall the surgeon clean his hands?"

The following experiments were undertaken:

A man's left hand was selected, the nails cut, cleansed, the hand vigorously scrubbed with soap and water, washed with ether and immersed in a 1 to 1,000 solution of corrosive sublimate; it was kept immersed for one hour, removed from the sublimate bath, washed with sterilized water and a layer of gauze placed on the front and back of the hand. These were saturated with sterilized, nutrient gelatine, and over this was applied an aseptic dressing. The man's right hand was then cleansed in the way a surgeon often does before an operation, that is; by cleaning the nails of all visible dirt, scrubbing the hand with soap and water and immersing it for a moment in 1 to 1,000 corrosive sublimate. It was rinsed with sterilized water and treated similarly to the left hand. A half hour later these dressings were removed and cultures made.

The left hand, which had been cleansed in an extraordinary manner by soaking in corrosive sublimate for one hour, was found to be absolutely sterile. The gelantine from the right hand, which had been cleansed in the ordinary superficial way, showed colonies of bacteria, that from the back of the hand being completely liquefied, while that from the front of the hand was peppered all over with colonies.

The result was striking, and demonstrates that the ordinary method of cleansing the hands is ineffectual.

In this connection nail brushes were examined as an almost certain source of contamination in providing for an aseptic operation. Three brushes were taken which were used for general purposes. Bristles were snipped off from various parts of these brushes and cultured; all of them were contaminated with bacteria and moulds. As a remedy, it is suggested that hand brushes should be thoroughly cleansed after an operation and kept immersed in a 1 to 1,000 solution of corrosive sublimate.

The result of the experimentation on hands is certainly striking.

It has long been recognized that corrosive sublimate will destroy all germs in a few minutes, and it certainly is possible, as the above experiments show, to gain asepsis of the hands if the surgeon or his assistants will take the time to gain it.

The superficial manner in which hands are treated is not fair to aseptic work. If it is to be done at all, it must be well and carefully done. The result will follow.

III. PREPARATION OF THE OPERATIVE FIELD.

Wounds, to-day, should heal without pus; and one of the most important aids in obtaining this result, is to render the surface of the skin sterile previous to an operation. Here the fact should never be lost sight of that we have a living human organism to deal with, and not an inanimate object.

A patient approaches an operation with fear which is more or less controlled. Therefore unnecessary details of preparation, which may alarm his mind, should be banished. Proper protection should be taken for a rapid and effective operative procedure. Shock, that well-recognized, but not clearly understood phenomenon, must always be borne in mind, and the patient should be kept warm and dry by suitably arranged rubber cloths. The operative field should be thoroughly cleansed by soap, water, shaving, ether, sterilized nail brush, corrosive sublimate — 1 to 1,000 — and the mechanical removal of dirt, that is, asepsis of the operative field obtained.

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[2] Massachusetts State Board of Health Reports, 1888.

If it is possible to render the hands of the surgeon free from germs, it is equally possible to render the operative field sterile. So, in a measure, the experimentation has demonstrated that sterilization of the skin is simply a question of care and time to be exercised by the operator in cleaning his operative field.

The following experiment was undertaken. The house-surgeon at the hospital kindly prepared a forearm antiseptically, as if it were to be operated upon, in the following manner:

The arm was cleansed with water, shaved, washed with ether, rubbed vigorously with a brush wet with 1 to 1,000 corrosive sublimate, and an aseptic absorbent dressing was applied. This was removed on the fourth day and the successive layers after culture were found to be germ free. This shows that it is quite possible to render the surface of the operative field sterile. But it must be remembered that, while it is possible to remove and to destroy any micro-organisms that may rest on the outer surface of the skin, yet in its follicles, and possibly in its deeper layers, micro-organisms may exist which may be beyond our reach.

As has been said, the human organism may be considered as a vast, antiseptic machine, in which there is a constant conflict, as was pointed out by Virchow, between the cells and micro-organisms. If it were not for this power of the living body, we should cease to exist. The destruction or inhibition of the cells gives to the micro-organisms an opportunity to gain the ascendency. Destruction of the tissue, putrefaction and pus-formation are the results.

The question whether wounds remain sterile after an operation will be considered under dressings.

IV. STERILIZATION OF INSTRUMENTS.

Surgeons have long recognized that instruments are a source of contamination in operations, and while it is customary for the operator to see that his instruments are clean and immersed in carbolic acid, yet this portion of the field of aseptic work has not, in the minds of the writers, received due consideration.

Let us present to you the condition in which we found instruments in a well-ordered hospital, where they were kept in glass-covered cases.

Instruments were taken at random from the operating cases and were cultured with the following results.[3]

Black Handled Scalpel	Hundreds of Bacteria.
Keyes' Director	Completely liquefied.
Ivory Handled Scalpel	Colonies, many hundreds.
S. Curved Catheter	Colonies, many hundreds.
Bull Dog Forceps	Complete liquefication.

A pocket-case of instruments was borrowed from one of the house officers and cultures were made of four instruments. The result was not unexpected. They were found to be covered with germs.

These instruments were not alone non-sterile, but the colonies found were multitudinous. This is the condition in which instruments exist, and what means have we for remedying this difficulty?

The following experiment sheds light on the subject. Instruments were taken from a dish, from which they were about to be used by a surgeon for an operation; they had been cleansed and soaking for an hour in carbolic 1 to 40. The following were the results:

Burr Drill	Bacteria, two.
Metal Handled Knife	Badly liquefied.
Dissecting Forceps	Completely liquefied.
Trocar	Badly liquefied.
Aspirator Needle, prepared for use by ward-master. Needle immersed in 1 to 20 carbolic	Bacteria, two.
Grooved Needle	Bacteria, one.
Bull Dog Artery Forceps	Blank.
Chain Saw	Blank.

Bacteriologically, the instruments from carbolic were nearly as badly off as those that had been untreated.

Unfortunately corrosive sublimate, which is our most valuable germicide, is destructive to instruments, and it was hoped that in hydronaphthol, which is not harmful, we should possess a means of perfectly sterilizing instruments. It was found, however, with instruments which had been placed in an alcoholic solution of hydronaphthol — 1 to 500 — that the knife which remained in one hour was sterile. The bull-dog forceps that remained six hours gave liquefaction from the germs. This was a disappointment, for hydronaphthol ranks high as a germicide, and the desideratum of the surgeon is a fluid which shall quickly sterilize his instruments before an operation.

We have, however, certain methods of sterilization that have long been used in bacteriological laboratories, and have been found efficient for their work, namely, *heat dry or moist, interrupted or continuous.*

Interrupted sterilization, leaving intervals for the spores to develop, is bacteriologically a certain method of sterilizing instruments. But, unfortunately, it is impracticable for practitioners.

Continuous sterilization is quite effectual, and the following experiments of boiling, steaming and baking are interesting.

Instruments were *boiled* continuously in water for two hours and were then cultured, with the following results:

Bull Dog Forceps	Bacteria, none; Moulds, two.
Bull Dog Forceps	Blank.
Metal Handled Knife	Blank.

This experiment shows that in boiling we have a fairly efficient means of sterilization: but it is a well recognized principle in bacteriology that boiling, unless it is interrupted, is not an absolute means of sterilization.

As three instruments in the above experiment were about to be cultured after boiling, they fell upon the floor. The result is interesting, and is as follows:

One Director	fell on the floor	Bacteria, one; Moulds, eight.
Grooved Needle	" "	Bacteria, five; Moulds, twenty-two.
Probe	" "	Complete liquefaction.

In each instance in which the instrument fell on the floor, micro-organisms were found to be present in large numbers. The lesson is self-evident.

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[3] In all cases where the term "liquefaction" occurs in this paper, we mean the presence of species (often putrefactive) which have the power of rendering solid nutrient gelatine permanently fluid.

The effect of sterilization by *steam* was next tried: Instruments were taken from a dish of 1 to 40 carbolic, after they had been used in an operation, sterilized one hour in a steamer and cultured. The results were as follows:

Bull Dog Forceps	Blank.
Wooden Handled Needle	One Colony, liquefied.
Large Probe	One Mould,
Small Probe	Blank.
Bull Dog Forceps	Blank.
Dissecting Forceps	Blank.
Director	Blank.

Again, six instruments were taken from the operating case, and steamed one hour. All showed occasional moulds; several showed colonies of bacteria.

This result is not satisfactory, and shows that the instruments were not perfectly sterilized by steaming.

Superheated steam was not experimented with, but it is claimed by competent observers that it is a rapid, certain method of obtaining perfect sterilization.

Baking was next tried, and while it was clearly recognized before experimentation that heat at 160° C. for a few hours gives certain sterilization, yet doubt was entertained as to the fate of delicate instruments.

Instruments were taken, wrapt in gauze, enclosed in a tin box, placed in a sterilizing oven and baked for one hour at 130° C. All instruments were found to be sterile. Again a number of instruments were taken with similar precautions, and baked at 160° C. for two hours. All were found to be sterile. In not an instance was an instrument injured by the heat.

The sterilization of instruments by heat requires intelligent supervision, and unless this is furnished, and the temperature is not allowed to rise above 150° C., instruments may be injured, as has been found when needles have been baked at a higher temperature.

Conclusions.— Until a proven certain, ready method of sterilizing instruments is presented, the baking of instruments, under the above precautions, at 150° to 160° C. for one hour, is recommended by the writers as a certain method of sterilization. The experimentation with hydronaphthol was not sufficient to invalidate its claimed advantages.

A large number of *needles* were cultured and found to be badly contaminated,— an average of fifteen bacteria per needle being found. This led the surgeons at the Boston City Hospital to discard needle-books, and all needles are now sterilized by baking in short test tubes plugged with cotton-wool for one hour at 150° C. After sterilization the test-tubes are kept, for better protection, in woodern boxes.

V. DISINFECTION OF SPONGES, LIGATURE AND SUTURE MATERIALS.

(*a*) *Sponges.* — Many operators have discarded sponges from operations, and use instead irrigation, or sterilized, absorbent gauze. This has been due to the difficulty experienced by practitioners in securing thoroughly clean sponges.

The sponges at the Hospital are thoroughly washed in running water, again and again, until all visible dirt is removed; they are then placed in a solution of permanganate of potassium, and allowed to remain about twelve hours; they are again washed in water and then immersed in a solution of oxalic acid, for a few hours.

This procedure not alone bleaches the sponges, but renders them very soft; after washing they are stored for use in a series of large stone-ware jars containing a solution of 1 to 40 carbolic acid, from which they are used in rotation.

Cultures were made from four sponges, just ready to be used in an operation. Three of them were sterile; one showed several colonies of bacteria and moulds. It was hoped that steaming sponges would completely sterilize them. A half-dozen bleached sponges were taken, enclosed in gauze, and steamed for one hour. On their removal, it was found that the sponges had shrunken to one-fifth their original size, were hard as chips, and on placing them in water their absorbent power was found to have been completely destroyed.

Bleached sponges were immersed in 1 to 5,000 hydronaphthol and kept for forty-eight hours. Cultures were made of these sponges and they were found to be sterile.

The treatment of sponges by prolonged immersion in carbolic solution, as above recommended, or a solution of hydronaphthol, seems to be the best method at present at our command. It is, of course, a matter of considerable importance to be able to have sterile sponges, and it is believed that while the above method gives this result, in certain operations, for instance laparotomy, it is better to use Elliot's absorbent sponges, which are made by taking a small hank of Berlin worsted, doubling it on itself, and enclosing it in a gauze covering. Thus prepared they may be kept for use indefinitely, and readily sterilized in a corrosive sublimate solution.

(*b*) *Ligature and Suture Materials.*— There is a current opinion prevailing among surgeons that catgut is difficult to sterilize. In almost every journal we are told of a new method for its sterilization.

A great deal of difficulty had been experienced from time to time, in the use of catgut, in the formation of stitch abscesses, and the following methods of preparing silk and gut were put to trial: —

The original silk is boiled for one hour and then wound off on glass spools, with sterilized hands, and kept immersed in a 1 to 1,000 alcoholic solution of corrosive sublimate.

The catgut is prepared in the following manner: —

It is taken from the original bottles, which are filled with carbolic oil, washed thoroughly, the fat extracted with ether, and then with sterilized hands it is wound on to glass spools and immersed in a 1 to 1,000 alcoholic solution of corrosive sublimate. Both silk and catgut are kept for a long time on the glass spools immersed in the alcoholic solution of corrosive sublimate. When needed for use, they are removed from the jar and placed in a ligature bottle specially devised for the purpose.

The original catgut, as taken from the carbolic oil was cultured and found to show organisms in every case.

Eleven specimens of silk and gut were taken from their ligature bottles. The silk was found to be perfectly sterile, while the catgut was found to have growths on all except the smaller sizes.

It is difficult to understand how germs can live that have been immersed in an alcoholic solution of 1 to 1,000 corrosive sublimate, but it is suspected that the hardening of the catgut, prior to complete sterilization, shuts up within the substance of the gut a certain number of organisms, which remain latent until they are placed in living tissues, when the catgut swells, the germs are set free and stitch abscesses result.

Reverdin[4] reports a series of experiments in reference to the sterilization of catgut. He found that crude catgut, which had not been kept in fat to preserve it, which was exposed for four hours to a constantly increasing temperature, maximum 140° C., and then placed for a day in oil of juniper and kept in alcohol, was aseptic. This he had used clinically for eighteen months with perfect results.

V. Boret[5] has cultured the catgut preserved by Reverdin in bouillon, glycerine and sugar at different temperatures, and found that there was no reaction at the end of six weeks. Boret has tried the other methods of sterilizing catgut, and found that bacteriologically and clinically they failed.

Conclusion. Small catgut was found, as ordinarily prepared, to be always sterile; large catgut, never. Silk always sterile.

As catgut is too valuable a material to be discarded, the writers would advise the method of Reverdin by heat, which is bacteriologically a good one.

There is no trouble about sterilizing silk.

VI. IRRIGATION.

The operator of to-day considers that, after using sterile instruments and materials in operating, at the end a flushing off of the operative wound with a germicidal solution is all that is necessary.

For ordinary purposes a 1 to 2,000 solution of corrosive sublimate is efficient for the sterilization of a wound before operation. 1 to 10,000 should be used during and after an operation. Great care should be exercised that none is retained within the wound.

For hydronaphthol, is claimed by competent observers, excellent results; but of this the investigators do not feel competent to judge. We would suggest, however, that taking high rank as it does, as an active germicide, and being non-poisonous and non-irritating, it deserves a trial.

Irrigator nozzles were suspected as a source of contamination. Four glass irrigator nozzles were taken from their rubber tubes and cultured. Two were sterile and two were non-sterile; one of these showed five colonies of bacteria.

Conclusion. Irrigator nozzles should, therefore, be kept unattached and immersed in a 1 to 1,000 corrosive sublimate solution ready for use.

VII. DRESSINGS.

Some specimens of *rubber drainage tubes* were taken from the jar, in which they had been kept immersed in a solution of 1 to 20 carbolic acid, and cultured. They were found to be sterile.

Wounds, to-day, may be divided into aseptic and septic. Operative wounds, if properly treated, are aseptic; accidental wounds, more or less septic. For these two classes of wounds, two distinct dressings are necessary — aseptic and antiseptic.

At our command, we have, on the one hand, antiseptic dressings, such as carbolic, corrosive sublimate, iodoform and boracic acid. On the other hand, aseptic baked dressings.

In the Boston City Hospital boracic and iodoform gauzes are the antiseptic dressings used.

Baked dressings are the aseptic dressings used.

Samples of these dressings were cultured, and the antiseptic dressings were found to be non-sterile; the aseptic were found to be sterile.

The credit of introducing baked dressings, at least in this community, is due to Dr. H. C. Ernst, who. a number of years ago, suggested their trial at the Massachusetts General Hospital.

At the Boston City Hospital they are prepared in the following manner: —

Circular tins of various lengths and diameters, with long, close-fitting covers, are filled with bleached gauze cut into suitable sizes. These cans are placed in a sterilizing oven, and are baked at 150° to 160° C. for several hours.

Clinical experience with baked dressings has shown that they are quite unabsorptive. This is an objection, for what surgeons need is a sterile, absorptive dressing.

Of course an aseptic dressing prepared by steam is not open to this objection, but it is believed that the difficulties in preparing aseptic dressings by the method of steaming and the method of their protection after sterilization, are such that the baked dressings are more practical. We have overcome the non-absorptive quality of the baked dressings by saturating gauze with a 10% solution of glycerine, drying and subjecting it to sterilization.

The presence of the glycerine in no way interferes with sterilization of the gauze at from 150° to 160° C. The result being a *perfect aseptic, absorbent gauze.*

A piece of ordinary baked gauze floats on water, while a piece of the aseptic absorbent gauze will immediately sink to to the bottom.

Dressings were removed on the fourth day from wounds which had been dressed with iodoform and boracic acid gauze. The inner layers of the dressings were found to be thickly peppered with bacteria, and the successive layers outward contained less and less.

It was found by experimenting with baked, aseptic dressings, which had remained in contact with a wound for anywhere from one week to a month, that the inner layers of the dressing, although the wound had healed completely without pus, were filled with bacteria.

Cultivating the successive layers of the dressing from the skin outward, it was found that No. 1 layer, which rested directly in contact with the skin, had a large number of germs. No. 2 fewer. No. 3 still less. Nos. 4, 5 and 6 still less. In the outer layers were found occasional moulds.

The presence of germs in the inner layers of these dressings was unexpected.

Where these germs come from, is not clear. They do not come through the dressing from the outside atmosphere, for it has been found that when the surface of the skin was sterilized, as if about to be operated upon, and an aseptic dressing was applied, it remained perfectly sterile, inner layer and all, at the end of four days. (*Vide* experiment operative field, page 329.)

If the germs do not come from outside sources through the dressing, they must come from sources beneath the dressing.

In antiseptic dressings there are a number of reasons why this result may be expected: First, the antiseptics which are incorporated into dressings, with the exception of corrosive sublimate, are not germicides to be depended upon. Second, that they will inhibit the growth of germs is well known, but existing in the gauze as they do in a dry state, and too often in insufficient quantities, they are not in a condition to gain the results that otherwise might be expected.

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[4] Rev. Med. de la Suisse Rou, June, July and August, 1888.
[5] Ibid.

The deductions to be drawn from the above are very evident:

Where an antiseptic dressing is indicated, we should have in contact with the wound a moist, absorbent dressing, charged with an active germicide in sufficient quantities to be efficient.

This is probably best gained by applying a moist dressing containing glycerine, and charged with corrosive sublimate.

It must be understood that no attempt has been made to identify the germ, found beneath the dressings, *but, it can never be assumed* that the mere presence of bacteria is necessarily harmful until their pathogenic origin is demonstrated.

From clinical experience it has become evident to the writers, that with clean wounds in baked dressings we possess a very valuable dressing. They have been used at the Children's Hospital, in this city, for nearly two years, and by one of us, almost exclusively in our service, as surgeon to out-patients at the Boston City Hospital, and again for four months at the Carney Hospital. They have been used in one of the ward services of the Boston City Hospital for four months, and all have felt that the results were excellent.

Conclusions. — This experimentation teaches the important lesson, that, while it is a difficult thing to attain *absolute* asepticism, yet *practical* asepticism may be gained *by attention to details.*

That we have presented to you a practical way of sterilizing hands, an operative field, the instruments, ligature and suture materials and dressings.

That clinical experience, the touchstone of experimentation, strongly testifies to this, that although an operation cannot be made a bacteriological experiment, yet in the details of the antiseptic dressing of wounds, the principles of aseptic and antisepticism should be carefully borne in mind.

That thorough cleanliness is a preventive of sepsis.

That germicides well applied, in sufficient quantities, will inhibit the development of septic germs.

That the surgeon *can* and *should* operate with thoroughly cleansed hands, thoroughly cleansed instruments, upon a thoroughly cleansed patient.

◆

ON PAIN IN THE SMALL OF THE BACK AND THIGHS.[1]

BY JOHN A. JEFFRIES, M. D., OF BOSTON.

A CONSIDERABLE number of patients complain of pain in the back, or hips, the pain being the leading symptom, often the only one of which the patient is aware. This class occurs in all forms of practice, but tends to collect in the departments for nervous diseases of our hospitals and dispensaries. Owing to the paucity of symptoms and the importance of the diseases represented by these patients, they seem worthy of consideration. I shall endeavor to follow out the steps in diagnosis and point out certain parts of treatment, more especially methods chiefly practised by neurologists.

Naturally the diagnosis is one of differentiation from myalgia or neuralgia. The difficulty rests in the fact that pain in the nerves is merely a symptom, and may be the only one, of the most diverse complaints. Therefore, the only feasible way is to divide the area into parts, and examine them *seriatim* for hidden disease, arriving at a diagnosis of myalgia or neuralgia by exclusion. It is my custom to make the following division:

The spinal column:
Its contents.
The muscles of the spine.
The hip-joint.
The nerves of the lumbar region.
The nerves of the hip.
The kidneys.
The ovaries or testes.
The uterus.
The descending portion of the colon.

The distribution of the pain is of great importance in making a start. It may be diffuse, or run in tracts, or appear at isolated points along the course of a nerve. If diffuse the patient will probably use the flat of the hand in pointing out its place; if local the finger-tips. In character the pain may be constant, intermittent, or paroxysmal; in nature, dull, sharp, shooting, gnawing, burning or throbbing.

Neuralgias, or nerve pains proper, have certain distinctive features. They follow the course and distribution of one nerve or of more than one. The pain may be referred to the terminal fibres, the nerve trunk, or both; or now to one, now to the other.

The pains are not steady but paroxysmal, and often dart in lines up or down. They also tend to spread during the time of most intensity.

The pains are not markedly increased by motion unless it produces increased pressure or stretching. They are often accompanied by paræsthesiæ.

The nerve trunk is generally tender, a condition most easily found at the points of exit — the tender points of Valleix.

The spines over the roots of the nerve are usually tender — tender spines of Trousseau.

There are often small patches of skin, usually near the points of exit, where the intensity of sensibility is increased. A touch produces intense pain, the Faradic brush cannot be borne, a small coin at the temperature of the room may produce a shiver.

Flushing or paleness of the painful part is not rare; also, as Nothnagel has pointed out, there may be a certain amount of anæsthesia not only of the painful region but of the whole half of the body. Some impairment of motion is the rule.

Besides the characters of nerve pains, with few exceptions, but little value can be attached to the description given by the patient.

What constitutes pain, its essence, is unknown; neither the physiologist nor pathologist has yet given an answer. It is clear that the final result must be referred to the higher perceptive centres of the brain: but pain in the periphery rarely arises from disease of the brain. Many authors, as Gowers, has advanced the theory that idiopathic neuralgia is due to a discharge from the ganglionic cells of the spine. The origin of these pains, however, must be classed among the unknown; and for practical purposes, in dealing with this subject, it is much better to assume a definite lesion or source of irritation of the nerves. In a considerable percentage of cases of neuralgia of this region disease of the nerves has been found; in the remainder, the so-called idiopathic cases, there is usually a personal, often a family history of some taint, which it is more natural to regard as cause than result, and which may act in the periphery where it appears to, rather than in the cord. Very likely both are at times affected.

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[1] Read at the Annual Meeting of the Massachusetts Medical Society, June 12, 1889.

The question of reflected pain is probably closely connected with the origin of idiopathic pain. The theory, now undergoing constant extension, is that local trouble, as of the stomach, can produce reflected pain in a distant part, as the head. It is, however, only a theory and does not rest on evidence: all sources of a general cause for both must be excluded before the theory is accepted. I have lately shown, in at least one case, that the blood is altered in such a way as to leave plenty of room for local action.

Beside the group of so-called reflected pains there is another small group where the pain is apparently referred to a wrong part, simply as the result of lack of training. We must not forget that the child seems to practice and to learn by study the sources and interpretations of many of its sensations.

But passing from the nature of pain to its significance — all cases of pain in the region selected may be divided into two classes: the nerve pain and the diffuse pains.

The diffuse pains are due mostly to myalgia, and belong to the group of lumbagoes. If the pain is in the right side of the small of the back the probabilities are that we have a case of lumbago, so-called muscular rheumatism, before us. This probability becomes almost a certainty if there is a history of exposure or trauma, diffuse tenderness of the long muscles of the spine, or of the quadratus lumborum, increased by stooping, and no tender points or cutaneous hyperæsthesia. Under these conditions it is difficult to make a mistake, though the patient is often convinced that he has kidney trouble. Neuralgias are excluded by the absence of the characters of nerve pains. Disease of the internal organs causes bilateral pain, with few exceptions.

Trouble in or about the kidney must, however, be excluded. If inflammatory, there are the fever, deep tenderness best got from in front, and deep boggyness or fluctuation. With a reasonable amount of care in the physical examination danger of a wrong diagnosis is small. The only other trouble liable to lead to confusion is that state of dull pain in the region of one kidney due to local irritation as from a calculus. This pain closely simulates lumbago, but is not so dependent on flexion and extension of the spine; is said to be very sensitive to slight jarring motions as of riding. Inquiry may bring out a history of acute pain due to renal colic, which finally settles the diagnosis.

On the left side all that of the right side holds good, except that we have also to consider the pain resulting from fæcal accumulations near the junction of the transverse and descending portions of the colon. Such accumulations are common, and give rise to more or less pain usually located near the lower left free ribs. Tenderness is less marked than in lumbago, and the pain is relatively but little affected by stooping. The diagnosis may be confirmed by palpation, the patient lying on the back with the thighs flexed. A regular motion of the bowels does not preclude this condition.

When the pain is in both sides of the back the diagnosis is more difficult, and it is always necessary to examine the whole of the region. The bones of the spine should be carefully examined for undue yielding to pressure, for tenderness and irregularities of form. The line and curve of the spine should also be examined, while the patient is stooping, for irregularities, and any signs of rotation noted. If the spine passes muster it is probably sound. Slight or even marked irregularities of the spine are often the result of occupation, and of course found in patients with pain in the back. In such cases the other symptoms are wanting.

Besides the bone diseases of the spine a certain number of cases occur where the patient apparently has lumbago, but careful examination proves the trouble to be in the spine. In these the pain often runs way up, and the history of rheumatism is usually clear. The trouble seems to be really a rheumatic affection of the ligaments of the spine.

Acute kidney trouble may come on with pains closely resembling lumbago and little if any fever or other constitutional symptoms; then the only means of detection is by examination of the urine. Such cases are rare, but I have had one which very nearly escaped my notice in the hurry of a large out-patient service.

Diffuse pain with no special tenderness is very common in the groups classed as oxaluria and lithiasis.

The pains from diseases of the other viscera can scarcely be confused with lumbago. Those of the female genital organs are referred chiefly to the sacrum, are not so dependent on stooping, are dragging in nature and are usually recognized by the patient. Any doubt should be cleared up by a proper examination.

Excess on the part of the male often produces pain across the back resembling lumbago, but in such a case tenderness is not limited to certain muscles, nor does stooping cause so much pain, but rather tends to relieve it. All are familiar with the peculiar facial expression of this class of patients.

It must not be forgotten that lumbago may be the first symptom of one of the exanthemata, especially small-pox. If new growths are at the bottom of the trouble, they should have been detected during the examination.

Having ruled out the obscure causes of pain in the region, we have left lumbago used in its widest sense. Of its pathology we know little. For working purposes I am in the habit of making a division into three groups:

Traumatic lumbago.

Myalgia, so-called muscular rheumatism.

Diseases of the lumbar aponeurosis.

The essential difference in traumatic lumbago is the trauma. The patient has suddenly been seized with pain and impairment of motion after a sensation "as if something had snapped in the back." It is customary to ascribe this to a strain. In the majority, however, the sudden onset is simply the first perception of an attack of myalgia, which very naturally coincides with some unusual motion, and as such offers nothing peculiar. A few of these cases are due to a strain. When this is the case, during the first few days the tenderness is not so diffuse but limited to, or accent-nates in, some small area. Œdema and swelling have not been observed. In the two patients of whom I have notes, the cause was in one lifting a heavy weight, in the other sneezing while stooping over to wash the face in a bucket on the ground.

The myalgias form the bulk of the cases, it may be in only one side or in both, or in the quadratus lumborum muscle. The symptoms have been so fully described that they need not be repeated.

Trouble in the aponeurosis is usually rheumatic or gouty in nature. The symptoms are much the same as in myalgia in the mild cases. As a whole the trouble is much more severe, bilateral, accompanied by fever, and intractable. A distinction where possible must be made on these lines; if quickly cured it was a case of myalgia.

So far we have been dealing with diffuse pain, not limited to the region of a nerve. The more frequent and difficult class of neuralgias remain. The characters of these pains having been pointed out, the subject of diagnosis can at once be taken up. As a diagnosis of idiopathic neuralgia can only be made by exclusion, a method similar to that for lumbago is both quickest and most sure. As, however, a division into lumbar neuralgia and sciatica is insufficient, for purposes of diagnosis it is better to make subdivisions according to the major nerves as follows:

Lumbar Neuralgias
- Posterior branches.
- Ilio-hypogastric. Ilio-inguinal.
- Genito-crural.
- External cutaneous.
- Obturator.
- Anterior crural.

Sacral Neuralgias
- Posterior plexus.
- Sciatica.

Disease of the bones of the spine may produce neuralgia by irritation of the roots of the nerve. Sometimes the pain comes early, when the real trouble may be overlooked. Children have relatively little pain in the back in this disease. As any of the roots may be affected, the pain has no definite seat. The spine should be carefully inspected, especially in children where the ordinary neuralgias are rare. The pain offers some indication of the trouble; it is very susceptible to slight motions and tends to be relieved by extension or lying down. Of course if the deep reflexes are abolished, or even much increased, the case is not one of neuralgia but of some spinal trouble.

Disease of the sacrum is said, as a rule, to pass for some time as a sciatica. Before the necrosis has produced signs on the surface there does not seem to be any way of making a diagnosis except by examination through the rectum. Practically the physician must rely on the constitutional symptoms to give warning, and he must search till something is found.

Disease of the sacro-iliac joint is fortunately rare; it may come by itself or with disease of the sacrum. It frequently passes for sciatica. The pain may be at the joint, in the buttock, the thigh or even the knee. The distinctive points are that the joint is tender to direct pressure, as well as to pressure made on the two iliac bones from side to side.

The disease of the cord which offers most danger of confusion is locomotor ataxia. Pain in the limbs is often a very early symptom and taken for sciatica or rheumatism. The accompanying disturbances of sensation are of questionable value by themselves, since most nerve troubles in the legs have this symptom. A double sciatica is rare, in itself suspicious. The knee-jerk should be examined and also the pupils; if the first is absent and the pupils react to accommodation but not to light, tabes must be diagnosticated.

Meningitis limited to the lumbar region may pass for neuralgia, either in the first stage of acute trouble or later in chronic. The fever should give warning and draw attention to the pain being on both sides, the general spinal tenderness, the increase of the reflexes, the trace of muscular rigidity, the cutaneous hyperæsthesia. Pain is not the only marked symptom. Tumor in the lower part of the cord is to be distinguished on the same lines.

Before leaving the region of the spine psoitis must be mentioned. The trouble is insidious, and owing to the long nerves perforating the muscle may give rise to a lumbar neuralgia before outward symptoms appear. The pains are along the groin and in the surface of the thigh. But it is rare for a psoitis to exist without a set position of the thigh, which is flexed and rotated outwards so as to relax the muscle. There are also the fever and tenderness of the muscle.

Renal colic at times closely simulates lumbar neuralgia; in marked cases the pain is too intense. In milder cases the question is not so easily answered. Drawing up of the testicle, pain along the ureter and tenesmus of the bladder all point to a calculus. But both drawing up of the testicle and tenesmus of the bladder may occur in simple neuralgia. The urine should be examined and inquiries made for previous attacks.

The dull, dragging pains of old uterine-troubles need no note, and the same may almost be said of acute trouble. The pain covers a large part or the whole of the area supplied by the lumbar nerves, a rare thing for a neuralgia. There are also the local symptoms in the organ. The rectum is an occasional source of pain in the sacrum, usually of a dull and gnawing character. Local examination settles the question. For foolish reasons patients are very fond of describing pain which they know is in the rectum as being in the sacrum.

New growths anywhere in the back of the sacrum are liable to cause a neuralgia, either lumbar or sciatic. They must always be borne in mind in intractable cases or in patients at the cancer period of life. The other symptoms are too variable to allow of consideration, and a diagnosis can only be made by finding the tumor. Pelvic exudations may produce the same results.

Troubles in or about the hip-joint still remain to be considered. One of the first symptoms may be pain in either the sciatic nerve, the obturator — pain located at hip or knee joint — or along the groin as stated by Gowers. Pain during childhood in any of these regions calls for careful examination of the hip-joint. In advanced cases simple inspection is sufficient, but in the very first stage it is only by careful inquiry as regards the shape and smoothness of the bones, the tenderness of the joint and slight impairment of motion that a correct diagnosis can be made. In hip disease a limp usually comes before the pain, — a point of considerable value if noted.

In this connection it is well to remember that simple cutaneous neuralgia of the anterior face of the thigh will often produce all the appearances of hip disease. It is recognized by the extreme sensibility of the skin and the absence of physical joint symptoms.

In the adult, arthritis deformans may cause the same pains as hip disease.

Herpes is often ushered in by severe pain, a neuralgia lasting for some time before the skin lesions appear. If the patient describes the pain as burning, or if cramps in the same region are marked, I am always suspicious. A distinction, however, cannot be made until the cutaneous symptoms appear. This is unfortunate, as the physician sometimes gets into trouble for not being omniscient; it is hard for the patient to believe counter-irritation was called for.

Sciatica is so intimately connected with the subject of this paper that it cannot be passed by, though the pain extends well out of the region. It differs from other nerve pains in that structural lesions are more prominent, an organic basis being found in most cases of any duration. With the deeper grip taken by the disease other marked symptoms occur, as pronounced anæsthesia, paræsthesia, atrophy or even paralysis and true trophic disturbance. As a rule the trouble is unilateral, but this is not invariable. If the trouble is severe and accompanied by pronounced symptoms other than pain, it must be classed as a neuritis. The distinction between double sciatica and neuritis limited to the legs must be made on the same lines. If the knee-jerk is impaired there can be no doubt it is not functional. A history of alcoholism or other poisoning points to a neuritis.

Having located the pain and excluded the organic causes of the mischief, the functional causes are still to be considered. It is well to begin by carefully examining the area of pain for local causes, as scars, small tumors, disease of the bones, enlarged lymphatics at the point of exit; also to inquire for any habit which may produce mild continuous pressure, as using a chair which does not allow the feet to rest on the ground.

The diatheses still remain. They probably all act in virtue of the blood being in a pathological state, as anæmia, debility, the gouty tendency, malaria, poisons. Rheumatism is often given as a cause, but if any connection with acute articular rheumatism is implied the word had much better be dropped. According to my figures but few in a hundred cases of neuralgia have had rheumatism. Whole families may be martyrs to muscular rheumatism and neuralgia for generations, and still be exempt from the articular trouble.

Besides the symptoms given as characteristic of nerve pain in general, certain neuralgias of this region are liable to give rise to other disturbances. Ilio-inguinal neuralgia often causes difficulty of motion and impairs the use of the legs. Genito-crural neuralgia may cause drawing up of the testicle and desire to micturate, and Romberg describes a case in the male where the sexual passions were greatly increased. Obturator neuralgia, an early symptom of hernia, may involve the adductor muscles as well as the hip or knee. The peculiar limp and bend due to sciatica is familiar to all, but too closely resembles some of the distortions due to lumbago to be of much use in diagnosis.

Railroad spine and spinal irritation still require notice. In spinal irritation the pain is chiefly up and down the spine, the posterior processes are very tender, and hyperæsthetic spots are frequent on the sides and the front of the body. The diagnosis between this complaint and spinal neuralgia is often one of fancy.

The pains of railroad spine are twofold: those of general lumbago and those of spinal neuralgia, and both may exist at the same time. The diagnosis is based on the history of trauma and the exclusion of other troubles as in ordinary lumbago. Most, if not all cases of railroad spine which suffer from pain in the lumbar region, have been injured there.

Treatment may be divided into three parts: relief from acute symptoms, treatment of the nerves, and treatment of the condition which directly or indirectly induced the trouble.

In the first group we must rely on the analgesics, of which morphine, cocaine, antipyrin and salicylate of soda are the most effective. With the use and abuse of morphine all are familiar; the same is true of cocaine.

Antipyrin or phenacetin given by the mouth, at times work like a charm and are worthy of trial. I begin with a ten grain dose and repeat, and have found few cases where more than three doses were of advantage. Five grains is at times enough. The local application of antipyrin dissolved in water, close to the stem of the nerve is often followed by happy results; dose three to five grains. The chief objection is quite lively burning.

Salicylate of soda is a valuable drug in many cases. Not only is it the first resource if rheumatism really exist, but also is a powerful analgesic in many forms of nerve pain. This action of the drug does not seem to be generally known in our vicinity, but has for a long time been recognized on the Continent. A small dose is often sufficient; thus in the winter of 1886–87 I had in my care an old woman who suffered greatly from pain in the obturator nerve resulting from arthritis deformans of the hip, to whom a dose of five grains taken at night made the difference between one passed in sleep and one in agony.

All are familiar with the acute symptoms from the brain, heart or kidneys, at times induced by this drug, but it does not seem to be as clearly recognized that the prolonged use of the drug is liable to injure those organs. The question has all been gone over in regard to the use of the drug as a preservative for foods.

In the second division we have three natural subdivisions: remedies applied to the surface, electricity, and internal remedies. The use of analgesic preparations applied to the skin is hardly practicable; the area is large, the nerves lay deep, and the dose is unknown. Counter-irritation is of value; the choice of the agent, from a liniment to the actual cautery, depends upon the severity of the symptoms. In pronounced sciatica, fly-blisters are almost inert. This is the place for the cautery; the burns should be superficial, heal in a few days and distributed along the course of the nerve.

Massage is often of value, but should never be employed till all serious trouble has been excluded.

The old household remedy of dry heat is always in place for lumbago and not a few neuralgias. The salt bag, a saucer or a hand-iron are always at hand.

Electricity is undoubtedly one of our best resources if properly applied. Faradism is of use in the form of the brush where paræsthesia is marked or a temporary counter-irritation is desired. For the pain and nerve disease, if any exist, galvanism is indicated. The direction of the current up or down is of no import;

not so with the poles, the anode is the best for simple pain. In neuralgia a large electrode should be placed on the back, and the surface and track of the nerve slowly gone over with the positive pole. No quick motions or breaks in the current are allowable. In sciatica, that is neuritis, a powerful current, fifteen to twenty-five milliampères, will often do good where less is of no use. When strong currents are used, large electrodes are required to save the skin. Strong currents should only be used after trial with weaker ones, and carefully watched. At times, especially in recent cases, they increase the pain, and do harm. As a rule five minutes is enough. I am in the habit of applying the positive pole for three minutes, then inquiring for the painful points which remain and attacking them. The negative pole can often be used with advantage in cases where the positive is well borne. Do not forget the indifferent pole but slide it along from time to time, otherwise a small crop of blisters may result. The applications should be made daily; if nothing is gained in a week there is little hope of a cure.

In muscular pains, lumbago, the current should go straight through the muscle, one pole in front the other behind. My figures seem to show that the cathode and strong current, fifteen to twenty-five milliampères, should be used. The prompt relief often produced is incomprehensible but undoubted. The Faradic bathing does not seem to me so efficient. Lastly, it is as much out of place to monkey with electricity as with a lancet.

Cold, either in the form of ice-bags or some of the volatile sprays, is certainly of value in sciatica. But where feasible the first indication is rest. The method laid down by S. Weir Mitchell, of rest in bed with a hip splint, ice, massage, the cautery and galvanism, probably represents the best the physician can do in sciatica to-day.

As the causes of pain in the region are infinite, a consideration of the general therapeutics would require a volume.

◆

ULTIMATE RESULTS OF OSTEOTOMY AND OSTEOCLASIS.

BY JOEL E. GOLDTHWAIT.
Formerly House Surgeon at Boston Children's Hospital.

THROUGH the kindness of Drs. S. W. Langmaid, E. H. Bradford, A. T. Cabot, H. L. Burrell and H. W. Cushing, now or formerly connected with the Surgical Staff of the Boston Children's Hospital, I am permitted to publish the results of the following cases, in which operations were done by osteotomy or osteoclasis, for the correction of rhachitic deformity of the legs.

In all there are twenty-eight cases, which are reported at least a year and a half from the time of operation. Fifteen were cases of osteoclasis, twelve of osteotomy, and one, a case in which both operations were performed. This does not include all the similar cases operated upon, but it was impossible to trace the others.

In the majority of the cases, where the curve was in the shaft of the bones, osteoclasis was the favorite operation. (This operation was first introduced into use in this country by Dr. A. T. Cabot, in 1879;[1] the instrument used being a modification of that of Rizzoli.) In the cases of knock-knee, and in a few cases where the curve was in the shaft of the bones, the osteotome was used. The method used for connecting the knock-knees was that known as the "Macewen operation," or supra-condyloid osteotomy; in which the osteotome is entered from one-half to three-quarters of an inch above the adductor tubercle on the inner side of the femur, is driven through about three-quarters of the thickness of the bone, the part remaining intact then fractured by manual force, and the leg brought into line. For the details of this, and of the other operations, for the correction of genu varum or valgum, any of the standard works of surgery or orthopedics are referred to.

It is to be remembered that no case is reported which was operated upon less than a year and a half ago; while the average length of time which has elapsed is four years, this period having been allowed for any relapse or return of the deformity.

The operations were done as follows: in 1881, two cases; in 1883, four; in 1884, four; in 1885, four; in 1886, eleven; 1887, up to July 1st, three.

All of these cases were seen recently by the writer, either at the hospital or at their homes, and careful observations made. Tracings of the legs were taken and compared with those taken previous to and immediately after operation (so far as they could be obtained) with these results: Of the twenty-eight cases, twenty-seven did not relapse; one case did. Of the twenty-seven cases, the legs were found to be in excellent position, and in none was there deformity enough to be noticeable. There was also no exaggeration of the normal lateral mobility of the knee-joints.

The almost universal expression on the part of the near relatives was that the legs had grown straighter rather than more deformed since the operation.

Perhaps the present condition of these patients may be better appreciated from the diagrams herewith.

Fig. 1 represents a composite of the tracings of the twenty-seven cases, as seen from the front. These tracings are taken as follows: first, the simple tracing of each case is taken, that is, the child sits upon a piece of paper with the internal malleoli, or knees together, according as it is a case of bow-legs or knock-knee, and with a pencil held perpendicular to the paper, the outlines of the legs are traced. These tracings are then reduced to a common size, and are reproduced till all of the tracings are drawn upon one piece of paper, one over the other. From this what represents the average of all of these is drawn, and is termed the composite tracing.

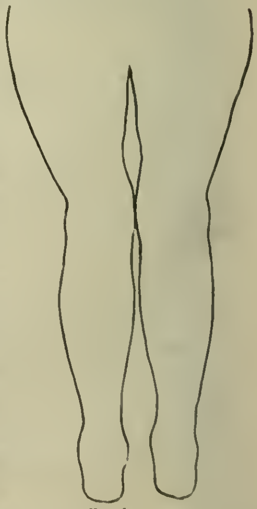

FIG. 1.

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[1] Boston Medical and Surgical Journal, vol. cl, p. 217.

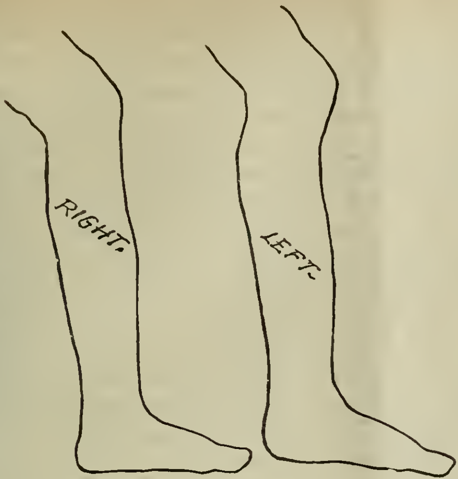

Fig. 2.

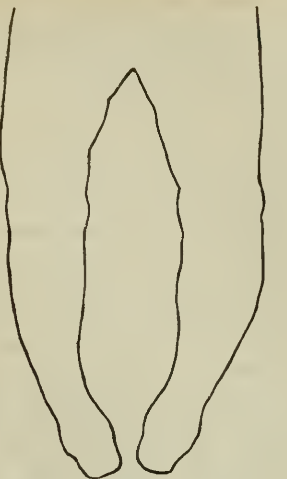

Fig. 3.

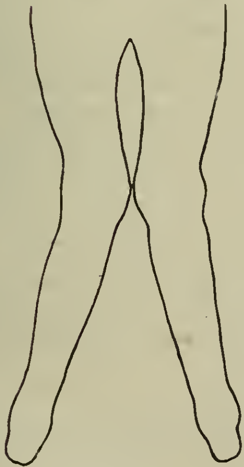

Fig. 4.

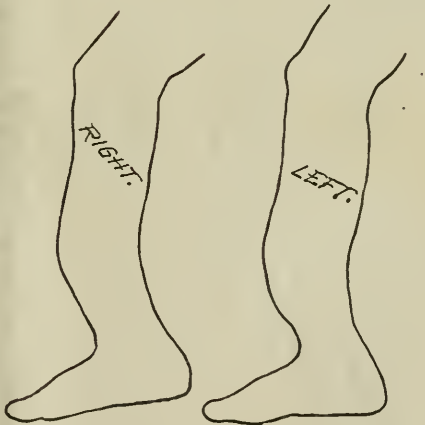

Fig. 5.

Fig. 2 represents a composite tracing of the results in five of the above cases, in which the deformity had been an anterior bowing of the bones of the lower leg. These tracings are taken with the legs lying upon the side.

It will be interesting as well as instructive, by way of comparison, if we have an idea of the condition of these cases previous to operation. (It was impossible to obtain tracings of all of these cases before they were straightened, but those which could be found are utilized in making up the following diagrams.)

Fig. 3 represents the composite of the tracings in ten cases of bow-legs before operation. Of course, among these cases, as well as among the cases of knock-knee, were some in which the curve was very extreme, while in others the deformity was so slight as to render an operation questionable.

Fig. 4 is a composite of five cases of knock-knee.

Fig. 5 is a composite of three cases of anterior bowing of the tibiæ, as viewed from the side.

In the twenty-eighth case the result is not so satisfactory; and in order that it may be fully understood, it will be necessary to go more into detail.

Referring to the hospital records, we find, that in March of 1886, F. B., colored, aged four and one-half years, came to the hospital, presenting the following condition: "rhachitic changes in all of the long bones in the body, clavicles very angular, well-marked rosary at junction of ribs with cartilages, anterior bowing of humeri, anterior bowing of femora, double genu valgum, antero-posterior curve in lower third of tibiæ, very extreme upon the right side. Both feet in the position of valgus, and general epiphyseal enlargement."

The child was operated upon, and in two sittings the Macewen operation was done on both knees, while both lower legs were osteotomized at the point of greatest curve. A double spica, plaster-of-Paris bandage was applied at the hips, and was continued down to the toes, by means of circular bandages.

After a little over two months, the child was discharged from the hospital; and as a tracing of the legs at that time is not to be had, reference must again be made to the hospital records for a statement of the child's condition: "Left leg in perfect position, except a slight lateral bowing of the femur. Right leg straight, except that a slight antero-posterior curve persists at the lower third of the tibia. Union at the latter place not very firm; at points of other operation more solid, though with a slight sensation of yielding especially in the left tibia." The legs were done up in light plaster-of-Paris and silicate bandages, and the child discharged. These bandages were removed several weeks later, and as at that time no further treatment was deemed necessary, the child was allowed to walk about.

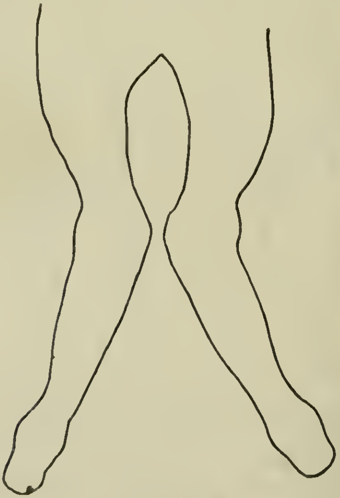

FIG. 6.

As seen a short time ago, there was present a well-marked double knock-knee, with lateral curving of both femora, while the lower legs were fairly straight. Fig. 6 represents a tracing taken at that time.

The process of relapse, according to the mother, was a very gradual one up to a number of months ago, since when, to her knowledge, there has been no further increase in the deformity.

The largest number of bones fractured at any one sitting was six. This, in a child five and one-half years of age, in whom both femora were osteotomized by the Macewen method, while the bones of each lower leg were fractured by means of the osteoclast. The child made a good recovery, and was discharged well, wearing no apparatus, in about two months from the time of operation.

It may be well in passing, to mention the after-treatment which these children received. The legs were done up in plaster-of-Paris at the time of operation and this was allowed to remain on for from one month to six weeks, when it was taken off, and the child discharged. In only one or two cases was any apparatus worn after leaving the hospital.

Another thing which was very noticeable in these cases, as seen recently, was the frequency with which flat-foot was met. In fourteen cases this condition was present in both feet, while in two others one foot alone was affected. In six cases the children walked, "toeing-in" quite noticeably with both feet, while in six other cases it was a unilateral affection.

The first thing which will attract the attention of those familiar with the literature upon the subject will be the age at which the operations were performed, the youngest child operated upon being just two years old, while the oldest was ten years of age. The intermediate cases ranged as follows: From two to three years, three cases; from three to four years, nine; from four to five years, six; from five to six years, two; from six to seven years, four; from seven to eight years, one; from eight to nine years, two; ten years, one. Thus, about eighty-five per cent. of the cases were operated upon under seven years of age, or the average age at which the operation was performed is four years; and it must be remembered that twenty-seven out of twenty-eight cases did not relapse.

In connection with this, it may be of interest to note the ages of thirty other cases operated upon similarly to those mentioned above, but which, because of change of residence, or other apparent reasons, could not be found, so that the ultimate results we are unable to compare: From two to three years, eight cases; from three to four years, ten; from four to five years, four; from five to six years, two; from six to seven years, one; from seven to eight years, one; from nine to ten years, one; from ten to eleven years, one; from eleven to twelve years, one; thirteen years, one. Again eighty-five per cent. operated upon under seven years of age, or an average age of operation of four and three-quarters years.

Referring to the authorities for an opinion as to the operable age in these cases, one finds:

E. Noble Smith [2] in considering operative interference for the correction of the rhachitic deformities of the lower legs, says: "To perform osteotomy upon cases that can be cured by more simple means, is contrary to sound surgical principles, and the frequent performance during the last few years of this operation upon children between four and twelve years of age has called forth strong condemnatory expressions from many surgeons of high repute. . . . Up to about twelve years of age, and even beyond this period, simple curvatures and genu valgum may be nearly always cured by pressure alone."

Ogston [3] says: "Most cases of knock-knee, under puberty, are curable without a cutting operation."

Adams: [4] "Osteotomy should not be performed upon very young children; for them, splints, bandages and constitutional treatment should suffice."

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[2] The Surgery of Deformities, p. 268.

[3] Owen. Surgical Diseases of Children, p. 83.

[4] Ibid, p. 83.

Barker:[5] "Will not operate earlier than the sixth year."

Macewen:[6] "Will not operate on any patient under nine years of age, at least; and he would prefer them to be fifteen years of age or more."

Barwell:[7] "Will not operate before the seventh year."

A. W. Mayo Robson[8] reports fifty-three cases, in which three were operated upon at the age of three years, while the average age was eleven and one-half years.

Chotzen[9] reports the ultimate results of twenty-two cases in which the age of operation varied from fifteen to nineteen years. The ultimate results in these cases were universally good.

At the International Congress in 1884, held at Copenhagen, Macewen[10] reported 1,118 cases, drawn from the practice of thirty-seven surgeons, including American, English and Continental, in which the ages of operation varied from three to thirty-nine years. In this same paper, in speaking of the ultimate results, he says he has known two cases to relapse, where there were anterior curves to the tibia in young children, and one case after his method of supra-condyloid osteotomy.

It will be seen from this that osteotomy and osteoclasis is performed at the Boston Children's Hospital at a much younger age than is considered allowable by many of the standard authorities; and yet after a considerable period of time only one case out of twenty-eight has relapsed, and that a case in which acute rhachitic processes were present after operation.

To summarize, in conclusion: twenty-eight cases are reported, fifteen cases of osteoclasis, twelve of osteotomy and one case in which both operations were performed. The average time which has elapsed since operation is four years. Of the twenty-eight cases, twenty-seven are found in excellent position while one, a case in which the rhachitic processes were active after operation, has relapsed. The average age of operation was four years, while the youngest child was operated at the age of two years, and the oldest was ten years of age. Double talipes valgus was found in fourteen cases, and single in two cases, and a tendency to toe-in was also a frequent occurrence.

—Vaccination, according to *Medical News*, has been obligatory for some years in Japan, and every infant is required by the police to be vaccinated. The value of the procedure is, however, well recognized by the people themselves, and the government hospitals in every town are always thronged with applicants on the weekly "vaccination day." In 1886 there were 1,531 vaccinations to each 10,000 inhabitants.

—The ratio of illegitimate births in the various countries of Europe, is, according to the last reports, as follows: Out of every hundred births 7 were illegitimate amongst the Spanish, 11 amongst the Italians, 16 amongst the English, and 24 amongst the Germans. In Paris, however, the illegitimate births reached 38 amongst people of French nativity.

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at 19 Boylston Place, Boston, September 17, 18, and 19, 1889.

FIRST DAY. — TUESDAY, SEPTEMBER 17TH.

Business meeting, with closed doors, at 9.30, A. M.

MORNING SESSION.

Dr. J. E. Graham, of Toronto, Can., the President of the Association, read the annual address, taking for his subject the question of

THE PREVENTION OF SKIN DISEASES.[1]

Dr. F. B. Greenough, of Boston, read a paper entitled

CLINICAL NOTES ON HERPES ZOSTER.[2]

It comprised statistics drawn from a series of 235 cases of the disease occurring during the past sixteen years at the Boston Dispensary, the total number of patients with skin diseases treated during that time being 17,741. The ratio is, therefore, a little less than 1½%; 45% were males. The most frequent age was from ten to fifteen; a fact which surprised the reader. It was found that the greater proportion of cases occurred in the spring months, with very little variation in the separate years. The reader did not think the eruption could be aborted or the disease shortened. Irritation should be avoided, and the vesicles should not be broken. A large diachylon plaster will sometimes be of benefit.

Dr. Fox, of New York, spoke of the etiological value of violence in reference to the attacks of herpes. It had been his experience, that in almost every case where the history was carefully obtained, some injury could be discovered. The relationship was so intimate that he considered it one of cause and effect. In the way of treatment, he had found nothing so good as the constant galvanic current. No remedies which he had given seemed to influence the disease; and he found many cases would come to a speedy termination without any treatment at all. Some years ago, he had given rhus toxicodendron in one case, and the eruption had disappeared at once. In subsequent cases, however, the result had been different. Two or three applications of the current may be sufficient to render the patient entirely comfortable until recovery takes place.

Dr. Robinson, of New York, did not think the disease should be strictly classed as a neurosis. It seemed to him that it was an infectious disease, of a character similar to pneumonia. It has a definite duration, and generally appears but once in a lifetime. He did not believe that trauma would be a sufficient cause for it. The speaker had seen one case where both sides of the face were affected, occurring during the course of a croupous pneumonia.

Dr. Zeisler, of Chicago, asked in reference to the production of the disease by arsenic. He had lately seen a case of Hodgkins' disease which was treated with arsenic, where, after the tumors had nearly disappeared, a crop of herpes vesicles came out in the gluteal and femoral region. The speaker instanced one case where there was perfect analgesia over one side of the face, and at the same time a prickling and burning sensation over the same portion of the skin. Perhaps this would be a corroboration of the statement that sensitive fibres have different terminations in different points in the skin.

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[5] Owen. Surgical Diseases of Children, p. 84.

[6] Ibid. p. 84.

[7] Ibid. p. 84.

[8] British Medical Journal, January 19, 1889, p. 125.

[9] Breslauer ärztl Zeitschr., No. 23.

[10] Cong. Internat. des Sciences Médicales, Sect. de Chirurgie, p. 73.

[1] See page 293 of the Journal.

[2] This paper will be published in full in the Journal.

Dr. P. A. Morrow, of New York, asked if the hyperæsthesia and analgesia were upon the same surface.

Dr. Zeisler replied that it was upon the same area, although it was impossible to say that it was at the same exact point.

Dr. Morrow remarked that the temperature sense and pain sense were generally lost at the same time. The observation seemed to him a very interesting one.

Dr. Bronson, of New York, said that, to him, there was an unsolved mystery about the etiology of the affection. It seemed to occur with a regularity that was opposed to the idea of its infectious nature. There have been epidemics of the disease, and yet it does not seem to depend on the factors, such as season and temperature, which influence other infectious diseases. The local character of the lesions also militates against the infectious origin. In diphtheria we can see how the poison reaches the point where the effects are noticed; but in the case of zoster, it is difficult to suppose that the germs can locate themselves in the nervous ganglia.

The paralytic phenomena are not easily explained, especially in that form which affects the facial muscles; in the extremities the same result is more easily accounted for. The speaker had seen two or three cases, in one of which the different phenomena were so closely connected in time that it seemed as if the same cause had produced both of them. In one case he had thought there might have been an inflammation of the Gasserian ganglion, with extension of the inflammation through the plate of bone which separates it from the intumescentia gangliformis; but perhaps it is more reasonable to suppose that it was reflex in its origin. The speaker had used successfully a solution of gutta-percha in chloroform, finally sweeping over the part a wisp of absorbent cotton, a few fibres of which would cling to the surface. It seemed to him that under this mode of treatment the process was sometimes arrested.

Dr. Sherwell, of Brooklyn, believed in the protective dressing, and that the continued current is capable of giving great relief. Some persons are of rheumatic tendency, and this should be looked out for.

Dr. Hardaway, of St. Louis, asked about the occurrence of chronic zoster, and related the history of a man of sixty years who exhibited eruptions of zoster on both sides of the neck. The speaker believed in galvanism, but was inclined to question whether the whole effect is due to electricity, or whether mental effect may not play some part. He instanced the case of a woman who was given an application of the electrodes for the relief of a severe attack of supraorbital neuralgia. The result was a happy one, and the patient went away absolutely without pain. He discovered later that he had neglected to immerse the element. The speaker had found nothing so good for the local treatment as a protective dressing in the shape of collodion. He objected to the use of greasy ointments, which macerate the vesicles, so that the tops are rubbed off, and scars are more apt to follow.

Dr. Bulkley, of New York, remarked that the disease is seen in almost the same proportion in New York as in Boston, it being a trifle over one per cent. and remaining the same year after year. It seemed strange that there are so few cases where both sides are affected at the same time. He had seen zoster on the persons of those who exhibited the scars of a previous attack. He did not believe the affection was a local manifestation of a general disease, but that it was reflex, and of traumatic origin. The reason why it so frequently appeared at the waist was because of the separation of the clothing in both men and women and the consequent liability to the effects of cold. In one case of lymphoma of the neck, there had come on an extensive zoster over the course of the nerves passing through the growth. It had been a frequent experience with him that persons taking arsenic were affected with the disease. His treatment was to bandage the part as tightly as possible with a swathe, on the inside of which a good amount of starch had been sprinkled, and the whole sewed on. This is left on for a week and gives great relief without any other treatment.

Dr. Howe, of Boston, had found some discomfort arising from the collodion dressing when he was dealing with the papular form of the disease. Sometimes thin sheets of cork, placed on each side of the affected area, with powdered starch between will afford entire relief.

Dr. Klotz, of New York, did not agree with the view that made the disease an infective process. Croupous pneumonia, which is the best example of such diseases, is sometimes the result of trauma. In two cases of zoster that he had seen the lesions became gangrenous. Both these cases had syphilis, and in one of them the disease had been supposed to be a syphilitic ulcer.

Dr. Morrow spoke of two cases where the eruption appeared below the knee, a fact which is contrary to the statements of most authorities. He mentioned one case where a hot-water bag applied to the spine had given complete relief to the pain accompanying an eruption in that region. The speaker generally used benzoated flexile collodion as a protective.

Dr. Robinson did not mean to assert that an infectious process was necessary for the appearance of the eruption. He had seen a well-marked case of zoster where Pott's disease was the starting point of the irritation.

Dr. Graham, of Toronto, reported a fatal result in a case of zoster affecting one side of the face, the cheek and lower lid. On the fourth day the pain had attacked the other side of the face, and on the fifth day the patient suddenly died. At the autopsy there was found a softened condition of certain parts of the brain. The Gasserian ganglion, and a portion of the fifth nerve were found to be inflamed, and leptothrix threads, together with single bacteria, were found in some of the arterioles of the former structure.

Dr. Greenough, in closing the discussion, said he had no data in reference to the effect of the ingestion of arsenic in the formation of zoster. He considered the co-existence of pain and paralysis as due to the intimate anastomosis between the nerves, although there might be a certain amount of reflex action.

Dr. C. Heitzmann, of New York, read a paper on

MICROSCOPICAL STUDIES OF MALIGNANT TUMORS OF THE SKIN.

The pathology of the skin is intelligible only upon the recognition of the fact that the basis substance of the fibrous connective tissue of the derma is living, and capable of proliferation in the same manner in which the protoplasm of this tissue, the so-called "cells" are viable. The reader had first announced this fact in 1873; and since 1880 Stricker, of Vienna, has adopted the same view.

In inflammation of the derma there is first noticed an increase in the amount of living tissue in the interstices, and at the same time the basis substance bordering such an inflammatory area returns to its protoplasmic condition, and splits up into inflammatory corpuscles, just as does the protoplasm between the bundles of connective tissues. From this inflammatory structure bundles of fibrous tissues may again form giving us the "hyperplasia" of Virchow. A breaking asunder of the inflammatory corpuscles leads to the formation of pus corpuscles, the sum total of which we term an abscess.

In the formation of tumors the tissue of the derma invariably returns into its protoplasmic or embryonal condition with the production of new formed medullary or indifferent corpuscles, from which a tissue originates either kindred to the normal tissues, as in myxoma, fibroma, etc., or it remains in an embryonal condition as in sarcoma, which the author prefers to call myeloma. In cancer a new formation of epithelium takes place, with a new formation of myxomatous or fibrous connective tissue. The reader would divide all myelomatous, that it, sarcomatous tumors into two main divisions, the globo-myeloma, corresponding to the round-cell sarcoma and the spindle-myeloma, or spindle-cell sarcoma. All other varieties he would consider embraced by these.

Globo-myeloma is made up exclusively, or prevailingly, of globular corpuscles of different sizes; sometimes the smallest is not larger than a lymph corpuscle, and in that case we have the lympho-sarcoma, which the author thinks identical with the outgrowths of mycosis fungoide of Kaposi. There are two main sources for these cells, namely, the protoplasm between the bundles, and the basis substance of the bundles themselves. First are observed globular bodies between the bundles; these have unquestionably sprung from the protoplasm by an augmentation of its living matter by a proliferation of its cells. The newly formed elements are first small, homogeneous and highly refractive, representing therefore solid lumps of living matter. These increase in size, become vacuolated, and a solid or reticulated nucleus appears in the centre of each corpuscle. At the same time there is a transmutation of bundles of fibrous tissues into either reticulated masses of protoplasm or single pieces, these being separated from one another by a little cement-substance. Later on these square pieces are further split up into myeloid corpuscles.

When the lymphoma appears in the derma there is a gradual thinning of the epithelial covering, and loss of the hairs, with final disappearance of all epithelial structures. According to the idea of the reader, the epithelia are transformed into giant cells, which in turn split up into myeloma corpuscles. In the case of the spindle-myeloma the same course holds true as in the formation of the globo-myeloma.

In the case of carcinoma the normal epithelium is not transformed directly into cancer cells; there is a stage of indifferent protoplasm, and the production of multinuclear masses, which split up into cancer epithelia by the appearance of a new cement-substance.

What Waldeyer considered an inflammatory new formation in the surrounding connective tissue was considered by the reader to be only the pre-stage of cancer. The medullary corpuscles which have been formed are transformed into cancer cells. In the epidermal cancer this change is seen along the border of the epithelial pegs. Here the indifferent corpuscles change into multinuclear bodies in which boundaries of cement-substance appear. In this case, too, the medullary corpuscles within the connective tissue arise also from the basis substance as well as from the cells.

That the connective tissue participates in the growth of the cancerous tumor, and that its so-called small cell infiltration is a mere pre-stage of cancer, is clinically of the utmost importance. Whenever a cancer is removed with the knife, and we find at the cut surface of the extirpated mass small, shining, medullary corpuscles, we can positively foretell a recurrence, however small the number of such corpuscles found in the fibrous connective tissue of the derma or in the myxomatous net-work of the fat globules of the subcutaneous tissue.

Dr. Robinson did not wish to express positive opinions in regard to the views advanced by the author of the paper until he had studied the matter thoroughly. He would agree entirely with Dr. Heitzmann in regard to the histology and growth of connective tissue. He would not, however, classify sarcomata with tumors proper, but considered them the manifestation of an infectious process. They are the result of a dermatitis, and are not a new growth. In the case of an epitheliomata we have to do with a specialized structure, and it seemed to him that it would be at least very difficult to prove that you could get epithelial tissue from an ordinary connective tissue. The necessity of the previously existing epitheliomatous tissue is shown by the character of the secondary tumors and the hereditary tendencies of the disease. If epithelial tissue can arise from the embryonal tissue coming from connective tissue, it would be expected that sometimes we would get epitheliomatous growths in those tissues which are more or less embryonal naturally, such as the lymph glands.

Dr. Heitzmann remarked that he had just such a specimen.

Dr. Robinson thought no one else had ever seen such a case. As regards the change from epithelial structures into indifferent corpuscles, and then into other cancer cells, in his experience he had never seen such a case. He would summarize his position as follows: that an irritation, if not too severe, in which case it would be destructive, might produce a formative growth; that sarcomatous formation might take place from connective tissue without supposing the presence of elements from fœtal life; that in the case of the epitheliomata there must be the presence of a previously existing epithelium; that epithelial elements cannot change into medullary corpuscles, and then into elements; and no more can connective tissue elements pass into epithelium.

Dr. Heitzmann said he was ready to admit that, when the myeloma is just starting in the dermal tissues, it is impossible to distinguish it from simple inflammatory action. We must depend upon clinical observation, as the origin is identical in the two cases.

Dr. Robinson, referring to his belief in the infectious nature of the sarcomata, mentioned Dr. Sherwell's case of round-cell sarcoma of the skin. It was noticed that some of the tumors disappeared while new ones arose. If they were a new growth, they ought to continue to grow indefinitely. It is known that in cases of mycosis fungoide the tumors will come and go constantly.

Dr. Sherwell mentioned a quite similar case observed in Burlington, Vt., where many of the tumors disappeared under treatment, their place being taken by a distinct depression in the skin.

AFTERNOON SESSION.

Dr. P. A. Morrow, of New York, read a paper entitled

THE DIAGNOSIS OF LEPROSY; ESPECIALLY THE DIVISION OF THE ANÆSTHETIC FORM FROM SYRINGOMYELIA.

Little is said in the text-books about the diagnosis of this disease, perhaps because few writers have been personally familiar with it. In the later stages the diagnosis is not difficult, but in its inception it is often doubtful. In the examination of the suspects at Honolulu a large number are remanded for further developments, and it should be borne in mind that this is not owing to any lack of skill on the part of the physicians. Many of the initial symptoms are quite indeterminate, and might be referred either to leprosy or to other diseases. The affection is most likely to be confounded with erythematous diseases, with lupus, and with certain affections of the nervous system, while many parasitic diseases have very similar lesions.

Two main forms of leprosy are recognized; the tubercular and the anæsthetic. In one there is a determination of the process to the integumentary tissues and in the other to the nervous system. In tubercular leprosy the prodromal symptoms have little value, and the same may be present in syphilis and other diseases. In this form the presence or absence of anæsthesia is of no diagnostic value whatever. The eruption is not at all pathognomonic. The macules which first appear are round, oval or irregular, of a bright, or sometimes dark red color, fading on pressure. As a rule they are not infiltrated, and may disappear without a trace, or they may leave a yellowish spot. Sometimes they may present a picture similar to erythema multiforme. After a time these macules become persistent, and then there is a tendency to the formation of tubercles; but the latter may develop in isolated spots, quite apart from the large erythematous areas.

In its origin the disease resembles syphilis in the long period of incubation and the successive crops of the eruption. The syphilitic roseola corresponds to the leprous erythema; the mucous membranes are affected in each, although the throat is not affected in leprosy. There is more infiltration of the skin, especially in the face, in the case of leprosy, and leontiasis is more often seen, as well as the breaking down of the osseous framework of the nose. Sometimes the tubercles of this disease resemble very much those of lupus. Sarcoma has been confounded with the disease, but when the fungoid state is reached and the tumor suppurates the distinction is easily made. The disease has also been mistaken for acne, sycosis, lichen planus, erythema nodosum, moluscum fibrosum and dermatitis medicamentosa. The bacillus lepræ is invariably found in the tissues, and stamps the disease when such examination can be made.

The anæsthetic form of the disease presents a greater variety and complexity of symptoms. While the demonstration of the bacillus is rarely practicable, yet the invariable presence of anæsthesia has almost a pathognomonic value. The macular lesions which are seen are pigmented, and tend to clear up in the centre while they spread peripherally. On first appearance the macules are hyperæsthetic, but this condition is followed by anæsthesia in the centre, as the affected surface widens. The reader showed colored drawings representing a case that had existed five years, where the lesions were well-marked upon the feet and lower part of the leg. Here the central portion presents a bluish or grayish appearance distinct from the reddish outlines of the edges. There was anæsthesia in the centre, with normal sensation just outside the margin.

In general it is found that there are many irregularities in the course of the anæsthetic symptoms. It is distinguished from chromophytosis by the absence of scaliness and the absence of the parasite of that disease. It is to be distinguished also from vitiligo and morphia. The hairs of the affected surface often fall out. An interesting point is the plantar ulcer, which very frequently forms, owing, the reader thought, to the custom of going with bare feet. This lesion resembles the mal perforans.

The nerves most frequently affected are the ulnar, the peroneal, and the third and seventh pairs. There may be wrist-drop, and a peculiar claw-like contraction of the fingers. Since the pathological lesion is a multiple neuritis, it is not surprising that there are many diseases of the central nervous system which resemble leprosy. The atrophy and degenerative changes may be limited to the muscles of the hand and forearm and may present a perfect picture of the lesions of progressive muscular atrophy. It is distinguished by the presence or absence of sensory disorders.

The disease most difficult of differentiation is syringomyelia. This disease was formerly considered to be very rare, and to be met with only post-mortem, but of late a number of cases have been reported. Its main symptoms are sensory disorders and trophic changes. The atrophy is localized in the muscles of the hand and forearm. There is a flattening of the thenar and hypothenar eminences, with absolute loss of pain and temperature sense, with retention of tactile and muscular sense. The reaction of degeneration is sometimes present. After a time the disease may remain stationary.

Dr. Morrow related the case of a person living in this country, but who had been born in the Sandwich Islands, a young man of twenty years. When eight years old the patient had fractured the right clavicle. Within from one to three years afterward, the history not being definite, there was felt a numbness of the hand. It was supposed to be of spinal origin, and the actual cautery was applied. Contraction of the fingers came on, and has remained since, but the numbness has crept up the forearm. The right arm measures one and one-quarter inches less than the left. There is also atrophy of the muscles of the right leg. A superficial sore appeared over the index finger, refusing to heal. Electric excitability of the hand was lost. After a time two or three brownish spots appeared upon the forearm.

This case presented many of the symptoms of syringo-myelia, but may be distinguished by the sensory loss. The child had been to the Sandwich Islands when nine years of age, and that fact is of weight in making the diagnosis. The fact that the present good health of the patient is not conducive to the spread of the disease may explain the asymetrical character of the lesions and the non-progressive type of the disease. There are many abortive cases, and no doubt the removal of this boy to a different climate has increased his capacity for resistance.

DR. HARDAWAY said that in his experience most of the cases we see in this country were mixed cases. He presumed it was admitted that tropical cases are mostly anæsthetic, while in temperate climates the cases are mixed.

DR. MORROW did not think so. In India it is comparatively a minimized form of the disease. In the Sandwich Islands there has been noticed a progressive increase in the number of anæsthetic cases, the anæsthetic representing the milder type. About one-half are tubercular, one-third anæsthetic, and the remainder mixed.

DR. BRONSON spoke of the great resemblance shown by some of the photographs which the reader had presented, to syphilitic lesions. and Dr. Greenough called special attention to the same point.

DR. BULKLEY asked if the lesion on the sole of the foot was sufficient alone to establish a diagnosis.

DR. MORROW replied that the photograph of this lesion that had been shown had been taken several years before, and that since that time other lesions had appeared, and the patient had afterward been sent to the leper settlement. He did not think that lesion would be present as an early symptom except in places where the people went barefoot.

DR. GRAHAM cited the case of a woman, seventy-two years old, who had the anæsthetic form of leprosy, who suffered with an ulcer on the sole of the foot, though she did not go barefoot.

DR. JACKSON, of New York, under the title

CONTRIBUTION TO DERMATOLOGICAL BIBLIOGRAPHY,

presented to the Association a very complete list of dermatological published material.

DR. GRAHAM returned to Dr. Jackson the thanks of the Society

DR. J. ZEISLER, of Chicago, read a paper on

THE OCCURRENCE OF PRURIGO IN AMERICA.

His inquiry was intended to throw light upon the subject question of whether true prurigo occurs in America, and, if there is a difference in the proportionate amount, to what it may be due. In France, up to ten years ago, the disease was almost unknown. In 1876, Dr. James C. White said that it was not seen in this country. It is now generally believed that true prurigo does exist here, but the severe form is quite uncommon. The mild form of the disease does certainly occur.

Out of 1,370 cases of skin diseases the reader had seen twelve cases of prurigo, five of them severe, and the rest mild. Out of 1,108 cases in private practice nine were cases of prurigo, of which three were severe and six mild. Out of the whole number, the percentage would be .875, which is a larger proportion than is generally supposed. According to the reports of this Association a year ago the per cent. was .027, and last year it was .033. In Prague, in 1874 it was .566, and in 1875 in the same city, it was .714. In Christiana there is reported an occurrence of a little over three per cent., while in Vienna it forms from two to three per cent. of all skin diseases.

In the five severe cases there could be no doubt about the diagnosis. In the twelve cases, only one of whom was born of native parents, seven might be classed as being in poor circumstances, and four of these seven were affected with the severe form of the disease. Of the five who were in moderate circumstances only one had the severe form. Five of the seven mild cases have been cured, and the other two are improving. The five severe cases which have been watched for a long time, seem at times to improve a little, and then relapse when neglected. Frequent bathing is one of the best remedies for the disease, and the reader thought that the greater habits of cleanliness in this country would explain the rarity of the affection.

The following conclusions were drawn, namely: (1) Prurigo does certainly exist in America. (2) The severe form, while occurring in perfectly typical examples in patients born or raised here, is comparatively rare. (3) Prurigo mitis is not uncommon here.

DR. TAYLOR had seen two cases of what seemed commencing prurigo in children who had chronic urticaria, and one case of true prurigo in the adult.

DR. FOX had seen two cases in adults where there could be no question about the diagnosis. Several cases had been presented before the New York Dermatological Society, and some of the members had questioned the diagnosis. Their objections had been based on the cases shown in Vienna in the clinic, where only the marked cases were presented. It seemed to the speaker that there had been a great diffidence in making the diagnosis, on the ground that the cases did not present these marked characteristics. In its mild form the speaker did not believe it to be a very rare disease, although, of course, it is not a common one.

DR. ROBINSON had never seen a case in this country that he would be willing to diagnose as such, although he had seen them in Hebra's clinic.

DR. GREENOUGH had seen many cases in Vienna, but he had never seen at the Boston Dispensary any cases of what Dr. Zeisler would call the severe prurigo. He had seen several cases about which there was a question. He would not deny that they might have existed, and thought it possible that some of the cases that he and his colleagues had entered as pruritus were mild cases of prurigo.

DR. WIGGLESWORTH said that the first case reported in this country had been reported by him. He had at present a case under observation, a boy who would be presented to the Association on the last day of the meeting.

DR. BRONSON thought something of a bugbear had been made of the subject. There can be little question that the disease exists as an individual affection in Vienna. If we accept the view that the disease is essentially a neurosis which primarily affects the sensory and motor nerves, and that the trophic changes are secondary and the result of irritation, then we are justified in recognizing the disease as of common occurrence, even here. It had been the experience of the speaker that pruritus most affected those portions of the skin which are most affected by prurigo. He believes that the neurosis is identical in the two cases. From certain causes this neurosis is much aggravated in Vienna and some other foreign places, but it is sometimes seen here in the severe form. The speaker had never seen a case of the persistent form, as it occurs in Vienna.

DRS. JACKSON, BULKLEY, SHEPHERD, SHERWELL, HOWE, KLOTZ and HEITZMANN participated in the discussion, each of them having seen from one to three cases.

DR. ZEISLER said it was no objection to the diagnosis that the patients were cured. Mild cases are perfectly curable, especially since the use of β-napthol. The severe cases can be rendered very comfortable, at any rate.

DR. J. F. SHEPHERD, of Montreal, reported

TWO CASES OF ECZEMA MERCURIALE.

These cases followed the use of Scott's dressing, which is made of one part mercury to four parts of ammoniac plaster. He had used the dressing in the treatment of chronic synovitis of the joints. Both cases reported occurred in young men. In the first case the dressing was kept on three weeks without renewal. At the end of that time the knee had regained its normal shape. A year later a similar attack came on and the same application was made, but this time on a surface that had recently been blistered. At the end of a week the skin about the knee was found inflamed, red and brawny. The next day the face was red, hot and swollen, and covered with fine vesicles, the eruption extending down as far as the clavicle. At the same time the eczema about the knee extended as far as the groin. Recovery was complete in two weeks.

In the second case the dressing was removed after three weeks, and an eczematous rash found on the surface which had been covered. Three days later there was a marked swelling of the eyelids, and in two days the whole face had become reddened. At the same time a papular eczema appeared on the leg and forearm, and the genitals were acutely inflamed. Desquamation occurred in two weeks, but the rash did not disappear for six weeks. A third case had been reported to him as occurring in the practice of a colleague, the history being very like those mentioned.

DR. MORROW referred to the fact that in certain cases the eruption caused by drugs will persist for a long time, although the general rule is for a speedy disappearance when the irritating cause is removed.

DR. GREENOUGH had seen one patient who seemed to have a peculiar idiosyncracy. He used the ointment, and it was followed by a severe dermatitis which took on a diffuse phegmonous form, and he was confined to his bed for six months.

The discussion was further participated in by DRS. ZEISLER and GRAHAM.

At this point a letter from DR. DUHRING was read, in which was expressed regret that he was unable to be present at the meetings of the Association.

(To be continued.)

— "What you need is a change of climate," said the fashionable doctor to his patient. "Why, man alive, that's what I've been having," was the reply. "I've stayed right here in New England for the last twenty-five years." — *Christian Register.*

THE BOSTON

Medical and Surgical Journal.

THURSDAY, OCTOBER 3, 1889.

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THE URINE IN PERNICIOUS ANÆMIA.

DR. WILLIAM HUNTER, of Cambridge University, England, who last year published some interesting and important observations regarding the symptomatology and pathology of pernicious anæmia, has now supplemented these in the *Practitioner*, for September, by other observations on the urine in a case of this disease, — observations which he thinks show that the urine in pernicious anæmia presents specially characteristic features, and such as serve to establish the diagnosis of the disease.

A relatively high hæmoglobin percentage to the number of red blood corpuscles Dr. Hunter considers to be the only characteristic feature presented by the blood in pernicious anæmia, but he is of those who regard pernicious anæmia as a distinct and separate disease, not merely as an extreme form of anæmia or chlorosis or the terminal stage of other diseases.

In the case under observation the color of the urine was the most striking feature throughout. It was exceedingly high, varying slightly from time to time, but always remaining very much higher than ever observed in conditions of health. At no time were any bile pigments to be detected. As regards its spectrum and its chemical behavior, the coloring matter present in such large quantities had all the characteristics of pathological urobilin; and there is no doubt that in all cases such urobilin is a product derived from the disintegration of hæmoglobin. The richness of the patient's urine in coloring matters could have had absolutely no relation to the absorption of matters derived from the food, as this was as little nitrogenous as possible, and consisted mainly of milk. The excretion of such large quantities of coloring matter, entirely independent of the occurrence of fever or of any diminution in the quantity of urine or rise in the specific gravity, was regarded by this observer as of the greatest interest and importance in its bearing on the diagnosis of the disease; and Dr. Hunter is disposed to maintain that the excretion of such large quantities of pathological urobilin appears extremely valuable evidence as to the essential nature of the disease, that it depends on an excessive destruction of blood, that it is hæmolytic in its nature.

In his former observations, his conclusions regarding the hæmolytic nature of this disease were based solely on (1) a consideration of anatomical changes to be found after death, and (2) on the possibility of inducing experimentally similar changes in animals by the action of blood-destroying agents.

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BOGUS DIPLOMAS ONCE MORE.

When the notorious Buchanan diploma frauds were first made public, the matter attracted very great attention, as the business was a novel one, and its chief manager attained no small degree of notoriety. Like all criminals (perhaps one might say like all successful men) he had imitators, and diploma-mills have been so frequently exposed that further discoveries and exposures cease to excite any great interest. A state of affairs has, however, been recently disclosed in the States of Vermont and New Hampshire that deserves notice at the hands of the profession. This condition is very similar to that which existed but recently in Massachusetts. In the latter State the laws relating to the incorporation of business, charitable and educational associations were so lax that it was possible for a medical school to be incorporated under general laws and to issue diplomas with, at least, a semblance of legal right, without any actual existence save on paper.

The *Boston Herald* of Sunday, September 29th, contains an account, which fills many columns, of two definite diploma mills, and points out the probable existence of others. In the briefest possible terms the story is as follows:

Some months ago a practitioner of Buffalo presented as the evidence of his medical education a diploma issued by the "Trinity University, of Burlington, Vt.," an institution of learning of which the very existence was unknown to the physicians of Burlington or to the Secretary of State. A "Dr." Bradbury, of Nashua, N. H., was discovered to be the agent of the university; and from him a hardware dealer of Buffalo, succeeded in obtaining a diploma for the sum of sixty dollars, without any medical qualification whatever. It seems that all that is necessary to incorporate such an institution in Vermont is to make application to any town clerk for articles of incorporation, and they are granted forthwith. "Trinity" was found to have been incorporated in the town of Bennington, and a copy of the articles of incorporation is published in the newspaper quoted. There was also discovered at Rutland a document incorporating the "Vermont Medical College or Second Medical College of the American Health Society for Scientific and Benevolent Purposes." How many other such corporations may exist in the State is entirely a matter of conjecture.

Articles of incorporation of the "University of New Hampshire" were also discovered in the Secretary of State's office at Concord, bearing date of October 10, 1888. The names of the incorporators of this last concern, bear a striking resemblance to those attached to the "Trinity" of Vermont. Part of the correspondence with the representatives of these paper universities was carried on with individuals who gave addresses in Boston.

Various physicians in New York, Vermont and New Hampshire contributed no little time and pains to unearth the unpleasant details; and it is sincerely to be hoped that all parties concerned in the exposure will still further merit the gratitude of the public by laying the matter before the legislatures of the two States concerned, that, by a suitable amendment of the laws, the further growth of such bogus institutions may be impossible.

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THE INDEX CATALOGUE. VOLUME TEN.

For the tenth successive year we welcome an additional volume of the "Index Catalogue." Each number increases the value of the catalogue, as it renders additional branches of medical literature more easily accessible, and thus gladdens the hearts of a wider class of studious practitioners.

The present volume adds to the index 7,658 author titles, 14,265 book titles and 29,421 journal articles, and contains words from *O* through *Pfutsch.* The total number of authors so far catalogued reaches the number of 107,788.

The contents of Volume X presents the same sort of fascination as its predecessors. The first thing to arrest attention in its pages is the series of titles catalogued under the head of *Observations.* It is a curious collection of articles, most of which have some reformatory object.

Obstetrics is introduced by a series of titles on *man-midwifery,* which illustrates many attempts to "dissect, expose and correct" a supposed "personal, domestic and national evil," as one of the titles run, and in general to discredit the male practitioners of the obstetric art, whose rejoinder may be read between the lines of the enormous number of titles which follow in the succeeding pages. The volume is evidently an important one to obstetricians as it contains also the articles on *Pelvimeter, Pelvis, Perineum* and *Perimetritis.*

The *Pension* list seems abnormally small. as it appears in the catalogue. The longest list of titles catalogued under a single word falls under the head of *Periodicals.* That list includes all the medical and scientific journals, and the transactions of medical and scientific societies in the library, arranged alphabetically by countries.

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MEDICAL NOTES.

— The following appointments are announced at Clark University, Worcester: Prof. Arthur Michael, of Tufts College, professor of chemistry; Prof. J.

Playfair McMurrich, of Haverford College, docent in biology: Dr. Franz Boas, docent of the University of Berlin, docent in anthropology; B. C. Burt, of Michigan University, docent in historical psychology; Prof. Alfred Cook, of Bryn Mawr College, docent in psychology; Dr. Arthur McDonald, docent in psychology; Prof. Herman C. Bumpus of Olivet College, Michigan, fellow in biology.

— In addition to the election of Dr. Weir Mitchell, as President of the next Congress of American Physicians and Surgeons, to be held in September, 1891, which we have already noticed, Dr. W. H. Carmalt, of New Haven, was elected Secretary; Dr. J. S. Billings, of Washington, Treasurer; Dr. William Pepper, of Philadelphia, Chairman of the Executive Committee; and Dr. S. C. Busey, of Washington, Chairman of the Local Committee of Arrangements. Dr. C. H. Mastin, of Mobile, is reported to have declined the presidency, on the ground that no member of the Executive Committee ought to be elected to the presidency.

— A Medical Library Association has been incorporated at Chicago, to maintain a medical library; incorporators, Drs. Boerne Bettman, N. S. Davis, C. W. Earle and others.

— The Prussian minister of education, says *Science*, is turning his attention towards the study of the history of medicine, which seems to have been slowly dying out. There used to be a chair for this subject at every German university, but they have all become vacant with the exception of the one at Berlin, occupied by Professor Hirsch, the Nestor of the historians of medicine. To counteract this, it has been ordained that every newly-appointed professor of hygiene should give lectures on the history of medicine as part of his work.

— The second Congress for Tuberculosis will be held in Paris during the latter part of July, 1890. Professor Villemin will act as president. The following questions are to be discussed: (1) The identity of human and bovine tuberculosis, also that of other animals; (2) The bacteriological and morbid associations of tuberculosis; (3) The isolation of tuberculous subjects; (4) The agents capable of destroying Koch's tubercle bacillus, with a view to the prophylaxis and therapeusis of the disease in man.

NEW YORK.

SIXTH ANNUAL MEETING OF THE STATE MEDICAL ASSOCIATION.

— The sixth annual meeting of the New York State Medical Association was held at the Hotel Brunswick, September 25th, 26th and 27th. The attendance was large, including a number of well-known physicians from other States as well as New York, and the session was one of much interest. Dr. William T. Lusk presided, and the principal features of the meeting were the discussions on Tubal Pregnancy, participated in by Drs. Lusk, Thomas, Harrison and Isaac E. Taylor, of New York, Parvin, Goodell, Parish and Howard Kelly, of Philadelphia, Van de Warker, of Syracuse, and Wathin, of Louisville, Ky., and on the treatment of Hernia, participated in by Drs. Bryant, Dennis, Wyeth, McBurney and W. T. Bull, of New York, Tremaine and Roswell Park, of Buffalo, Squire and Charles W. Brown, of Elmira, Totman, of Syracuse, and Leroy J. Brooks, of Chenango County. The annual banquet was held on the evening of September 26th.

The following officers were elected for the ensuing year: *President*, Dr. John H. Orton, of Binghamton (Third District); *Vice-Presidents*, Dr. Douglas Ayres, of Fort Plain (First District), Dr. W. H. Burton, of Troy (Second District), Dr. E. Mott Moore, Jr., of Rochester (Fourth District), and Dr. William B. Eager, of Middletown (Fifth District); *Secretary*, Dr. E. D. Ferguson, of Troy; *Treasurer*, Dr. John H. Hinton, of New York; *Director of the Library*, Dr. J. W. S. Gouley, of New York.

DEATH BY ELECTRICITY.

— Engineer Charles F. Heinrich who was asked to assist professionally the State authorities in the Kemmler investigation, has written a letter to Mayor Grant in which he calls attention to the great sacrifice of human life caused by the high voltage of electric light currents and the criminal carelessness of the companies who neglect to guard and maintain the proper insulation of their wires and apparatus. Since May 6, 1887, he states, seventeen persons have suffered instantaneous death by high voltage electric currents in the city of New York, while a great many others have sustained the loss of limbs or been otherwise permanently injured from the same source. The coroner's inquests in such cases have never brought out the facts as they should have done, and he calls upon the mayor to order an investigation as to the deadly nature of the high voltage of electric currents used in the city, and to cause police regulations to be framed which will prevent the further sacrifice of human lives from this cause.

— Dr. T. Gaillard Thomas has resigned his position as Professor of Clinical Gynecology in the College of Physicians and Surgeons.

Miscellany.

PHYSICAL TRAINING IN PUBLIC SCHOOLS.

The Fourth Annual Report of the Board of Health of Maine contains a useful paper by Dr. F. N. Whittier, director of the Sargent Gymnasium at Bowdoin College, on "Light Gymnastics for Schools." Dr. Whittier repeats the arguments (no less weighty because they have been given before, and no less important because they are habitually disregarded by school boards), in favor of systematic physical training in the public schools. For a striking confirmation of the proposition that such instruction improves the mental power of its subject he cites an experiment recently carried on by Dr. H. D. Wey at the New York

State Reformatory at Elmira. Wishing to give the theory a fair test, Dr. Wey selected twelve of the dullest boys in the school and gave them a thorough course in physical training, the boys themselves having no knowledge of the object of the experiment.

Their average rank in their studies for the five months immediately preceding the experiment was about 45 per cent. while during the five months' course in physical training their average was 74 per cent. and what is still better, they maintained their advanced standard during the six months following the discontinuance of the course; thus showing that the effect was permanent. In his report, Dr. Wey says, "With physical culture and improvement there came a mental awakening, a cerebral activity never before manifested in their prison life. Their faces parted with the dull and stolid look they had in the beginning, assuming a more intelligent expression while the eye gained a brightness and clearness that before was conspicuous by its absence."

That the physical training had also an effect upon their moral natures is made evident by the fact that Dr. Wey's records show that the gain in general deportment even surpassed the gain in scholarship.

Correspondence.

THE "PIONEER" SPECIAL NATIONAL MEDICAL SOCIETY.

Mr. Editor, — In the Journal of September 26th, you speak of the American Gynecological Society as the pioneer of special national medical organizations, and as having held its fourteenth annual meeting the previous week.

The American Ophthalmological Society held its *twenty-fifth* annual meeting last July, and the American Otological Society dates its organization only four years later, in 1868.

Truly yours,

Henry W. Williams, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 21, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	683	312	23.55	13.80	15.00	2.70	2.70
Philadelphia	1,040,245	377	152	15.39	24.84	4.32	5.40	3.51
Chicago	830,000	362	167	32.20	7.56	13.72	6.16	8.12
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	156	56	16.00	19.20	8.96	6.46	1.28
St. Louis	450,000	165	63	15.86	7.93	7.93	2.44	5.49
Boston	413,567	184	77	22.14	16.20	9.72	4.32	7.02
New Orleans	250,000	—	—	—	—	—	—	—
Cincinnati	225,000	94	—	22.26	13.78	5.30	4.24	11.66
Washington	225,000	93	30	24.61	12.84	6.42	8.56	7.49
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	21	9	33.33	14.28	19.04	9.52	—
Charleston	60,145	50	21	18.00	12.00	10.00	2.00	—
Portland	40,000	20	10	25.00	10.00	15.00	—	10.00
Worcester	78,292	23	10	39.15	13.05	30.45	4.35	—
Lowell	71,518	43	23	32.62	11.65	11.65	6.99	11.65
Cambridge	65,552	25	10	32.00	12.00	20.00	4.00	4.00
Fall River	62,647	29	20	44.85	3.45	34.50	6.90	—
Lynn	53,334	23	—	—	11.65	—	—	—
Springfield	40,731	17	8	23.52	29.40	23.52	—	—
Lawrence	40,619	22	12	50.00	4.55	22.75	9.10	18.20
New Bedford	37,253	17	10	47.04	5.88	47.04	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	8	1	12.50	12.50	—	12.50	—
Salem	29,011	14	4	14.28	—	14.28	—	—
Brockton	28,813	9	3	22.22	44.44	—	11.11	—
Chelsea	28,167	13	6	23.07	15.38	7.69	—	15.38
Haverhill	26,058	7	2	42.84	14.28	42.84	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	2	1	—	—	—	—	—
Newton	21,553	—	—	—	—	—	—	—
Malden	19,774	4	1	—	—	—	—	—
Fitchburg	17,534	10	5	30.00	10.00	30.00	—	—
Waltham	17,332	5	0	—	60.00	—	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	3	2	—	—	—	—	—
Quincy	13,728	3	1	33.33	—	33.33	—	—

Deaths reported 2,482: under five years of age 1,016; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 578, consumption 308, acute lung diseases 190, diarrhœal diseases 287, diphtheria and croup 117, typhoid fever 111, whooping-cough 18, malarial fever 16, scarlet fever 13, cerebro-spinal meningitis 9, erysipelas 6, measles 1. From whooping-cough, New York 8, Chicago 5, Boston, Washington, Worcester, Lowell and Fall River 1 each. From malarial fever, New York 8, Baltimore 4, Charleston 3, Philadelphia 1. From scarlet fever, Philadelphia 5, New York and Chicago 3 each. Cincinnati and Cambridge 1 each. From cerebro-spinal meningitis, Chicago 4, Philadelphia, Baltimore, Boston, Washington and Nashville, 1 each. From erysipelas, Chicago 3, New York 2, Brockton 1. From measles, Philadelphia 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending September 14th, the death-rate was 16.7. Deaths reported 3,062: infants under one year of age 879, diarrhœa 272, scarlet fever 72, diphtheria 56, fever 45, whooping-cough 45, measles 30,

The death-rates ranged from 13.2 in Derby to 31.4 in Plymouth, Birmingham 15.0, Bradford 14.2, Bristol 18.0, Hull 18.1, Leeds 17.4, Leicester 14.2, Liverpool 19.6, London 14.8, Manchester 21.1, Nottingham 14.7, Sheffield 18.7.

In Edinburgh 15.1, Glasgow 19.8, Dublin 24.5.

The meteorological record for the week ending Sept. 21, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Sep. 21, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...15	30.18	67.0	71.0	63.0	90	90	90	N.E.	S.	1	12	G.	O.	6.20	.05
Monday,..16	30.06	73.0	78.0	68.0	86	91	88	S.	S.W.	14	12	O.	C.	4.00	.05
Tuesday,..17	29.98	73.0	77.0	69.0	93	86	90	S.	S.W.	12	12	O.	O.	0.10	T.
Wednes. ..18	29.86	66 0	70.0	61.0	100	89	94	W.	N.W.	3	2	R.	O.	13.00	.77
Thursday,.19	29.56	56.0	60.0	51.0	100	70	85	W.	S.W.	21	12	R.	C.	14.15	.74
Friday,....20	29.58	58.0	68.0	49.0	75	68	72	S.W.	S.W.	10	9	C.	O.	0.15	T.
Saturday,.21	29.47	59.0	64.	54.0	78	65	72	S.W.	N.W.	6	16	F.	F.	7.15	.26
Mean for Week.															

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 21, 1889, TO SEPTEMBER 27, 1889.

By direction of the acting Secretary of War, Major **George M. Sternberg**, surgeon, having completed the duties assigned him in the War Department order dated February 4, 1889, S. O. 30, February 5th, A. G. O., is reassigned to duty as attending surgeon and examiner of recruits at Baltimore, Md. Par. 12, S. O. 218, A. G. O., September 19, 1889.

By direction of the Secretary of War, the station of Major **Leonard Y. Loring**, surgeon, is changed from Fort Mojave, Arizona Territory, to Fort Wingate, New Mexico, and he will report for duty at the latter accordingly. Par. 7, S. O. 219, A. G. O., September 20, 1889.

By direction of the Secretary of War, Captain **Henry G. Burton**, assistant surgeon, will report in person on the expiration of his present sick leave of absence, to the commanding officer David's Island, New York, for temporary duty at that station, and by letter to the superintendent recruiting service. By Par. 3, S. O. 223, A. G. O., Washington, September 25, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 28, 1889.

Gorgas, A. C., medical director, detached from Examining Board, and to hospital, Philadelphia, Pa.

Hord, W. T., medical director, detached from hospital, Philadelphia, Pa., and wait orders.

Bogert, E. S., medical inspector, detached from New York Navy Yard, and to Examining Board.

McMurtrie, D., surgeon, detached from U. S. S. "Vermont," and to Navy Yard, New York.

Babin, H. J., surgeon, ordered to the Receiving Ship "Vermont."

Hall, C. H. H., past assistant surgeon, resigned from the Naval Service, to take effect November 1, 1890, and resignation so accepted.

SOCIETY NOTICE.

Boston Society for Medical Observation.—A regular meeting of this Society will be held at 19 Boylston Place, Monday, October 7th, at eight o'clock. Readers: Dr. A. Post, Some Considerations regarding Spyhilis and Marriage; Dr. R. H. Fitz, A Case of Hæmorrhagic Pancreatitis.

T. F. Sherman, *Secretary.*

OBITUARY. D. A. GROSVENOR, M.D., M.M.S.S.

Dr. D. A. Grosvenor died at his residence on Elm Street, in Danvers, Mass., September 27, 1889. He had been gradually failing in health during the past two years.

Dr. Grosvenor was one of the oldest and best-known practitioners in Essex County. He was a native of Manchester, Mass., where he was born January 1, 1811. He entered Dartmouth College, and graduated in the class of 1834. He passed through the regular course of medical study, and then moved to the town of Rutland, Mass., where he commenced the practice of his profession. He remained there but a short time, thence removing to Danvers in 1839, where he had practised for just half a century. He leaves a widow and one son.

OBITUARY. MILTON LANE, M.D.

Dr. Milton Lane, a well-known physician of Lincoln, Neb., died September 16th, after a four days' illness, of acute peritonitis. Dr. Lane was born in Boone County, Ind., August 14, 1837. He read medicine with his oldest brother, Dr. T. H. Lane, at Lebanon, Ind., and afterwards graduated at the Jefferson Medical College, of Philadelphia. In August, 1863, he began the practice of medicine at Reelsville, Putnam County, Ind., and in 1879, he settled in Lincoln. From May, 1888, to May, 1889, he was the President of the State Medical Society.

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The Climate of Southern California in its relations to Renal Diseases. By P. C. Remondino, M.D, San Diego, Cal. Reprint. 1889.

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Report on the Carbonic Acid Gas Treatment of Malarious Fevers. By Charles G. R. Naylor, M.R.C.S., London. Second Edition. Edinburgh: Maclachlan and Stewart. 1889.

Outlines of the Clinical Chemistry of Urine. By C. A. MacMunn, M.A., M.D. (Dub.). With sixty-four wood-cuts and plate of spectra. Philadelphia: B. Blakiston, Son & Co. 1889.

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Saunder's Question Compends, No. 1. Essentials of Physiology arranged in the form of Questions and Answers. Prepared especially for students of medicine. By H. A. Hare, B. Sc, M.D. (Univ. of Pa.). Second Edition thoroughly revised and enlarged. Philadelphia: W. B. Saunders. 1889.

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Saunders' Question Compends, No. 7. Essentials of Materia-Medica, Therapeutics and Prescription-writing, arranged in the form of Questions and Answers. Prepared specially for students of medicine by Henry Morris, M.D., late Demonstrator, Jefferson Medical College, etc. Phila.: W. B. Saunders. 1889.

Original Articles.

THE EARLY STAGE OF GENERAL PARALYSIS.[1]

BY CHARLES F. FOLSOM, M.D.
Visiting Physician, Boston City Hospital.

Lasègue, in his thesis as *professor agrégé* in 1853, described an initial stage of general paralysis of the insane, without the striking symptoms, then all but universally considered as necessarily marking that disease; and in a paper in the *Annual Report of the Academy of Sciences* in 1860, Brierre de Boismont published cases illustrating the same point, the most striking of which was that of a man who began thieving nearly eight years before the diagnosis of general paralysis was made. Voisin, in his exhaustive monograph on general paralysis in 1879, and Luys, in 1881, mentioned an obscure prodromal period, but yet, as in Lasègue's and de Boismont's cases, with marked, although not distinctive mental symptoms. It is not until the appearance of Professor Ball's work in 1883, and that of his former *chef de clinique*, Régis, in 1885, that I find in French special medical literature a clear statement of the very insidious and obscure character of the first symptoms of general paralysis.

Since Sander's article in the *Berl. klin. Wochenschrift* in 1876, the leading German writers on the diseases of the brain, especially Wernicke, Schüle, Krafft-Ebing and Mendel, in his admirable monograph, have described the beginning of general paralysis as being simply a change of character quietly developing, and, later, so slight an impairment of intelligence as to admit of patients continuing their usual occupations for a considerable time without any indications of diminished mental power noticed except by those who come in contact with them most intimately, and by them not thought of as indicating disease.

In Great Britain, Savage, in 1884, alludes to a prodromal stage in general paralysis, but as attended with developed rather than initial symptoms, although he admits that there are certain vague and variable nervous symptoms in which he always gives a guarded prognosis, and where he suggests that proper intervals of rest might prevent further progress; but Sankey, writing the same year, fails to recognize so early a stage. Clouston, in his *Clinical Lectures on Mental Diseases*, 1883, does not describe the initial or prodromal stage. Mickle, in the second edition of his painstaking monograph on general paralysis, in 1886, mentions a prodromic stage, but with symptoms marking some progress in the disease, although he states that "in the history of many a case do we find that some moral or other mental change in the patient, some perversion of the affective sentiments has been noticed long before the acknowledged onset of the disease"; and in the meantime it has happened that fortunes have been wrecked or characters ruined.

In this country, Spitzka, in his treatise on insanity, in 1883, defines the initial stage of general paralysis as so insidious in its development of symptoms that it is difficult to say anything positive as to its duration, and as marked by change of character, attributable to simple brain failure, especially in negligence of ordinary duties, or indifference to them.

The impression of general paralysis, however, almost universal among officers of insane asylums, and the medical profession, is of a disease in which the symptoms are early difficulty of speech, muscular tremor, and uncertain gait, accompanied by remarkable mental weakness and in many cases *manie des grandeurs*.[2] The only general medical text-books describing the obscure insidious stage are the second edition of Strümpell, and Pepper's System of Medicine; and excepting Meynert, the writers who have recognized it, so far as their opinions are given, agree with Voisin as to the impossibility of diagnosticating general paralysis in this early stage.

Indeed, the early period of the disease, as generally described, is a comparatively late stage, and excepting a few writers this statement held good, at least until a few years ago. With regard to the occasional articles in medical journals which have appeared from time to time within the last forty years, on the prodromal symptoms of general paralysis, reference has for the most part been made to particular acts rather than to a general mental state.

It is usually difficult for friends to describe the earliest traces which they observe of general paralysis, and I have never yet seen a case in which they suggested any suspicion of disease to the friends or the family physician. A distinguished pianist lost his fine appreciation and nice touch so that his conductor thought he had fallen off in practice. A wife spoke of her husband as being the opposite of himself. A daughter said that her mother did not seem the thorough lady she had always been. One was described as seeming different from himself, the change being indescribable; one as a little slower in speech and gait; another as slow and indifferent in dressing and apt to drop asleep; still another as seeming well, but disposed to put useful papers in his waste-basket, etc.

A man who recognized his own condition, said that he had not good will-power; and an Irish weaver, when his wife and daughter were trying to describe his earliest changed condition, which seemed to them purely ethical, interrupted them by aptly saying that he had lost his presence of mind. A number of cases have been described by Goldsmith and others, where a violent epileptiform or apoplectiform seizure was the first recognized symptom of general paralysis; but, in my experience, such attacks, like the unexpected and often at the time unexplained offences against decency or the law, have always been preceded for a considerable length of time by the initial indications. So, also, in those cases where a violent shock or an accident appeared to be the beginning, the real beginning was much earlier.

Indeed, a purely symmetrical impairment, mental and physical, is most difficult to detect or describe, and may entirely deceive even the physician, if he trusts to ordinary methods of examination entirely. A patient quite far along in the prodromal stage of paralysis, in this way, was erroneously made the subject of a clinical lecture, as illustrating physical and no mental signs of general paralysis. Another went almost directly from the consultation-room of a distinguished neurologist, with a certificate that he was of sound mind, to make some most unwise and embarrassing contracts, and then, after the excitement and exhaustion of a long railroad journey, wrote a letter giving his friends much anxiety, and causing them to at once hunt him up and take him home. He performed his clearly irresponsible act in such a seemingly responsible way in all particulars, that it would probably have been impossible to have had it correctly estimated by the courts. He has since died, a typical general paralytic, with all the symptoms of the books.

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[1] A paper (omitting reports of cases) read at the Annual Meeting of the Association of American Physicians, Washington, September 18, 1889.

[2] Bucknill and Tuke.

To the etiology of general paralysis I can add nothing new. As is well known, it arises most commonly under conditions of prolonged strain, mental, emotional, and physical, especially if joined with unaccustomed high living and alcoholic and sexual excess, or after syphilis. The Irishman who lives in great deprivation at home, where syphilis also is said to be rare as compared with the rest of Great Britain, seldom has general paralysis; but, as a hard liver in the great cities of Scotland, England and America, he has his full proportion. From five to nearly one hundred per cent. of general paralytics are reported by various observers as having previously had syphilis. Of Mendel's cases of general paralysis the percentage of syphilitics was seventy-five, and only eighteen per cent. in other forms of insanity — about four times as many; while Goldsmith found, by statistics collected in the Danvers Asylum, that six times as many general paralytics had previously had syphilis as the insane excluding general paralysis.

We must admit, I think, that taking into account self-deception of patients, and their conscious and intentional deceiving their friends and their doctor, at least two-thirds of general paralytics have previously had syphilis. If we assume, therefore, that one person in ten in a certain adult male community (from the age of twenty-one upward) has had syphilis, it appears that an individual having ever suffered from that disease has not far from twenty times as many chances of becoming a general paralytic as the rest of the community; and if the proportion should be one in twenty, the chances are respectively about forty to one, and so on. This proportion is too large to be accidental, and yet there are two reasons, beside the purely numerical one, why general paralysis cannot be accepted at present, at least, as being a stage of syphilis, namely, because, first, the usual remedies for syphilis, as I read the evidence, are of not the slightest benefit; and, secondly, because there is no known method of certainly differentiating, either clinically or post-mortem, those cases with and those cases without a previous history of syphilis. It goes without saying, that I exclude from consideration gross lesions of syphilis of the brain, of which endarteritis of the larger vessels is probably the most common, resulting in general cerebral degeneration, with symptoms somewhat resembling general paralysis.

To the pathology and morbid anatomy of general paralysis there has been no recent important contribution, unless we admit Meynert's theory, that preceding and causing the diffuse cortical encephalitis there is a functional vaso-motor disorder which he considers curable. His statement that the organic changes are marked, in point of time, by the patient's losing the power to realize his condition, is not supported by experience.

The question whether the diagnosis of general paralysis can be made in its actual incipiency is still under judgment. I do not know an instance where it has been successful. Indeed, it is not within my experience that a physician has been consulted so early. The absence of subjective symptoms and the lack of those naturally observed by others, as compared with the various forms of neurasthenia, for instance, are quite deceptive. But the change in personal traits or character, and the peculiar apathetic, indifferent, unconscious quality of the mental impairment, in uncomplicated cases, are unlike anything else. There is not the slightest doubt, however, that general paralysis can be diagnosticated with certainty far oftener than not, for a considerable length of time before what is usual now.

It is quite true that the signs of mental impairment may be ascertained only by a painstaking examination, that the patient may bear cross-questioning without manifesting any degree of loss of those finer qualities of brain, psychic and motor, coming last in a highly-organized and developed civilization, although it may at the same time be detected by the methods which I have suggested.

The very essence and nature of general paralysis imply and involve mental symptoms in some degree, and some motor impairment, however slight, even if only judged by the test of a minute examination of what the patient can do and how well or how ill he does it.

The symptoms may thus be recognized in a large proportion of cases, and at least suspected in most, certainly in those persons whose brains are so highly organized, who are so trained and cultivated that slight changes in the highest brain centres produce distinct, although difficultly appreciated, departure from their normal character and quality of mind. In an orchestral leader, for instance, the mental and fine mechanical operations are so complex and of such high order that the least fault is detected; in professional and business men a less degree of impairment is recognizable than in mechanics; in routine employments without much thought or nice muscular effort, a large degree of deterioration may be unnoticed. In day laborers an early diagnosis is simply impossible.

The earliest signs of general paralysis are of the slightest possible brain failure; if, for instance, a strong, healthy man, in or near the prime of life, distinctly not of the "nervous," neurotic, or neurasthenic type, shows some loss of interest in his affairs, or impaired faculty of attending to them; if he becomes varyingly absent-minded, heedless, indifferent, negligent, apathetic, inconsiderate, and although able to follow his routine duties, his ability to take up new work is, no matter how little, diminished; if he can less well command mental attention and concentration, conception, perception, reflection, judgment; if there is an unwonted lack of initiative, and exertion causes unwonted mental and physical fatigue; if the emotions are intensified and easily change, or are excited readily from trifling causes; if the sexual instinct is not reasonably controlled; if the finer feelings are even slightly blunted; if the person in question regards with a placid apathy his own acts of indifference and irritability and their consequences, and especially if at times he sees himself in his true light and suddenly fails again to do so; if any symptoms of cerebral vaso-motor disturbance are noticed, however vague or variable. Naturally there may be many or few of these indications in a given person. This group of symptoms seems very striking, but may be compatible with the performance of usual duties. They require careful and prolonged observation of the patient, and painstaking interrogation of his family and friends, for their detection. They are recognized perhaps as much from the peculiar quality of the mental impairment, difficult to describe, as from its degree, and often antedate, at least in the time of their recognition, perhaps not absolutely, any physical symptoms, which, when they appear, may be so slight as not to be appreciated for a long time, except as an unusual sense of weariness on exertion, and perhaps attributed to malaria or rheumatism. Commonly there is loss of flesh — slight, moderate or excessive. A very great or disproportinate loss of physical power, especially in the legs, I have found to be due to a complicating peripheral neuritis.

We must not overlook the facts that there are elements of uncertainty in the early diagnosis of general paralysis, that there are few forms of mental diseases in adult life that it may not simulate in obscure cases, and that it may be confounded with Bright's disease, epilepsy, hysteria, lead or malarial poisoning, cerebral syphilis, or the long-continued abuse of opium, alcohol, chloral, and the bromides, so that not seldom an absolute early diagnosis is impossible. But there is a peculiar, indescribable kind of mental impairment which, with the vague physical deterioration, if not obscured by other conditions, may be sufficient to decide the diagnosis. Even the expression of the face and the general appearance of the patient are often characteristic. There may or may not be slight confusion, a sense of fulness in the head, headache, insomnia. Except for unusual physical as well as mental fatigue following effort, the patient may feel entirely well and not complain of anything. There is no indication from the eyes or the reflexes so early; the muscular tremor is, as a rule, less than in functional nervous disorders; the speech may be not noticeably affected to the family, and may be only like that of a person with lips chilled by the frost or slightly under the influence of wine. It may be necessary to have the patient read or copy several pages or even be under close observation for several days before any defect is observed in the use of the muscles, or it may be necessary to test him in a new place or occupy him in unaccustomed ways.

Finally, perhaps the distinguishing feature of this stage of general paralysis is the fact that the change observed consists in a symmetrical mental and physical deterioration which, like all diseases in which a vasomotor element is prominent, varies very much from time to time. It begins, or is first noticed, in those acts requiring the most complicated and highly coördinated effort, in the functions and powers coming last in development of the highly organized and trained brain. As the mind becomes decidedly less able and the muscles less responsive, with less coördinating power, and finally weaker, the heavy and then staggering gait, the hesitating, stuttering, and finally unintelligible speech, and the progressive dementia, may be slow or rapid in their advance.

The prognosis of the pronounced general paralysis of the books is so unfavorable that there are only exceptional remissions of the symptoms which last so long as to justify a few writers in calling them cures. Early symptoms, however, which in men of forty years of age, so far as we now know, almost certainly mean death, when occurring in a man of sixty are not incompatible with a fair recovery. In the stage of general paralysis which I have attempted to describe, it is true that there have been thus far only partial recoveries. But the indications are that a certain proportion of cures may be expected with more satisfactory treatment.

The treatment of general paralysis has thus far been most unsatisfactory from the fact that it is begun only very late; because a rest of a few months often brings such relief that further treatment is abandoned; because a remission which may naturally come in the course of the malady is too apt to satisfy the patient or the friends that the disease is at an end; and because our therapeutic measures have thus far proved, as a rule, so ineffective that we cannot often get our patients to consent to a great sacrifice of time and money, and all that goes with it, for a cure that at best may mean only comfortable uselessness for many years.

The travelling or stimulating life usually suggested ends in aggravation of the symptoms. Entire mental rest in a quiet place in a sedative climate, with simple food, abundance of sleep and moderate exercise, result in such improvement that there is every reason to suppose that such measures, if fully carried out, might do more.

SUBSTITUTES FOR OPIUM IN CHRONIC DISEASES.[1]

BY J. F. A. ADAMS, M.D., OF PITTSFIELD, MASS.

Opium is the most conspicuous article in the pharmacopœia. Its extraordinary efficacy in relieving pain, the versatility of its powers, and its reliability in emergencies, give it a preëminent standing. It is generally recognized by the medical profession as the most indispensable of drugs. But, while surpassing other remedies in its beneficient effects, it is alike remarkable in its power for harm. Hence, its medical use requires a degree of caution not less than that with which the surgeon handles the scalpel. When to administer and when to withhold it, constitute one of the gravest of medical problems. There are times when the dangers and disadvantages of this most brilliant of drugs seem wholly out of proportion to its benefits. A growing dissatisfaction with opium is the motive of the present paper, which is designed as an argument in favor of restricting the use of opiates to a greater degree than has hitherto been the prevailing custom.

The disadvantages of opium are these: (1) In an overdose it is an active poison. (2) In ordinary doses its benefits are largely offset by various functional derangements. (3) Its use involves the danger of the opium-habit.

(1) *Opium in an overdose is an active poison.* This, which at first sight appears the greatest of its disadvantages, is, in fact, the least: for the very imminence of the danger compels caution, and the dose can be so regulated as to reduce this danger to insignificant proportions. Hence, in careful hands, fatal accidents from opium are of very rare occurrence.

(2) *In ordinary doses the benefits of opium are largely offset by various functional derangements.* This constitutes an objection to opium far greater than the preceding; for the secondary effects of this drug are almost always prejudicial. These effects include digestive disorders, constipation, impairment of the hepatic function, headache, depression, and various nervous disturbances. Oftentimes these effects tend to keep up the very condition of the system which led to its

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[1] Read at the Annual Meeting of the Association of American Physicians, September 19, 1889.

use: for instance, in gout, rheumatism and lithæmic neuralgia.

(3) *The use of opium involves the danger of the opium-habit.* That this habit is widespread there can be no doubt; for there are probably few physicians who are not cognizant of some such cases, and there are certainly many others which never come definitely to our knowledge. It is obviously impossible to get accurate statistics concerning a habit which is, for the most part, jealously concealed. The public prints are somewhat given to extravagant statements in this direction; but the estimate which places the number of opium-takers in the United States, exclusive of the smokers, at 150,000[2] does not appear exaggerated. In proportion to the number of alcoholic inebriates, this number appears insignificant; and yet it represents a vast amount of misery, for the slaves of opium are, in some respects, more wretched than those of alcohol. The worst feature of the opium-habit is, that its paralyzing influence upon the will renders it almost incurable. To renounce the habit is next to impossible without the aids which are offered by an institution. Even then relapses are the rule. A lady, whose case has come under my observation, has twice been "cured," as was supposed, in two different institutions, remaining three months in each. The first time she remained "cured" for just two weeks, and the second time she went direct from the institution to a drug-store to purchase morphia. The efforts of the excellent men who are lavishing their skill upon these unfortunate cases deserve to be better rewarded. That permanent cures are occasionally effected I know from personal observation, and yet the rarity of such cases is evidenced by the words of Dr. B. W. Richardson,[3] who says, as the result of a large experience: " I have never yet known an instance in which I could be quite sure that the fully confirmed habit has been absolutely or permanently abandoned I may have heard of such. I have seen none."

It has been charged[4] that the medical profession is largely responsible for the prevalence of the opium-habit. That some cases do result from opiate prescriptions cannot be denied; but it is my belief that, in the practice of educated and respectable medical men, such occurrences are very rare. Physicians are incessantly warning their patients against the dangers of opium, and, as a rule, administer this drug with the utmost caution. The prime causes of the opium-habit are undoubtedly to be found in the unrestricted sale of opiates, and in the multitude of proprietary nostrums containing opium. Among the latter are included nearly all of the alleged "cures for the opium-habit."[5] It is true that the drug is usually taken in the first instance for the relief of pain; but this is constantly done without a physician's advice. When ordered by a medical man the dose is so regulated as to counteract the pain, and no more; but when taken ignorantly the dose is likely to be so large as not only to relieve the pain, but also to allow an excess which may cause intoxication. In those cases of inebriety, attributable to physicians' prescriptions, the fault usually consists in the unlimited renewal of the prescriptions — a great abuse which needs legal restriction.[6] If physicians, instead of writing prescriptions for opiates, would dispense all such remedies themselves, much good would result.

No doubt opiates are sometimes administered unnecessarily, for it is in the nature of things that this should occur. The pleadings of an impatient sufferer must at times influence a sympathetic physician to give opiates against his better judgment. Our people are, to a great extent, both self-indulgent and neurotic. They refuse to bear pain, and are apt to prefer the doctor who gives the quickest relief. It is pleasanter to give a hypodermic injection than to refuse it to a suffering and unreasonable patient. These influences cannot be ignored, for even doctors are human — at times.

In acute cases the use of opium is comparatively safe; for in such the number of doses is usually not large, and the patient is wholly under the physician's control. In the last stage of incurable diseases the objections to its use are still less. But in chronic cases opium needs to be used with the greatest caution, for here the unfavorable effects upon the system are the most marked, and the formation of the opium-habit in such cases is particularly to be feared. The reason for the latter is that the necessity is of longer continuance, and the patient being under less constant supervision, is liable to continue taking the opiate without the physician's knowledge. It is necessary, therefore, in such cases to abstain from the use of opiates whenever possible. This necessity is generally recognized by the profession, but opinions must naturally differ as to what circumstances imperatively demand their use.

The usual reason for giving opium is the belief that no other remedy is capable of accomplishing the result desired. Opium has hitherto been almost the only reliable analgesic; but recent discoveries in therapeutics have done much to lessen our dependence upon it, since they have placed within our reach several safer remedies which are capable of being used as substitutes. The avidity with which the new analgesics are seized upon by the medical profession and their powers tested is an indication of the deep-seated antipathy to opium, and the desire to be emancipated from its rule.

The family physician has ample opportunity to observe the necessity for seeking out such substitutes. Feeling the responsibility not only for the present but also for the permanent well-being of his patients, and deeply interested in the future of the rising generation, he shrinks from giving present relief at the cost of ultimate harm. He must almost inevitably hold the secrets of opium takers — few or many — and, seeing the cloud which overshadows them and their offspring, must grow more and more determined that the future of other families shall not, if in his power to prevent it, become so darkened.

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[2] I. A. Loveland, M.D.: Quarterly Rev. of Narcotic Inebriety, October, 1888.

[3] Practical Notes on the Morphine-habit. Asclepiad, 1888, vol. v, No. 20.

[4] J. B. Mattison, M.D.: The Responsibility of the Profession in the Production of Opium Inebriety. Med. and Surg. Reporter, Philadelphia, February, 9, 1878.

Ibid. The Genesis of Opium Addiction. Detroit Lancet, 1884, vol. vii, p. 303.

I. A. Loveland, M.D.: The Morphine-habit. Quarterly Rev. of Narcotic Inebriety, July, 1888.

Ibid. The Abuse of Opium. Same Journal, June, 1889.

How the Opium-habit is Acquired. Ed. Journal of Amer. Med. Association, September 22, 1888, referring to Virgil D. Eaton, in Popular Science Monthly.

The Use and Abuse of Opium. F. E. Oliver, M.D. Third Annual Report Massachusetts State Board of Health, 1872.

[5] B. F. Davenport, M.D., Seventh Annual Report of State Board of Health, Lunacy and Charity of Massachusetts, 1886, p. 190.

[6] Loveland. The Refilling of Prescriptions. Quarterly Rev. of Narcotic Inebriety, April, 1889.

J. C. Wilson, M.D.: The Causes and Prevention of the Opium-habit and Kindred Affections. Boston Med. and Surg. Journ., November 22, 1888.

The strength of the revolt against opium is shown in these words of Dujardin-Beaumetz.[7] "The older I grow the more chary I become in the use of morphine, for, despite the marvellous powers of this alkaloid, which is by far the most active of analgesics, its dangers and disadvantages are such that I reserve its employment for exceptional cases only."

We will now pass to a brief consideration of some of the remedies which can properly be regarded as substitutes for opium in chronic diseases.

FOR THE RELIEF OF PAIN.

The discovery of the analgesic powers of the antipyretics is a notable event in therapeutics. Making due allowance for the enthusiasm which their novelty has excited, the fact is definitely established that these remedies are valuable additions to the pharmacopœia. It was not to be expected that they should be free from drawbacks, and naturally each has its defects and limitations. The two oldest of the group, antipyrin and acetanilid, have already been sufficiently tested to have their sphere of action pretty clearly circumscribed. Phenacetine is growing in favor; while exalgine has already made an excellent impression. These remedies have well-grounded claims to be regarded as rivals to opium. Their power for relieving pain is extraordinary, in many cases equal and occasionally superior to opium. They appear as a rule, however, less prompt and less certain, especially when pain is very violent. As an offset to this inferiority, they have the advantage over opium of being less dangerous, causing less derangement of the system and not leading to any enslaving habit. Their effectiveness in migraine; where opium is given, if at all, only as a last resort, and in the milder forms of neuralgia, is very striking. But the essential question which now concerns us is, whether they can be depended upon in severe forms of pain in which opium would otherwise be a necessity. That they do fulfil this indication much evidence is already on record.

Antipyrin, the oldest of this group, besides its antipyretic, antispasmodic, antidiabetic, and other powers, has proved itself a most valuable analgesic. Among the many writers who have borne witness to its efficacy in this direction, several have distinctly described it as a substitute for opiates. The following statements of this nature are referred to in Dr. Griffith's article on "General Therapeutics," in the *Annual of the Universal Medical Sciences* for 1889.[8] Fiske[9] reported that one patient who had used morphia for headache, obtained in antipyrin a satisfactory substitute. Milne[10] adds his testimony to its value in allaying pain and producing sleep, and it has with him almost entirely supplanted opium for these purposes. Wolfe[11] recommends it in painful conditions in which it is desired to avoid morphia. Bahnson[12] has used it with success in relieving pain, even in cases where opium has failed. Norton[13] found the relief of pain by it in dysmenorrhœa greater than that afforded by opium and belladonna suppositories.

As to the objections to antipyrin, the principal one is its depressing effect upon the heart when given in large doses. It is therefore contraindicated where the circulation is feeble; and the dose needs to be always cautiously regulated. Its use is also attended at times with other unpleasant symptoms, as cutaneous eruption, gastric disturbance, coryza, etc., which are to be regarded as inconveniences rather than dangers.

My own experience with antipyrin has given me a high opinion of its analgesic powers. Having ordinarily used it in five or ten grain doses for an adult, symptoms of depression have been very rare and never alarming; and the other unpleasant effects have been practically absent. Yet even in these moderate doses the effect in relieving pain has been very satisfactory. The cases of a chronic nature, aside from headache, in which it has proved itself efficient have been chiefly neuralgia and rheumatism. The relief has been complete in some cases, and incomplete in others; but the cases in which the remedy has entirely failed have been a very small proportion. Among the many cases of success with antipyrin, in my own practice, the three following are selected because in two of them it was substituted for morphia and proved equally efficacious in relieving pain, and also because it was used for such long periods that there seems to be no room for error. The first is a case of intercostal neuralgia, the second is one of protracted pain from the pressure of a morbid growth upon the brachial plexus, and the third is a case of facial neuralgia in which the effect was admirable, notwithstanding a weak heart.

Case I. Miss B., aged forty; a neurotic invalid for many years; had been subject for five years, or more, to frequent attacks of intense intercostal neuralgia of left chest. For this she had been accustomed to resort to morphia, which alone would give relief. On March 26, 1888, I saw her in one of these attacks and ordered antipyrin, five grains every four hours. She was, as she expressed it, "wonderfully relieved," the effect being more prompt and decided than that of morphia. Subsequently, whenever she felt any return of pain, she would take a few doses of antipyrin and the attack would be aborted. The only severe attack which has since occurred, accompanied an attack of acute indigestion in the following May. This also was relieved by antipyrin. The correction of a slight uterine displacement in August was followed by a general improvement of the health, and the neuralgia has not returned since that time. She has taken no morphia since the antipyrin was first prescribed.

Case II. Mrs. D, aged seventy-four. Twenty-two years ago this patient suffered an amputation of the left breast for supposed malignant disease. In August, 1886, she began to suffer from pain and numbness of the left hand and forearm, which were at times accompanied with swelling. Pressure upon the nerves was suspected, but nothing could be found in the axilla until more than a year later, when a hard mass was detected high up in the axilla, firmly adherent to the neck of the scapula in front. This has since grown upward until now a growth of extreme hardness has made its appearance, both above and below the clavicle. For nearly three years this lady was a constant sufferer. Massage and galvanism aggravated the pain and blisters gave only temporary relief. At the end of a year she had become so worn out with pain that she began to take morphia, one-eighth to one-quarter grain at bedtime. This produced sleep, but caused so much nausea and depression the following day that she took it as rarely as possible.

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[7] New Medications, p. 268. Translated by E. P. Hurd, M.D. The Physician's Leisure Library. George S. Davis, Detroit, publisher.

[8] In this article by Dr. J. P. Crozer Griffith, of Philadelphia; and also in the article with the same title in the same publication for 1888 by Drs. Pepper and Griffith, are found digests of the several reports upon this and the other new medications during the two years ending January 1, 1889 For later reports see the Therapeutic Gazette for the present year.

[9] Boston Medical and Surgical Journal, July 12, 1888.

[10] Weekly Medical Review, February 4, 1888.

[11] Therapeutische Monatshefte, June, 1888.

[12] North Carolina Medical Journal, July, 1888.

[13] Medical and Surgical Reporter, February 25, 1888.

On January 23, 1888, I began giving her antipyrin in five-grain capsules, three times a day. This gave great relief during the day, but it was still necessary to take morphia at night. The pain now involved the whole arm and shoulder and the supra-scapular region. On March 5th, there was numbness of the thumb, index and middle fingers. On March 24th, there was complete anæsthesia of the ulnar side of forearm and hand, with hyperæsthesia of the radial side. Soon after this, all tactile sensation was lost in the hand and forearm, but the deep seated pain continued. So much disturbance followed the use of morphia that the antipyrin was increased to ten grains, three times a day. With this amount she became so comfortable that the morphia was only occasionally resorted to. She experienced no unpleasant effects from the antipyrin and was very happy to escape the nausea, constipation, and general depression which always followed the use of morphia. She tried several times to discontinue the antipyrin, but found it indispensable, as the pain never ceased unless it was taken. On the 8th of last June the antipyrin had ceased to have any effect, and the pain had become most excruciating. I then began giving her hypodermic injections of morphia, one-half grain at bedtime and one-quarter grain after breakfast. This was continued until June 20th; after which the pain being less severe, the night injection alone was given, and that in diminishing dose, until June 28th, when the pain ceased entirely and has not since returned. The arm is now completely paralyzed, and without sensation. The nerves are apparently so tightly compressed as to have finally stopped the pain.

The interesting feature of this case consists in the fact that for over sixteen months this patient was kept comparatively comfortable by antipyrin, and was obliged to take but little morphia, which latter drug was avoided, not from fear of the opium-habit but on account of its disagreeable after-effects.

Case III. Mrs. S., aged forty-eight. This lady has an immense uterine fibroid. She had acute rheumatism five years ago, which has left her with a mitral regurgitation. Has been greatly depleted by menorrhagia for many years. In good flesh, but feeble and suffering much from faintness and other heart symptoms. I was called to see her October 31, 1888, on account of a severe attack of facial neuralgia. Antipyrin was given in five-grain capsules, three times a day, from which she obtained prompt relief She felt no faintness nor increased weakness. Digitalis, which she had previously been taking, was continued at the same time.

This case is mentioned, because it was one in which large doses of antipyrin were contraindicated; and the propriety of giving it at all might be questionable; but the small amount given gave complete relief without any depression.

Acetanilid has already proved itself an analgesic of great value. By Dujardin-Beaumetz[14] it is even placed before antipyrin in this respect; but most other writers give it the second place. It possesses the advantage over antipyrin of being far less depressing and causing no eruption. Its fault is, that in large doses it produces cyanosis; but this appears to be less of a danger than a warning against excessive doses. The doses used by myself have usually been five and ten grains; from these neither cyanosis nor any other unpleasant effect has ever resulted. The effect upon pain has generally been less than that following similar doses of antipyrin; and it has latterly seemed best to give seven or eight grains as a minimum dose, instead of five. The chronic cases in which it has shown itself capable of replacing opiates have been rheumatism, especially in the form of lumbago, and dysmenorrhœa. In several cases of lumbago its administration was followed by relief as prompt and complete as would have resulted from hypodermic injection of morphia. In dysmenorrhœa, I have given it to several young ladies, whose sufferings had previously been so severe as to require the use of morphia. In all of these, the relief following acetanilid in one or two doses of five or ten grains, has been so prompt and complete as to surprise and delight the patients. Larger doses than these have been given by others with entire safety and a larger degree of success than has attended my own experiments with the minimum dose. Dr. Austin Flint,[15] for example, reports an obstinate case of sciatica not only relieved, but actually cured, in forty-eight hours by doses of forty to fifty grains.

Phenacetine. — This remedy, of more recent discovery than antipyrin and acetanilid, has been found by numerous observers to resemble them strongly in its analgesic powers. It appears to be safer than either of these remedies, since it produces neither depression nor cyanosis, unless used in excessive doses. For these reasons it promises to be a valuable addition to the pain-relieving medicaments. My own experiments with this drug have tended to confirm the views of others; but do not yet justify any decided expression of opinion as to its value as a substitute for opium.

Salicylic acid, and more especially its sodium salt, should be included in this list, on account of their favorable action in relieving the pain of chronic rheumatism. Though their effects are less certain and less brilliant in the chronic than in the acute form of this disease, yet they are of marked value in a large proportion of cases. The relief to pain is obtained through their curative influence on the disease — a marked contrast to the action of opium — which, though more efficient in relieving the pain, acts otherwise most unfavorably.

Other analgesics of great value are quinine, in neuralgia, especially the malarial variety; cocaine, used hypodermically; galvanism and massage. To these may be added all of those hygienic measures which, by imparting vigor to the system, tend to remove the causes of pain.

TO INDUCE SLEEP.

The dangers of opium, when used as a hypnotic, are even greater than as an analgesic; for pain, which is to some extent an antidote to opium, protects the system in part from its toxic influence. In simple insomnia, though often resorted to by the laity, it is rarely used by physicians, but is reserved for those extreme cases where other remedies fail. Until recently the only drug equalling opium in hypnotic power has been chloral hydrate; but this remedy possesses disadvantages scarcely less than those of opium itself. When, therefore, the milder hypnotics prove ineffectual, we naturally desire some safer remedy than either opium or chloral, but equal to them in power. This wish is at last realized in the discovery of the new hypnotics, paraldehyde, hydrate of amyl and sulphonal.

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[14] De l'Acetanilide (Antifebrin), comme Medicament Sédatif au système nerveux. Bull. gén. de thérap., 1887, vol. 113, p. 97, transl. Therap. Gazette, 1887, 3 series, vol. iii, p. 577.

[15] A Case of Sciatica Treated with Large Doses of Antifebrin. New York Medical Record, December 1, 1888.

Paraldehyde is an excellent hypnotic, apparently as safe as the bromides, free from deleterious effects, though rather uncertain in its action; and only objectionable on account of its unpleasant odor, which is imparted to the breath. My own experience has convinced me that it is a valuable substitute for opium. As an illustration of its usefulness, the following case is selected; because in the last stage of a distressing disease, it produced sleep after opium had been used without success.

Case IV. Mr. D., aged seventy-five, was attacked in May, 1888, with urgent cardiac symptoms, and was found to have chronic Bright's disease. He was seen by me from time to time in consultation. In the following August his condition had become very distressing; both lungs were congested at the base, there was effusion in both pleuræ, and the dyspnœa was very urgent. He could not lie down, and sleep was almost impossible. All sorts of anodynes were tried without effect; even morphia became useless. On August 22d, he was given paraldehyde in doses of half a drachm every four hours, sometimes increased to one drachm, and sometimes at intervals of two hours, according to circumstances. The effect was delightful; sleep was induced in from ten to fifteen minutes. He was able to lie down, and while asleep the breathing became much quieter. He would wake refreshed. The heart was not weakened, but, on the contrary, was temporarily strengthened. He died on the 7th of September; but the last sixteen days of his life were rendered quite comfortable by the paraldehyde. The agony of dyspnœa which he had previously suffered gave place to tranquil sleep, with diminished suffering during the waking intervals.

Hydrate of amyl is generally preferable to paraldehyde, being more reliable as well as more agreeable. It is found efficient in extreme cases of insomnia, including those due to the opium-habit. It is also available when a weak heart forbids the use of chloral.

Sulphonal is at present far more extensively employed than either paraldehyde or hydrate of amyl. Its agreeable effects and freedom from taste have already won for it an extraordinary popularity. It is applicable in all forms of insomnia, in insanity, and in the opium-habit. It is nearly free from danger, and induces no habit. It is not, however, free from objections. These have been found by Dr. Griffith[16] to be the following:

(1) Slowness of action.

(2) Effect prolonged into the following day.

(3) Uncertainty of dose.

(4) Unpleasant after-effects; which are, mental excitement, nausea, vomiting, dizziness, headache, languor, exhaustion, depression and a staggering gait.

(5) Frequent failure to produce sleep.

This author, while favorably impressed with sulphonal, expresses a decided preference for paraldehyde and hydrate of amyl; especially the latter.

My own experience with sulphonal has been very favorable. No unpleasant effects have been observed, except an occasional languor or drowsiness the following morning. I have also observed an uncertainty in its action; the same patient getting a retarded or imperfect effect on one occasion, and again a very powerful effect from a less dose. I have usually given ten to fifteen grains as an initial dose, and have rarely exceeded twenty, which amount appears quite safe and is ordinarily sufficient.

CHRONIC DIARRHŒA.

In chronic, as in acute diarrhœa, it is probable that no remedy has been used more largely than opium. The effects of this mode of treatment, however, are far from satisfactory. Among the veterans of the war, a very large number are still suffering from this disease. From official sources[17] I have learned that there were on September 6, 1889, 63,523 pensioners on the rolls, whose disability consists entirely of chronic diarrhœa; and this does not include cases in which pension is allowed for chronic diarrhœa and other disabilities. About one-eighth, therefore, of all the pensioners are disabled by this cause alone. That so great a number of cases remain uncured at this date, more than twenty-four years after the close of the war, during which most of these cases originated, is sufficient evidence that their treatment, whatever it has been, has not been attended with success. These men are ill-nourished and feeble; their diet is necessarily limited to a few articles of food, and exhausting attacks of diarrhœa are brought on by any trifling error of diet or change of temperature. These attacks often induce dysenteric symptoms. A small proportion only of these cases are probably at present under active treatment. Many rely upon some special remedy for temporary relief; some have discarded all medicine and try to keep the disease in check by diet alone. As might be expected, some have become opium-eaters,[18] though no such cases have come under my notice. Until recently, it has been my own custom to prescribe opium to some extent in such cases, though in very small doses; but during the past year I have treated these cases antiseptically with far better results. The remedy chiefly used, in my cases, is the sodium salicylate, in five to ten grain doses, three or four times a day. Though the number of cases has not been large, the results have been so far very satisfactory. In almost all of the cases the diarrhœa has been checked in two or three days, and the benefit has been more lasting than that following any other treatment. The digestion has improved, a greater variety of food can now be taken, and the various nervous symptoms which are apt to accompany this disease have been greatly relieved. Besides the soldiers, several of my cases have been ladies. In two of these depression of spirits has been a prominent symptom, and the relief to this has been quite remarkable.

Salol has also been used by me with success in chronic diarrhœa.

Naphthalin, which is highly recommended for the treatment of chronic diarrhœa by Henry,[19] Wilcox,[20] Peabody,[21] and others, I have not yet tried.

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[16] Remarks on the Unpleasant Effects of Sulphonal. Therap. Gaz., May 15, 1889.

[17] Letter from the Commissioner of Pensions to Senator Dawes, to whom I am indebted for this information.

[18] Ira Russell, M.D.: Opium Inebriety. Quarterly Rev. of Narcotic Inebriety, Jan., 1888.

[19] Antiseptic medication, Trans. Assoc. of American Physicians, vol. iii, 1888.

[20] St. Louis Med. and Surg. Journal, March, 1887.

[21] Boston Med. and Surg. Journal, Feb. 24, 1887.

The antiseptic method, which has been extensively and successfully used in the acute forms of diarrhœa, promises to be very serviceable in the chronic form. Being entirely safe it may be used experimentally, without hesitation, and the effects thus far render it highly probable that it will prove of great benefit to a large proportion of the many thousands of war veterans who still suffer with this disease.

All of the antiseptic remedies which have proved valuable in chronic diarrhœa may properly be classed among the substitutes for opium.

The two following cases of chronic diarrhœa are appended as illustrations; one of them being an old soldier, and the other a lady.

Case V. J. C., aged fifty-four, contracted diarrhœa in the army, and has suffered from it ever since the war. His stools are usually watery; when diarrhœa is relieved the bowels become constipated. He has to be very careful about eating; has grown very thin and weak; has much headache and dizziness; has been treated by myself at times for twenty years, and also by other physicians, with only temporary relief. On February 21, 1889, he came to see me with an unusually severe attack of watery diarrhœa, which had brought on dysenteric symptoms. He had from four to seven stools daily, containing mucus and blood. He had also much pain in the bowels, hips and legs, with headache. I ordered the sodium salicylate, ten grains four times a day in solution with glycerine and water. He came to see me eight days later, and reported that the symptoms were greatly relieved on the second day. Since then there had been one or two dejections daily, thin, but without blood or mucus; all of the pains had ceased, including the headache. The appetite was improved. He says he has never had any medicine since leaving the army which has affected him as favorably as this. He called again June 15th: he had then had two attacks of watery diarrhœa since March 1st without mucus or blood. Each time he resumed the use of the sodium salicylate and was relieved entirely in three or four days. He now has two or three dejections daily which are unformed but not watery. His general condition is much improved.

Case VI. Mrs. G., widow, aged forty-five; was first seen by me in August, 1884. She had then suffered for some years with chronic diarrhœa, for which she had been treated without benefit. I gave her pills of nitrate of silver one-sixth of a grain, and opium three-quarters of a grain, three times a day, which checked the bowels for the time being. She was not cured, however, for the least error of diet brought on a return of the diarrhœa, and the movements were always watery. Her diet was restricted of necessity chiefly to bread and eggs. Neither meat, vegetables, nor milk could be digested. There were constant dyspeptic symptoms, emaciation, and great depression of spirits. Whenever diarrhœa returned severely she resorted to the pills, whose proportions were several times changed to find the minimum effective dose of opium, which proved to be one-quarter grain combined with one-quarter grain of the nitrate of silver.

In August, 1888, I gave her the sodium salicylate, five grains in capsule, three times a day after meals. One week later she reported that she had one stool daily of more consistent character than for years. There was much flatulence, however, and the experiment was tried of adding iodoform one half grain to each capsule. On September 27th, she reported that she was improving, but had occasional slight returns of diarrhœa, and the digestion was not very good. The sodium salicylate alone was thereafter given as at first. I did not see her again until January 28th, when she informed me that she had had no diarrhœa at all since September 27th. The digestion was better, though still not perfect; she could eat many articles of food which she had not been able to touch for years; she had gained much flesh and strength, and, above all, the depression was gone, and she was in the best of spirits. She had then taken the sodium salicylate continuously for five months. She said she thought, from the exhilarating effects, that it must be a stimulant. Since then her health has been excellent, and there has been no return of the diarrhœa. She has taken no opium nor any other medicine since January.

In bringing this paper to a close, let me say, by way of recapitulation, that we now have remedies at command which may be used instead of opium in many, if not all, of the chronic affections in which this remedy was formerly our main dependence. For producing sleep and for the treatment of chronic diarrhœa, we have at present certain hypnotics and antiseptics which are not only as efficient, but so much more satisfactory that we may practically lay opium aside, to be used only on rare occasions. As an analgesic, opium still stands at the head of the list for promptness and certainty; but the antipyretics which have been mentioned in this paper are capable of replacing it in probably the majority of chronic cases, and the relief which these agents afford is attended with less disturbance of the system than that which is induced by opium. In rheumatism, opiates have been very largely superseded by the salicylates.

In my own practice, opium has become a much less important element than it was a few years ago; and this change is attended with great satisfaction to myself, partly because, with other remedies, better results are obtained, and partly because the danger of helping to form the opium-habit is thereby much lessened. Slight as this dreaded danger may be when opiates are prescribed with caution, yet the danger is amply sufficient to cause us to rejoice in the recent valuable additions to the list of remedies which have come to be recognized as substitutes for opium.

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A STUDY OF MALARIAL FEVER IN EASTERN MASSACHUSETTS.[1]

BY CHARLES H. COOK, M.D., OF NATICK.

Until within the last four years intermittent fever, as an epidemic, was unknown in Eastern Massachusetts. Since the summer of 1885, it has prevailed, to a greater or less extent, in at least twenty-two cities and towns, — not counting places where there have been sporadic cases, — in the counties of Middlesex, Norfolk and Worcester; chiefly, however, in Middlesex County.

The geographical distribution of the disease is very interesting, when considered in connection with the following statement by Dr. Stimson (quoted by Dr. Holmes in his Boylston Prize Essay) in his memoir of Hopkington in the Historical Collections: "This town is situated thirty-two miles westerly from Boston.

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[1] Read before the Medical Section of the Massachusetts Medical Society at the Annual Meeting, June 11, 1889.

There are two ponds in the town, from one of which issues one of the extreme branches of the Concord [now the Sudbury] River, and from the other, one of the extreme branches of the Providence [now known as the Blackstone] River. One of the extreme branches of the Charles rises in its southerly part. . . . Before the swamps were cleared and drained, the inhabitants used to be subject to the *fever and ague;* but since, there have been no complaints of that kind in the town."

If we study the locations of the twenty-two towns and cities before referred to, we find that they are situated on some one of the three streams which have each a branch rising in Hopkinton. On the Charles River the disease has prevailed in Milford, Bellingham, West Medway, Sherborn, Dover, South Natick, Wellesley, Needham, Dedham, Newton, Waltham, Weston, Watertown, Brighton and Cambridge, — cases in the vicinity of Fresh Pond. (No returns have been received from Franklin, Norfolk, Medfield and West Roxbury.)

On the Sudbury River malaria has prevailed in Ashland, Framingham, Wayland, Sudbury and Concord. On the branch emptying into the Blackstone River it has appeared in Hopedale, but not in Mendon and Blackstone so far as I have been able to ascertain. In the latter towns, however, the villages are not situated on the stream in question. It has been quite prevalent in Hopkington, the source of these three branches.

It has not appeared in Bedford, Carlisle, Chelmsford, Billerica and Lowell, — towns situated on the Concord River, — which river is formed by the junction of the Assabet and Sudbury Rivers at Concord. Neither has it gone up the Assabet from Concord to any extent, since only Maynard and Hudson report any cases, — the former, *one* as originating there, — the latter, "several well-marked cases during the past two years;" while Acton and Stow claim immunity; Marlboro', Northboro', Westboro' and Worcester, all situated northerly and westerly from Framingham and Hopkinton, have been free from the disease.

Of the towns near, but not adjacent to these rivers, Hyde Park reports that "we have some affections which have of late been attributed to malarial influences;" and a physician in Bedford, which is on the Concord River, writes: "I have not had a *true case* of intermittent, but I have had several cases that took on an intermittent character at some time during the fever. Most of the cases appeared in 1887–88; some in Lexington and part in Bedford." In Quincy, "there have been several sporadic cases within the past four years," and "malaria, not distinctly intermittent fever, has appeared to be an element in the cause of many cases of sickness."

Clinton, Leominster, and West Boylston, on the Nashua River, report entire freedom from the disease, and the same is true of Arlington, Lexington, Brookline, Jamaica Plain, Milton and Foxboro', while Braintree reports "three or four cases in the last few years," and Walpole a few cases, but no prevalence of the disease. It is very evident from the returns thus far received, that, as has been already stated, intermittent fever as an epidemic, or even to any extent, has been confined to those streams which have each one of them a branch from Hopkinton, a town where, in the early part of this century, "fever and ague" was indigenous.

Is this only a coincidence? Who will answer the question?

After this brief and very imperfect survey of the field in general, it may be of interest to study more in detail some features of the epidemic in two or three towns, especially Framingham and Natick.

In South Framingham, in the summer of 1885, intermittent fever made its appearance as an epidemic, and it has prevailed in that and other parts of Framingham until the present time.

In the summer of 1886, it appeared in that portion of Natick familiarly known as the "West Part," a locality west of Natick village, and also west of Lake Cochitnate and Lake Cochituate reservoir. Very soon it become more or less prevalent in other parts of the town, especially in Felchville and on "Nebraska Plain."

I quote from Dr. Z. B. Adams's very interesting paper[2] on "Malaria in Eastern Massachusetts," read at the annual meeting of this Society in 1886, a description of the physical characteristics of the malarial region in South Framingham:

"The soil of South Framingham is a sandy loam of little elevation, resting upon an extensive bed of quicksand, which underlies all of the adjacent country, and is of varying depth and indefinite extent. This quicksand everywhere contains water, so far as known.

"On the south and east of the village lies a wide swampy region of some three hundred acres in extent, called Guinea Meadows, constituting the watershed of Beaver-dam Brook, a stagnant, obstructed stream, which empties into Lake Cochituate. These swamps, which are partly wooded, are composed of a retentive peat, spongy, and in some places of great depth. Into this bog the sewage of the village filters, or is led by means of ditches and drains."

Beaver-dam Brook, which drains the Guinea Meadows and empties into Lake Cochituate, flows through West Part, where malaria first found a foothold in Natick. The soil of this locality is also a sandy loam, with a subsoil of clay, and, very probably, quicksand near the Framingham line.

That portion of Felchville where malaria has been most prevalent, drains by gravity into a hollow south and west of the village. Just across this hollow lies "Nebraska Plain."

The soil in Felchville is gravel with a subsoil of clay; that of Nebraska Plain is gravel, with a subsoil largely of sand. The latter has an elevation of twenty to thirty feet above Lake Cochituate.

Attention is here called to the fact, — is it only a mere coincidence? — that the malarial districts in South Framingham and Natick are either closely connected in some way with marshy places which receive sewage drainage by gravitation, or else are upon a stream which drains such a locality. In connection with this may be mentioned another interesting fact. About seventeen or eighteen years ago the Boston Water Board built several settling basins on Pegan Brook, near its junction with Lake Cochituate, for the purpose of intercepting, so far as possible, the solid matter of various kinds which, through many channels, found its way into this brook. In the summer of 1888, these dams were taken away, the solid matter at the bottoms of the basins removed, and the banks were gravelled. At no time, neither before the dams were removed nor while the work of excavating was going on, was there any outbreak of intermittent fever, either in the immediate vicinity of these basins or in that part of Natick village situated in the course of the prevailing winds from the direction of these basins.

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[2] Med. Comm. of the Mass. Med. Soc. vol, xiii, No. V, 1886, p. 615.

As we have already stated, malaria *as an epidemic disease*, was unknown in Eastern Massachusetts until 1885. The opportunity thus afforded for a study of its natural history as influenced by the direction of prevailing winds, variations of temperature, mean temperature, rainfall, and barometric variations, far surpasses that which is afforded in a section where it has always prevailed.

It is greatly to be regretted that the physicians in the cities and towns where it has appeared, have not from the first kept accurate records of the dates and locations of the cases which came under their care. Had this been done there would have been available a mass of invaluable material for the study outlined above.

Through the kindness of physicians in Framingham and Natick, who, at quite an expense of time and labor, have looked through their records for these years, material has been collected sufficient for an interesting analysis of over six hundred and fifty cases.

For greater convenience in the study of these cases, as related to rainfalls, they have been divided into four classes.

(I) Where there was no rainfall for at least six days before either an outbreak or a marked increase in the number of cases, and no rain during the outbreak. (All cases which developed while there was less than half an inch of rain are included in this class.)

(II) Where there was rain at some period six days before, but no rain during the outbreak.

(III) Where there was no rain before, but rain during the outbreak.

(IV) Where there was rain both before and during the outbreak.

	Year.	No. Cases.	Per Cent.	Remarks.
Class I.	1886	66	10	No rain either before or during the outbreak.
	1887	91	39½	
	1888	115	44	
Class II.	1886	60	36½	Rain before, but none during, the outbreak.
	1887	60	26	
	1888	75	29	
Class III.	1886	29	17½	Rain during, but none before, the outbreak.
	1887	16	7	
	1888	19	19	
Class IV.	1886	9	5½	Rain both before and during the outbreak.
	1887	63	27	
	1888	20	7½	

Note. — In the preparation of this and the following tables the writer was very kindly allowed free access to the meteorological records of the Rev. Daniel Wight, of Natick.

In the following table the months are selected because they are the months in which intermittent fever was most prevalent.

Out of the twenty-eight months here tabulated, in eighteen the rainfall was *less* than the average, and in ten it was *more* than the average.

Table showing Average Monthly Rainfall from April to October for 1885–88, *compared with the monthly average for the ten years* 1873–82.

Date.	April.	May.	June.	July.	Aug.	Sept.	Oct.
1873–82	4.24	2.61	2.87	3.48	4.14	2.59	3.51
1885	5.08	3.89	**2.31**	**1.71**	5.70	**1.63**	5.00
1886	**1.70**	2.90	**.91**	**2.87**	**3.53**	3.35	**3.18**
1887	**4.04**	**.87**	**2.27**	**3.23**	**3.38**	**.98**	**2.36**
1888	**3.02**	3.95	**1.71**	**1.20**	8.68	9.88	4.41

Figures in heavy type indicate the months in which the rainfall is *below* the average.

A table of average monthly temperatures (omitted) shows that in 1885, the year in which the intermittent fever became an epidemic in Framingham, the months of special prevalence, August, September and October, were colder than the average for ten years; that in 1886, when it extended to Natick, the entire year, with the exception of April and November, was colder than the average for ten years; and that April alone is an exception in the months of greatest prevalence. In 1887 May and July are the exceptions, and in 1888 June and August. It is worthy of especial note that from July, 1885, the beginning of the epidemic, to October, 1888, out of twenty five months there are nineteen which were colder than the average.

It is a fact worthy of note, even though it may be of no practical importance, that it is shown by the table (omitted) that the barometer ranged *higher* every month but August and October for the four years of the epidemic, when compared with the preceding groups of four years; and it is shown by the second table that the range during the years of the epidemic, compared with the ten years' average, was higher in every month but August.

On January 27, 1887, a case developed in South Framingham, Dr. Palmer's child, where the average temperature for the day was only 8° F.; the morning temperature was –3° F.; the average for the six days before was only 35.11° F. — a fall of 19° F. during the night; 1.85 inches of rain on the 24–26th, and three inches of snow the 26th.

SUMMARY.

(1) That the disease seems thus far to have been limited to the cities and towns along the Charles and Sudbury Rivers and the branch of the Blackstone.

(2) That it seems to have travelled to the *East* rather than to the *West;* that is, in the direction of the prevailing winds, rather than against them.

(3) That it seems to have developed and increased in seasons *below* the average temperature equally well as in those above.

(4) That some of the marked outbreaks occurred in cold and wet periods, as well as in hot and dry seasons.

(5) That an "essential," as given by at least one authority — namely, that there must be an average temperature of at least 58° F. for twenty-four hours to *develop* the disease — does not hold good in this analysis; neither does another "essential" of an average temperature of at least 65° F. for twenty-four hours to produce an *epidemic*.

(6) That it seems to prevail more extensively in regions near wet and marshy localities than in regions near shallow bodies of water, even though the water has been the depository of sewage for years.

(7) That the marshy and wet places where it has prevailed most have received sewage-drainage either by sewers or by gravitation.

While I would not presume to say that any of these facts are conclusive, yet I trust it is not too much to claim that they are suggestive.

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TREATMENT OF PNEUMONIA.

BY AN OLD M. M. S. S.

On his return to the city a few days ago the writer found upon his table a copy of a paper on "The Mortality of Acute Lobar Pneumonia," by C. M. Townsend, M.D., and A. Coolidge, Jr., M.D. He read this paper with great interest, not to say avidity. It is a remarkable document, of especial moment, very able and trustworthy, and one that must have a permanent and ever-increasing value. They found that under all kinds of treatment from the "heroic" to the "expectant," for seventy years past, in the one thousand cases they examined, "treatment . . . has not . . . influenced the mortality rate;" and that "treatment has not influenced the duration of the disease or its convalescence." These results are not surprising to one educated and brought up in the old practice — and who had observed much of that old practice, had followed it somewhat, but had early left it for milder if not more rational methods, with less and less drugging, even to non-interference. He had seen, as he thought very clearly, that, in spite of bleeding, blistering, nauseating and otherwise disturbing the patient, the disease itself pursued its own peculiar and destined "succession of processes" unimpeded by the distressful treatment — except in so far as the patients' comfort was abridged and their vitality reduced by it. He abandoned "the old way" at no small risk of popular disfavor and professional denunciation — for the people delighted in impressive measures; and the most esteemed professors publicly taught that to omit venesection was to invite a fatal result. If he had lost his first case, not bled and not blistered, it is doubtful whether he could have maintained his professional standing. But he found in that instance and in subsequent cases that the patients' comfort was greatly increased, and their dangers apparently diminished in proportion as the treatment was more palliative and less disturbing. To the best of his ability he sought to induce others to follow the example thus set them, or at least to avoid equally the depressing plans on the one hand, and the grossly stimulating on the other. So, too, were deprecated the violent attempts in later days to subdue prominent symptoms, however apparently threatening — such as high temperature, rapid pulse, quick breathing, etc. — and which may be, after all, merely normal attendants upon the usual succession of processes, and possibly necessary compensations only for diminished lung power.

Complications, physical defects, feebleness and age, of course, often render recovery impossible. A greatly esteemed classmate, an eminent physician, a few months ago, when told by his attendant that his disease was pneumonia, calmly remarked with an expression and tone that clearly indicated his full comprehension of the situation and the inevitable result, "seventy years, a feeble heart, and pneumonia!"

The writer has found that, other things equal, the more the disease can be left to itself, undisturbed, to run its own course, the less the distress and danger to the patient. Indeed, he has illustrated this in his own case. Having had, several years ago, an attack of pneumonia in the acute form, he persisted in its being left throughout its course wholly to itself; and when he heard his medical attendants at his bedside remark to themselves that "this is simply suicidal," had consciousness enough to say that he knew the risk and was willing to take it. Throughout the whole period of the disease and convalescence he did not take a particle of medicine or stimulant. Meanwhile, and for sometime following, his nourishment consisted of light, slightly-toasted bread dipped in hot milk, blocks of which, frequently offered, went to their destination with the least possible effort. When urged to take something more substantial in addition, he is reported to have said in his semi-delirium, "it is a good poultice for the inside as well as for the outside." The disease in this case was no longer than usual, and no more time was required for convalescence than after any acute disease in a dangerous form. No permanent injury remained from the attack.

The writer would fain believe that "a treatment that makes the patient as comfortable as possible, preserves his strength, and avoids everything harsh" (T. and C., p. 26) in any prevalent degree is "the present treatment," were it not for the frequent reports of cases wherein normal symptoms are irrationally combatted with the newer chemical poisons, or wherein feeble attempts are made to imitate the "cruel" measures of past "heroic" times — for example, see this Journal of September 5th inst., pp. 234–5; but if Drs. Townsend and Coolidge, by their invaluable paper, induce practisers of medicine to withhold their miscalled "remedies" and harsh procedures — seeing that many patients cannot safely bear drugs in addition to disease, and that "treatment" has no influence on the duration or mortality of the disease — and, instead thereof, to judiciously attend more especially to patients' comfort and sustenance, they will confer an inestimable boon upon many a prostrate mortal still suffering, even nowadays, from much, to say the least, useless dosing.

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RECENT PROGRESS IN THE PATHOLOGY OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

CHANGES IN THE GANGLION CELLS AFTER STIMULATION.

The theory has for a long time been held that the change in activity in the central nervous system, that is, the performance of its function by any nerve centre composed of ganglion cells, was accompanied by some physical or chemical change in the cells. This theory has at last received demonstrative evidence in its favor from certain recent investigations. Korybutt-Daszkiewicz[1] has attempted to solve the question whether the activity of the central nervous system is accompanied by changes recognizable with the microscope. His experiments were conducted on two frogs of the same weight and sex. One was kept as a control, in the other the eighth nerve was stimulated by induction shocks for an hour. The cords of both were hardened and stained by Gaule's method with hæmatoxylin, nigrosin, eosin, and safranin. The nuclei of the ganglion cells were the point of chief interest. These stain red and blue, but he finds that 3.31 to 3.66 times more nuclei stain red in the stimulated frog than in the unstimulated frog. Hodge,[2] who has investigated the same subject, questions the accuracy of this method, thinking that the red nuclei are more superficial than the blue, and that the thinner the section the greater the number of red nuclei. Hodge's method was to stimulate one or more nerves on one side of the body, and then remove the corresponding spinal ganglia on both sides, keeping them together all the time in the hardening and staining fluids, and making simultaneous sections. The treatment is thus absolutely identical, the only difference being that one ganglion has had its nerve stimulated while the other has not. He finds that the stimulated ganglion shows distinct differences; the nuclei in its cells are smaller, the outlines are jagged and irregular instead of round, and there is a loss of open reticular appearance with darker stain. The cell protoplasm shows a slight shrinkage in size, it has a lessened power to stain or to reduce osmic acid, and it becomes finally granular and reticulated. The cell capsule also shows a decrease in the size of its nuclei. These investigations are practically the first undertaken upon this subject, and their importance as confirming the theory of nerve action is great. They indicate, moreover, the importance of employing similar methods in the investigation of so-called functional diseases of the nervous system, for they seem likely to render the old distinction between functional and organic disease of no value.

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[1] Archiv. f. mik. Anat., 1889, p. 51.

MULTIPLE NEURITIS AND MYOSITIS.

Senator[3] has recently reported two cases, one with autopsy, the other with examination of the muscles. Senator is of the opinion that one and the same morbid agent may attack together, consecutively or separately, different parts of the nervous system, and that typical neuritis is a systemic affection of the motor cortico-muscular tract. The sensory disturbances of neuritis mean, of course, that other parts of the nervous system are involved; these disturbances may be severe or primary, or they may be due to the secondary hyperæmia and swelling caused by disease of the motor fibres. The muscles, he considers, may be primarily diseased in so-called acute multiple neuritis. His first case was a man, twenty-seven, who had phthisis. Later on he had paralysis of the legs with contraction, muscular atrophy, diminished sensibility, diminished skin reflexes and loss of knee-jerk, and diminished mechanical irritability of the muscles. The arms exhibited similar symptoms although less severe. The muscles were tender and the nerve trunks very tender on pressure. Degenerative reactions were present. The cord was normal; the median and radial nerves showed slight changes, the sciatic showed interstitial and parenchymatous neuritis. In the biceps there was hyperæmia and a marked increase of nuclei, the gastrocnemius showed the same changes only more intense, with pressure atrophy of the muscular fibrillæ. No bacilli were found in the nerves, but fat cells were present. The second case was a man of thirty-three, with marked paresis of the legs without contraction. The muscles were flabby and wasted, the knee-jerks absent. No tenderness on pressure over the nerve trunks but the muscles were very tender. Sensibility not much disturbed. Degenerative reactions present. Bits of muscle were excised and showed marked hyperæmia, increase of nuclei and connective tissue, and wasting and loss of transverse striation of the fibrillæ. These changes, of course, may arise secondarily in muscles after neuritis or poliomyelitis, and Erb has advanced the hypothesis that they may follow purely functional disturbances of the motor cells of the anterior cornua, — an hypothesis which few accept. Senator holds that one and the same cause may act on various parts of the nervous system, giving rise to parenchymatous or interstitial changes, or both; that the nerves may be affected primarily and the muscles secondarily, or vice versâ, and that the part most affected is more probably the part first affected. He regards these cases as an indication that acute or subacute polymyositis may arise from the same causes as multiple neuritis and belong to it, and the morbid agent may also affect the cord.

PATHOLOGY OF TABES DORSALIS.

Oppenheim and Siemerling[4] report fourteen cases of tabes dorsalis with autopsies in which the peripheral nerves were examined. These autopsies were supplemented by the examination of the nerves in thirty-two other cases of wasting disease — tuberculosis, marasmus, inanition, senility, arterio-sclerosis, alcoholism, lead, typhoid, diphtheria, cancer, cerebral disease, sinus thrombosis and syphilis. In the majority of all these cases, including the cases of tabes, changes were found in the peripheral nerves, chiefly in the form of a parenchymatous degeneration, but occasionally an increase in the perineurium with an increase of nuclei. In many of these cases there were no symptoms pointing to the peripheral nerves. Tabes, however, is regarded by the authors as a disease which involves the peripheral apparatus, the sensory cutaneous nerves showing more marked degeneration in this affection than in other diseases, but there is apparently no definite relation between the degree of this degeneration and the intensity and extent of the disease in the cord. How far the symptoms of tabes depend upon this degeneration is still undetermined. The arms are usually affected in tabes long after the legs, and the first symptoms are generally noticed in the distribution of the ulnar nerve, which is given off the lowest of the brachial plexus. Although the ulnar nerve was often found degenerated the authors pronounce against the idea that the sensory disturbance is purely of a peripheral nature, as the peripheral lesions do not satisfactorily explain the symptoms, anæsthesia being found with nerves intact and vice versâ. In two cases, disease of the vagus nerve was found with healthy nuclei; here there were laryngeal symptoms probably due to the neuritis, analogous to the commoner oculo-motor disturbances. Beside the ordinary posterior spinal sclerosis, loss of fibres and atrophy of cells in Clarke's columns were noted.

Dejerine[5] has reported nineteen cases of muscular atrophy in tabes with nine autopsies, atrophy being a symptom which he thinks is present in one-fifth of the cases. It is a late post-ataxic symptom of slow onset, and may continue for many years. It usually begins in the extremities, either in the feet, producing pes equinus, or the typical Aran-Duchenne type of atrophy in the hand. Fibrillary twitching was never seen but quantitative and qualitative electrical changes were present. Contrary to the lesions found by Charcot and Leyden the motor-cells of the anterior cornua were in every case healthy. Slight changes were found in the anterior root in four cases, but in every case there was a pronounced degenerative neuritis of the peripheral nerves.

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[2] American Journal of Psychology, May, 1889.

[3] Zeitschrift f. klin. Med., xv, 61, 1888.

[4] Archiv. f. Psychiatrie, xviii, 98, 487, 1887.

[5] Revue de médecine, February, March, April, 1889.

Oppenheim[6] has recently reported three cases of tabes with interesting autopsies. The first case began with slow micturition and headache, vomiting, ptosis and diplopia; later there were lancinating pains, paræsthesiæ, and attacks of dry coughing, like pertussis, and vomiting and diarrhœa. The pupils reacted to accommodation but not to light, and were unequal. There were partial anæsthesia, ataxia, Romberg's symptom and loss of knee-jerks. There were considerable difficulty in swallowing, rapid pulse, dyspnœa and much hoarseness with paralysis of some of the laryngeal muscles. Later there were oculo-motor paralysis and hemiatrophy of the tongue. There were degeneration of the ascending root of the fifth nerve, and disappearance of fibres in the gelatinous substance. The nuclei of the vagus accessory and glossopharyngeus were about normal but the ascending root (solitary fasciculus) and the other root-fibres were atrophied, and there was a very pronounced degeneration of the vagus and its branches. The right oculo-motor nucleus was atrophied. The gastric and laryngeal crises, the rapid pulse, dyspnœa, laryngeal paralysis, and disturbance in swallowing were all ascribed to the disease of the vagus. There were pain, paræsthesia and slight anæsthesia in the face due to disease of the trigeminal roots. The second case had also laryngeal paralysis with no nuclear or peripheral lesion of the vagus. The third case had a rigid feeling in the face, difficulty in chewing, talking and swallowing, ptosis, strabismus, anæsthesia of laryngeal and pharyngeal mucous membranes, and ataxia of the jaw. Here there was atrophy of the ascending root of the fifth and its sensory nucleus.

TREATMENT OF TABES DORSALIS.

Benedikt[7] once more advocates "bloody stretching" of the nerves for tabes. He reports the case of a man of forty years, with very severe tabes of four years' duration, who was unable to stand without support, whose ataxia was so violent as to throw him out of bed if he tried to move, and who had very severe pains. The right crural and left sciatic were stretched. Eleven days after he could walk alone, and could come to the out-patient clinique for galvanism. The pains disappeared for over a year, and the ataxia was markedly diminished, although he still had to use a cane. Two other cases were improved. The improvement is much less in the "bloodless stretching," and the percentage of success is larger if it is done as soon as the diagnosis is made. Specific treatment, which has previously been ineffectual, may be rendered active by it. The stretching causes a reaction in the diseased parts. This view has some support from the investigations of Tarnowski[8] who some years ago found that stretching the sciatic in dogs caused changes in the posterior columns.

By far the most important contributions to the therapeutics of tabes and other chronic diseases of the spinal cord has been the discovery of the beneficial effects of suspension. This was due to the accidental discovery by Motchoukowski[9] that, on suspending a tabetic who had also spinal caries requiring a plaster jacket, the symptoms were much improved. He tried it with fifteen patients, and found the pains and paræsthesia much improved, and locomotion became easier. In lateral and multiple sclerosis and diffuse myelitis no benefit was obtained. Charcot[10] repeated this treatment on ninety-one cases and found that in the majority the pains, paræsthesia and disturbances in locomotion were relieved. Erb,[11] on six cases, has found less benefit than most other observers; the gait was temporarily improved, the ataxia, pains, paræsthesia and vesical disturbances diminished. Eulenburg and Mendel[12] report forty cases of various diseases. No results were obtained in a case of myelitis and a case of traumatic neurosis; a case of multiple sclerosis improved; three cases of paralysis agitans were little affected. Thirty-four cases of tabes were treated, twenty-one of them persistently; of these five were much better, eleven some better, and five unimproved. The improvement was purely symptomatic; the knee-jerks and pupils were unchanged. Most of them slept and felt better, and the symptoms most commonly relieved were ataxia, vesical disturbances, pain, and difficulty in locomotion. Bernhardt[13] reports the same results from 220 suspensions on nineteen patients. Saundby,[14] in three cases, found improvement. Waitzfelder[15] found improvement in six cases, and Morton[16] in the same number. In one of Morton's cases the pupils reacted again to light. Dana,[17] on the other hand, found little improvement in sixteen cases of various kinds, six of them tabes. Weir Mitchell[18] states that his father employed this in 1826 to relieve the paralysis following Pott's disease, and that he has continued to use it ever since. He considers that some definite and beneficial change takes place in the cord itself, by straightening the spinal curve. De Renzi[19] reports a complete cure (!) of a case of chronic meningo-myelitis by five suspensions of two or three minutes each, the patient at the same time making vigorous movements with his legs.

The method of employing suspension is to suspend the patient in a Sayre apparatus, or a modification thereof, the feet just touching the floor, or free from it. Suspension should last from half a minute to three minutes, and should not be repeated oftener than every other day. During suspension the patient should raise the arms slowly a few times, so as to bring most of the weight on the neck. Beside the risk of breaking the apparatus and strangulation there is a risk of heart failure which must be borne in mind.

Most observers agree that the general feeling after suspension is better, and that micturition and locomotion are easier, and the pains and paræsthesiæ improve; the girdle feeling is apt to be obstinate.

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[6] Archiv. f. Psychiatrie, xx, 131, 1888.
[7] Wiener Med. Presse, February 24, 1889.
[8] Archives de Neurologie, May, July, 1885.

[9] Vratsch, Nos 17-21, 1883.
[10] Progrès médical, Jan. 16, 1889.
[11] Centralb. f. Nervenheilk., July 1, 1889.
[12] Neurolog. Centralb. June 1, 1889.
[13] Deutsche med. Wochenschr., May 16, 1889.
[14] British Med Journal, March 2, 1889.
[15] New York Med. Record, June 8, 1889.
[16] Ibid, April 13, 1889.
[17] Ibid, April 13, 1889.
[18] American Journal of the Medical Sciences, June, 1889.
[19] Ref. in Archiv. ital. per le malatie nervose, March, 1889.

[The reporter must admit that his own results from scanty data — only three cases of tabes and one of paralysis agitans — have thus far been negative, and have not at all confirmed the good reports of the majority of observers.]

SYRINGO-MYELIA.

Debove[24] has recently reported a case of probable syringo-myelia. The first symptom, except a painless arthropathy following injury, was muscular atrophy affecting the arms chiefly, of the Aran-Duchenne type, with some atrophy of the thighs, and scoliosis in the dorso-lumbar region. Tactile sensibility was intact, but there was complete analgesia, and also thermo-anæsthesia, most marked in the peripheral parts. There was also cystitis. Debove states that the affection is a destruction of the gray matter of the cord, of greater or less transverse and longitudinal extent. The white matter may be more or less injured. It is still in dispute whether the affection starts from the central canal or from a gliomatosis, that is, a destructive inflammation of the neuroglia. Starr[25] reports a probable case. with muscular atrophy and paresis, scoliosis, analgesia, thermo-anæsthesia and partial tactile anæsthesia, and ptosis and contracted pupil. He furthermore cites eight cases with autopsies, showing similar symptoms, reported by various observers. The affection begins by the formation of small cells and neuroglia-like substance near the central canal; these finally break down, forming a cavity of irregular shape, either unilateral or bilateral; the favorite seat of this cavity is in the lower cervical and upper dorsal regions. It invades both the anterior and posterior cornua, and occasionally the white matter. The symptoms are progressive muscular atrophy with paralysis; trophic disturbances, cyanosis, coldness, bullous eruptions, ulcerations, diminished sweat secretion, and atrophy and fragility of the bones; and peculiar sensory disturbances, loss of sensibility to pain and temperature in the parts affected, with intact sensibility to touch and location.

Roth[26] reports ten cases under his observation in which the diagnosis seemed probable, and regards the typical symptoms of the disease as the following: (1) Analgesia and thermo-anæsthesia; (2) Subjective troubles of sensibility (pain, etc.); (3) Motor troubles (paresis, twitching); (4) Trophic and vaso-motor troubles (muscular atrophy, cutaneous dystrophies, etc.). Muscular atrophy and partial anæthesia are regarded by him as important features in diagnosis as showing disease of the anterior and posterior cornua, syringo-myelia being the only affection known which may affect these regions alone. It has been confused with tabes, lateral and multiple sclerosis, progressive muscular atrophy and neuritis, but a careful study of the symptoms will lead to a correct diagnosis.

(To be continued.)

— The voice, as a means of personal identification, is of great value. It is reported that a war-veteran in Connecticut, almost wholly blind, recognized by the voice alone, a negro who was one of three escaping slaves halted by him when on guard, near Newbern, N. C., in 1861, twenty-eight years before.

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[24] Gazette hebdomadaire, March 1, 1889.

[25] American Journal of the Medical Sciences, May, 1888.

[26] Archives de Neurologie, December, 1887, March, July, September, November, 1888.

Reports of Societies.

ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY. MEDICAL SECTION.

DISCUSSION ON MALARIAL FEVER IN EASTERN MASSACHUSETTS.[1]

Dr. S. W. Abbott, of Wakefield: Dr. Cook's paper has additional value from the carefulness with which it has been drawn up, from the fact that groups of cases always have a definite value in the study of the history of any disease. I would discuss the subject more in the line of prevention than of therapeutics; prevention in the broad sense of the word, in the sanitary sense, and not in the line of mere prevention by the use of quinine or other remedies after the malady has occurred in the individual. I do not know that we can call malarial diseases communicable, but they are in a certain sense infectious. They are also to a certain degree preventable.

In order to understand the question of prevention, we must know the history and causes of any disease. We know more of the history of this disease in Massachusetts than of its causes. Its appearance in this State has been spasmodic. Dr. Holmes's admirable treatise on the subject shows this. He says that in the first century of the history of the colony there was but little known of it. In the second its occurrence was more frequent, perhaps more frequent than the increase in the population would warrant, and there is, perhaps, only one place in the State where it may be said to have a continuous history of twenty-five years at one time. I mean the lower part of the Housatonic valley.

In 1879 and 1880 it became prevalent at Lenox and Pittsfield, extending up into the valley of the Hoosac in the neighborhood of Cheshire, and as far as North Adams. In the Connecticut valley, there were cases at Springfield, Holyoke, Northampton, and other towns. In 1885 occurred the epidemic at Framingham, extending to Natick in the following year. Then there was a local epidemic in the town of Deerfield, beginning in 1886, including two hundred cases, which, for the population in Deerfield, was a very large number. There are certain points in regard to these towns that have something in common. The majority of cases, I might say ninety per cent. and more, were in the neighborhood of bodies of water. They are slow-flowing rivers, stagnant waters, marshes, meadows and swamps. At the malarial trial at Lenox on account of the Smith Paper Company's dam, it appeared that nearly all these cases were within a distance of less than one mile from the reservoir, extending some three miles back into Pittsfield, and some along the Cheshire reservoir. These are not natural bodies of water. They are artificially produced by damming streams.

There is a good deal of shallow flowage at Framingham and Natick. I do not say that they are causes, but they are conditions to be considered. We know the conditions of its appearance better than twenty-five years ago. One of the best American observers, Dr. Smart, of the United States Army, has given in "Wood's Reference Hand-Book" an excellent paper on the subject of malaria. Of course, we must recognize the value of German and Italian observations.

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[1] See the paper by Dr. Charles H. Cook, on page 3 6.

Italy is the most malarial of European countries. Three conditions accompany the appearance of malarial troubles: heat at a continued temperature of 60° F., moisture, decaying vegetation, and, conjoined with these, a probable biological factor. In temperate climates, low grounds, marshes, and places subject to overflow afford factors favorable to its evolution. It may occur on dry soil, but is it not true that in the dry soil, and near the surface, moisture often exists?

There is one statement in the article by Hertz, in "Ziemssen's Cyclopædia of Medical Practice," which seemed to me to foreshadow some of the conditions that Dr. Cook has mentioned in this neighborhood, and they were written in 1873 or 1874, not more than ten years before the occurrence of this epidemic at Framingham. He says: "In case of the working over or turning up of the soil, as in building dykes and viaducts, in rooting out timber, and preparing the virgin soil for cultivation, organisms are brought to the surface, and not only the laborers engaged in such enterprises, but the inhabitants for miles around, are liable to this fever." Those conditions were certainly met with in South Framingham. Dr. J. F. A. Adams described this accurately by the term "tender exotic." It is occasionally epidemic here in New England, but we can hardly call it endemic. It comes here only when the proper climatic conditions are to be found.

Another preventive has been proposed, and that is the eucalyptus tree, which was introduced some fifteen or twenty years ago in Algiers, and also in Rome, for the prevention of this disease. One theory of its action was that it was a rapidly-growing tree; that the leaves would absorb much moisture, double their weight in twenty-four hours, taking that amount out of the soil. Others believed that an essential oil obtained from the tree had a disinfectant action. A colony of monks planted eleven varieties of these trees. Tommasi Crudeli says, however, that in 1882 every one of the monks was attacked. The theory was abandoned, and but little has been said about it since that time. The account may be found in the *Practitioner* of 1879, '80, and '81. Crudeli goes on to say that "The conditions essential to a permanent improvement of the soil are those of so modifying its physical conditions and chemical composition as to render it incapable of producing the malarial ferment." "The malarial poison is due to an organism which multiplies in the soil."

Several micro-organisms have been associated with this disease. Salisbury, of Ohio, made many observations in 1863, and claimed that he had discovered the malarial germ. In 1879 the bacillus of malaria was observed by Klebs and Tommasi Crudeli, and a year or two afterward an entirely different one by Laveran.

Tommasi Crudeli states more definitely the chief conditions necessary for its appearance: a temperature not less than 60°, a moderate amount of permanent moisture in the soil, and a ready access of oxygen to the strata that contain the ferment. The first is wanting in winter, the second is wanting in summer when we have prolonged seasons of drought and heat. If the malaria is due to moisture and heat, our efforts must be to remove the moisture by drainage. We cannot remove the heat. There is an instance in illustration in the town of Deerfield, already alluded to. There was an epidemic there of two hundred cases in two years. There is a ditch running from the town a long distance towards the north to drain a portion of the town. This ditch became filled with grass, and the drainage became imperfect. I understand the town authorities are at work upon it, and it may improve the condition of the town.

One other question is the possible effect of sewage. Does it have anything to do with the production of malarial fever? I mean sewage as distinct from drain-water. We generally speak of drainage as drainage for water. Sewage implies dirty water and water that generally contains fæcal evacuations. We do not have any evidence that malarial troubles are caused by what we commonly call filth, but rather by moisture, and that moisture may be clean water, or water free from household sewage.

Dr. J. F. A. Adams, of Pittsfield: Berkshire County is now practically free from malaria. The late epidemic began in 1874, was at its height in 1880, and little has been heard of it since 1884. The foci of the poison were the mill ponds and the meadow lands adjacent; while the hills were nearly exempt. For example, the village of New Lenox, with a population of eight hundred, had three hundred and fifty-three cases of intermittent fever between 1878 and 1882, while hardly a case occurred at Lenox, two miles away and two hundred feet higher. Intermittent fever was most prevalent in dry seasons, when the water was low, and a large area of mud flats exposed to the sun.

An interesting study, in connection with this epidemic, is the apparent modifying influence which the malarial poison exerts upon typhoid fever. During the malarial epidemic, typhoid fever was unusually rare in Berkshire, but became gradually more prevalent as malarial fevers disappeared. But with this re-appearance of typhoid, a marked change of type was observed, the cases being characterized by mildness, a low death-rate, frequent absence of diarrhœa, and an atypical temperature curve, the chief peculiarity of which is a very high temperature in the first week. These cases have continued to appear up to the present time, but in diminishing proportion to the typical cases, which have increased while the others have decreased.

These atypical cases present every variation, from manifest typhoid, with some one symptom lacking, down to cases having no symptom but pyrexia. Such cases were not unknown before the malarial epidemic, but were far less common than they have been since. Similar cases have been reported by medical writers in various parts of the United States, especially in those where malarial fevers prevail. They have recently been well described by Drs. Atkinson, of Baltimore, and W. W. Johnston, of Washington.

Very similar cases have come under my own notice in Florida, where are found intermediate forms between remittents and a fever closely resembling typhoid. Such cases sometimes begin and end as an intermittent or remittent, with a continued fever between which takes on more or less of the typhoidal character. Between a continued malarial fever, if such a thing really exists, and the atypical form of typhoid, the diagnosis is not very easily made. Aside from the temperature curve, which we have seen to be variable, we have no gross test except the effect of quinine. More delicate diagnostic measures, not easily adopted in private practice, are Ehrlich's test and the microscopic examination of the blood.

Practically, in this State, it is safest to class as typhoid all cases of continued fever, no matter how free from typical symptoms, for such cases frequently develop unexpectedly severe typical symptoms, such as hæmorrhage or even perforation.

Dr. J. O. Whitney, of Pawtucket, R. I.: Malaria has existed in the Valley of the Blackstone River below Woonsocket Falls for eight or ten years. It exists there to-day. I live at Pawtucket, where it is estimated that last year there were two thousand cases out of a population of twenty-four thousand. There has been no change whatever in the water courses for fifty years. There has not been a new dam below Woonsocket Falls to my personal knowledge for forty-five years. In a portion of the city of Pawtucket, a mile from the centre, is a place called Hammond's Pond. The people who live in that vicinity have malaria most intensely. It starts from Providence and extends to Albion.

I was around Framingham and know that relatives of mine suffered from the disease. In houses with damp cellars I believe malaria is most liable to occur.

Aiken says: At New Orleans they have yellow fever, at St. Louis they have intermittent, and in the upper waters typhoid fever. He recognized but one poison, call it what you please. I think with Aiken that it is one and the same cause, modified only by the heat at New Orleans, and by the cold at St. Paul. But they have yellow fever at one place and typhoid at the other.

Dr. J. R. Bronson, of Attleboro: In the village of Hebronville, in the town of Attleboro, until the autumn of 1880 I did not see a case of intermittent fever. As Dr. Whitney has said, there has been no change in the streams since 1811. In that very locality where the initial case occurred, during the autumn when the streams were unusually low and a large amount of mud was exposed, there were cases of intermittent fever. I am told that last year cases were very numerous there. I believe, too, we have had less typhoid fever than we usually have, and it is milder than that which antedated the inception of malarial fevers.

Dr. W. E. Smith, of Boston: Previous to 1887, I was a resident and practised in Framingham, so that I was there during some of the epidemic of malaria. The Boston basins had been built and been in active operation some six or seven years previous to the outbreak of malaria in South Framingham; but they are three miles from this outbreak, so that a probable connection between them and the outbreak is obscure. Before, however, there had been a case of malaria reported in Framingham nothing was more common than to notice a changed condition of the atmosphere. There was a chill and a dampness in the air which had not been noted before the basins were constructed. At the same time, as Dr. Z. B. Adams records in his paper, a few years ago, all the conditions usually considered favorable to an epidemic of malaria had been in constant existence in the basins, and yet no outbreak had occurred previous to 1885. Another fact was that a large area of swamp land (the Guinea Meadows mentioned by Dr. Cook), lying to the southwest of the village of South Framingham, was completely burned over only a few months previous to the outbreak of malaria, and it would seem not improbable that an avenue was thereby opened for the miasm to be blown in from this swamp land to the village, especially since it will be observed by the tables that the wind was southwest at the beginning of the outbreak.

A somewhat similar condition of affairs was present at Framingham Centre, where, however, the outbreak was not so severe. A few years after the reservoirs were built, a large tract of woods was cut down to the west of the village, between it and the basins, exposing here also a swamp, though of much smaller area than the Guinea Meadows. At present both swamps are again thickly overgrown. At the same time the basin to the west, beyond this swamp, was drained off just before this outbreak, exposing the mud bottoms to the summer heat; and as before noted, the prevailing winds were southwest. There have also been cases in Framingham Centre on Normal Hill, far above the Sudbury River or other streams, but the hill is full of springs and has a very wet soil.

Dr. Cook alluded to imperfections in the data of the disease during the outbreak of 1885. There were several reasons at that time for the large number of reported cases apart from the actual occurrence of the disease. It is probable, for example, that some cases were reported more than once, and perhaps under the circumstances unavoidably reported. The disease was a new one to the people, and at first they were naturally somewhat alarmed. They would have one practitioner give them a dose of quinine and the attack would pass away. If the chills returned, distrusting sometimes the first practitioner, they would call in a second, and so that case would be reported twice or three times. The disease is now I believe on the decline, according to medical reports, although it is possible that more cases now treat themselves without calling in a physician than in former years.

Although I believe in the influence of marshes over the disease, yet it is a fact that malaria began to appear in the northern part of the town, where the land is higher and marshes not so near, at a much later period than it appeared in the two villages mentioned. And there has been during the last three or four years an immense activity in cutting down the woods all through the north part of Framingham. Indeed, it seemed to me last week while revisiting this district, that to accomplish all the work that has been done, the axes must have been busy three hundred and sixty-five days in all the three years since I removed from the town. I do not say positively that this destruction of the woods has caused the outbreaks of the disease, but I do think it reasonable to consider that it may have had an influence upon both its causation and its spread.

This whole question of the influence of the forests upon the disease has received little attention hitherto from medical men, but it ought to receive much more. A case in point was related to me last summer by Professor Fernow, United States Chief of Forestry. The town of Abington, Maryland, had been entirely free from malaria until a forest between the village and the river had been cut down. Immediately a severe epidemic infested the place. The case is certainly an interesting one, and I wish it might encourage us to give the matter a little more scientific study in cases nearer home.

Little Johnnie Day lies here,
  He neither cries nor frets;
He had just reached his thirteenth year —
  Cigarettes. — *Troy Press.*

AMERICAN DERMATOLOGICAL ASSOCIATION.[1]

Dr. H. G. Klotz, of New York, read a paper entitled

CLINICAL OBSERVATIONS ON INJECTIONS OF INSOLUBLE MERCURIAL SALTS IN SYPHILIS.

These injections seem not to have been used much in this country, and little has been written on the subject. It has been generally considered that the method should be resorted to only in cases of emergency. Fumigations are not always well borne, and there is some danger of injury to the air passages by inhalation of the fumes. The reader has used the cyanide, as a soluble form of the mercurial, but it is expensive, and causes a good deal of pain.

In private practice he had given 123 injections to twenty-three patients. It is better to have the patient lying on the face at full length to avoid sudden motions. The point selected for the injection is preferably about an inch outside the gluteal fold; this point is such that the patient can sit afterward without much discomfort. The needle should be stouter and longer than that used for ordinary purposes. It should be inserted with one thrust, and then should be held quiet for a quarter or half minute, until the quivering of the muscle has ceased. The barrel is emptied slowly, and a fold of the skin pinched up as it is withdrawn. No massage is to be used, and the patient should be enjoined from muscular exertion for several hours.

At the very beginning of the practice in the hands of the reader one or two abscesses followed the injections, but for the past two years he has not seen an abscess; when they did occur they were not very troublesome. Sometimes there is more or less painful swelling after the treatment, not followed by suppuration. The trouble followed the use of calomel in five cases, and after the yellow oxide it occurred but twice. Of the fifteen accidents, twelve were experienced after the use of calomel in water. It was noticeable that the use of calomel in oil never caused local trouble. Salivation seemed less frequent than after inunction. A slight diarrhœa was witnessed in one patient. One patient had a chill after the treatment, and this was followed by loss of appetite, a temperature of 102°, with pain in the chest and difficulty of breathing, accompanied by a few ronchi. The next day he was better, after profuse perspiration. It was probably an embolism of oil from the injected fluid. In one other patient there was pain in the chest, but nothing was found on physical examination and he was soon better.

All affections of the skin disappeared rapidly after two or three injections as a rule. The pigmented spots went rapidly, but there was not much effect upon the pustular lesions. In the tubercular syphilides there was a good effect at first, but it was not lasting, and the iodides had to be given. Mucous membrane affections were benefited. Persistent primary induration disappeared in one case after it had lasted a year. In two cases of tertiary syphilis the result was very satisfactory.

Dr. Taylor thought this subject of mercurial injections was a good illustration of the fact that there are fads and fashions in medicine. Such methods would rarely have to be resorted to as an emergency treatment. He had seen it carried out in Charity Hospital, and it had added much to the discomfort of the patients. Taking into consideration the dangers of embolism, the occurrence of abscesses, the painful nodules that form and the pseudo-paralytic condition of the legs, it seemed to him there would be considerable objection to the use of this method of medication.

Dr. Morrow had had an opportunity to watch the effect of these injections in a large hospital, and he would only reiterate his conclusions which had been given before the Academy of Medicine; namely, that it is a reserve treatment to be followed in those cases where the usual and better plan of administration by the stomach cannot be followed. The speaker could not see how any drug introduced into the tissues is transformed by any strange chemistry of nature into something more potent than if taken by the stomach. He remembered to have seen post-mortem examinations in cases that had died of some intercurrent disease, and the tissues about the point of injection were in such a necrobiotic condition that he had concluded it to be bad surgery to duplicate these results on a large scale. He had used the treatment in two cases in the last two years and he did not believe the results were any better than they would have been by other methods. A strong argument against the treatment is the fact that there are so many dermatologists who have immense numbers of cases passing through their hands and who reject this treatment altogether.

Dr. Zeisler thought that while the injections might be practicable in hospitals they should not be used in private practice to any extent. He had never had the courage to treat a patient with a method which seemed in many respects doubtful. He had always been satisfied with the old methods.

Dr. Bronson thought we should not condemn the method till we learned all that was to be obtained from it. It seemed to him to represent a very scientific line of treatment. For frictions, the speaker preferred the mercurial soap to the ointment.

Dr. Heitzmann said his son had given the injection in the most antiseptic manner possible. In the first case an extremely painful inflammation was the result but it did not form an abscess. Two weeks afterward a second injection was made, and an abscess formed. He had been discouraged from making another trial. He did not consider the objection to the fumigation, that it injured the respiratory tract, a serious one, for he had never seen such results.

Dr. Klotz raised the point that private patients were the very ones on whom this treatment should be tried. He would always explain to the patient what the discomforts of the method were and he had never had any difficulty with them. Some of the patients whom he had treated liked the injections so much that they insisted upon having them afterwards. The objection to the use of inunction is the fact that the patients cannot do it thoroughly enough. Many bad results in the way of salivation, bone diseases and eczemas had been caused by the reckless use of inunctions. In regard to the post-mortem appearances, he had seen cases where no bad results could be seen at all. His total experience with the method had not been such that he felt that he could not go on.

SECOND DAY. — WEDNESDAY, SEPTEMBER 18TH.

MORNING SESSION.

The following officers were elected: *President*, Dr. P. A. Morrow, of New York; *Vice-President*,

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[1] Continued from page 344 of the Journal.

Dr. G. H. Tilden, of Boston; *Secretary and Treasurer*, Dr. G. T. Jackson, of New York.

It was voted to hold the next meeting of the Association at Richfield Springs, N. Y.

Dr. Bulkley presented the report of the Committee on Statistics.

Dr. J. T. Bowen, of Boston, and Dr. C. W. Allen, of New York, were elected members of the Association.

Dr. Hardaway, of St. Louis, presented the report of

A CASE OF LUPUS ERYTHEMATOSUS.

The patient, twenty-three years of age, was well until October, 1887, at which time some spots were noticed upon the nose. These were treated with chrysarobine salve by the attending physician, who considered it a case of eczema. The treatment brought on an acute dermatitis, which obscured the real disease for a time, but, on clearing up under soothing ointments, it was found that the disease was lupus erythematosus. The patient went to the hot springs of Arkansas after six weeks, and there it was considered to be eczema. In March, 1888, the eruption occupied the same area, and was of a dusky red color, the borders being sharply defined. Some improvement followed the use of sulphur and salicylic acid. For some reason a lead salve was ordered, and by a mistake of the druggist crystals of the acetate were put in it. The reader was called to see the patient, and found him with a temperature of 103°, with great swelling of the lymph glands in the front of the neck, and with the upper lip encrusted. On the second day the swelling of the neck was very hard, and there were some spots of eruption on the forehead, not quite reaching the hairy scalp. On the third day there were pustular and bloody crusts upon the cheeks, resembling pustular eczema, and some œdema of the throat was found. The temperature was 104.5°, probably due to the adenitis.

During the next two weeks the lower lip lost its crust and the fever abated, and within a month the disease had undergone complete involution. The glands became involved in a tubercular process all over the upper part of the chest. Hectic supervened, and he died suddenly of pneumonia after some days.

Dr. Taylor was skeptical about the acute attacks of lupus erythematosus of Kaposi. In one case which Dr. Bulkley had in New York many of the clinical features of Kaposi's description were absent. It seemed to him that Kaposi had gotten hold either of cases of syphilis, or quasi-acute cases of iodide of potassium poisoning.

Dr. Greenough would question whether the fatal result was not due to the violent dermatitis that was twice set up, and which resulted in affection of the lymph glands rather than to the lupus erythematosus itself.

Dr. Shepherd thought if the lupus had been left alone there would have been no glandular affection. In patients with a tubercular family history small irritations will sometimes set up glandular disease.

Dr. R. W. Taylor, of New York, reported

A HITHERTO UNDESCRIBED FORM OF NEW GROWTH OF THE VULVA.

The reader deplored our lack of exact knowledge in regard to these interesting cases. In his studies he had found that the following were the views generally accepted as to the origin of the simple hypertrophic and ulcerative vulvar lesions, viz.:

(1) That they are identical in their nature with lupus, euphoniously called esthiomene (a term which should be discarded).

(2) That they are the result of essential and specific syphilitic causes in the great majority of cases.

(3) That they are due to some undetermined ulcerative process.

(4) That they may be the result of tuberculous infiltration. (This view is advanced by a few observers only.)

The reader would not hesitate to say that in the main some of these conclusions are false, and others partly true. The reason why so little has been done in this subject is because it has not been taken up by men thoroughly versed in syphilis, and because one man rarely sees more than a single case of the disease. The reader's own conclusions were these:

(1) That a large, and perhaps the greater number of chronic deforming vulvar affections are due to simple hyperplasia of the tissues, induced by irritating causes, inflammation and traumatisms. This fact had never before been presented.

(2) That many cases are due to essential and specific syphilitic infiltrations.

(3) That other cases are caused by the hard œdema which often complicates and surrounds the initial sclerosis of syphilis and perhaps localized gummatous infiltrations.

(4) That many cases are due to simple hyperplasia in old syphilitic subjects who suffer from chronic ulcerations of the vulva, long after all specific lesions have departed.

(5) That some cases, also in old syphilitics, are due to simple hyperplasia, without the existence of any concomitant ulcerative and infiltrative process, and seem to be caused by conditions which in healthy persons result in vulvitis only.

(6) That some rare cases are those of simple inflammation resulting from antecedent ulcerative and inflammatory conditions.

Dr. Taylor had never seen lupus on the female genitals, although he had constantly looked for it. With regard to tuberculosis, his experience had been that the lesions were ulcerative and creeping rather than hypertrophic.

In this paper he would describe two cases coming under the last division. The first patient was thirty-five years of age, and had been perfectly healthy. In 1876 she had a suppurating bubo in the groin, and in 1887 a chancre between the left labium majus and minus. She was in Charity Hospital for eight months at that time, and finally went out with the ulcer healed. There was at no time the slightest trace or history of syphilis. In 1877 she suffered with excoriations about the seat of the chancre, and sometimes there was bloody oozing after hard work, or following the menstrual epoch. During the next nine years she earned a meagre livelihood, and was careless about the condition of her genitals, having occasional attacks of acute or subacute vulvitis.

She re-entered Charity in August, 1886, and was under observation until May, 1889, when she died. On entrance the vulva was the seat of a maroon, or chocolate-colored new growth which extended to the pubes and right inguinal region, and was accompanied by mild pruritus. The first thing she had noticed was in 1884, when the left side of the vulva became thickened and of a reddish color, and this condition extended until she entered the hospital. Slight improvement would follow treatment, but during cessation of treatment at the menstrual period this improvement would be lost. During the winter of 1888 there was some difficulty in walking and finally she took to the bed and remained there till her death. No other diseases were at any time discovered.

The second case was very nearly like the first. The clitoris was lost in a mass of cicatricial tissue, and there was enlargement in the groin. The surface was brownish, sometimes dry and sometimes giving issue to a thin reddish serum. The growth extended superficially and backward. The orifice of the vagina became much contracted, admitting finally only a soft bougie of about 20, French scale. The growth was elevated from one to three lines only, but the elasticity of the tissues was wholly lost, the deeper structures being apparently gradually invaded.

The microscopic examination indicated that it was a benign growth; no bacteria were found in any of the sections. As to etiology, it was not syphilitic; it was not the local expression of a general infective disease. It seemed as if the starting point were the local inflammatory condition arising from the chancroid. At one time it looked like chronic serpiginous chancroid, but it never seemed like lupus or epithelioma.

The prognosis is bad, but perhaps it might be arrested and cured if seen in the early stages. Extirpation was out of the question. Various agents were used to induce healing, with moderate success. It does not give rise to secondary metastatic growths. At one time a systematic local and general antisyphilitic treatment was followed for some months, but without any good effects.

Dr. **Greenough** asked if the growth, in parts free from pressure, showed any tendency to exuberant growth.

Dr. **Taylor** replied that it did not. It was entirely flat.

Dr. **Bronson** said that he had seen the case, and at first glance it had the appearance of epithelioma. He could hardly conceive that an irritation acting for a time and then ceasing would start a process which could prove so rebellious. It seemed to him that there must be some specific cause at the bottom of it.

Dr. **Heitzmann** said that the clinical picture and the microscopical study are entirely at variance in this case. The process, he believed, was malignant. He had studied the sections, and found that the rete mucosum was not thickened, but, on the contrary, very much thinned. The papillæ are very much enlarged. The tumor was certainly a sarcoma. The history of lack of ulceration and attempts at cicatrization, and the fact that the lymphatics were not affected, tallied with the view that it was sarcoma. As no autopsy was made, it would be impossible to say that there were not metastatic formations.

Dr. **Robinson** agreed with the last speaker that the case was one of sarcoma.

Dr. **Taylor** said that while he could vouch for the clinical features, he had awaited with a good deal of interest the opinions of the last two gentlemen. It seemed to him, clinically, that it was something more than an inflammatory growth. The specimens had been carefully examined during a period of six months by Dr. Van Giesen, at the laboratory of the College of Physicians and Surgeons, and there was nothing hasty in the conclusions offered.

Dr. S. **Sherwell** presented a paper on

SOME GENERAL SUGGESTIONS IN DERMATOLOGICAL THERAPY.

(1) A simple method of treating scabies, which he had used to the exclusion of all others. He uses ordinary precipitated sulphur, which he has rubbed on the person, without undue violence, once a day, preferably on retiring. Some of the same is dusted on the sheets of the bed; on this he lays a good deal of stress. He advocates a simple bath, with change of clothing, twice or three times a week. If thought best, a mild ointment may be rubbed on the skin first, or we may use a little oil of sweet almonds.

(2) Eczema ani. Generally there is a slight fissure in the sphincter, or perhaps it is well up inside the sphincter. The reader never treats these cases without making a specular examination, and frequently he finds the crack or cicatrix. Stretching is not always necessary, as graduated bougies, passed every other night, and allowed to remain five or ten minutes, will give relief. Sometimes he washes out the bowel by an enema, and then uses as an injection the following:

Boracic Acid	ʒ ss.
Sulpho-carbonate of Zinc	ʒ ss.
Listerine	℥ ij.
Water	℥ iv.

Sometimes he alternates this with auto-insufflation of boracic acid and bismuth, well triturated.

(3) Eczema, of sycotic origin, upon the upper lip. Generally it is the result of irritant discharges. He would suggest that a careful attention to the underlying affection of the nostril will do much in the way of cure.

Dr. **Bulkley** was especially interested in the matter of the eczema upon the lip. He had been through all varieties of treatment, and had come to conclusions identical with those of Dr. Sherwell. He could recall many cases that came for treatment each winter, and who were better during the warm months. He would go a step further than Dr. Sherwell and look at the general condition of the patient, for some persons of catarrhal habit need proper internal medication.

In regard to the cases of anal eczema, he had seen fissures touched with nitrate of silver, and he is very cautious about the use of this remedy, for he had seen one case of general eczema set up, and the man was kept in bed for three or four weeks. He had used a solution of sweet spirits of nitre, fifteen or twenty grains to the ounce, applied with a tooth-pick or probe. In one case, where there was a large number of fissures, the application was made every day, and after several weeks a cure resulted. It may be followed by a soothing ointment of tar and zinc.

Dr. **Zeisler** believed that many cases of eczema of the lip were due to a diseased condition of the roots of the hairs, and, in his hands, the best treatment was depilation. He is positive that the catarrh excites the eczematous condition and the sycosis. He has no doubt that the catarrh is of mycotic origin, although it is not yet proven. The treatment by depilation is efficient, cheap, and does not cause any dermatitis.

Dr. **Taylor** spoke of the fact that dry sulphur is used to rub into the so-called "mange" of dogs, one variety of which is parasitic.

Dr. L. D. Bulkley, of New York, read a paper with the title:

WHAT REAL VALUE HAVE THE NATURAL MINERAL WATERS IN THE TREATMENT OF DISEASES OF THE SKIN.

It is the popular impression that natural mineral waters help certain skin diseases; that some are to be applied on the outside, and some are to be taken internally for the purpose of washing out the noxious agent. No doubt many cases are benefited, but any one who has seen many cases of the effects of natural mineral waters must be many times disappointed. The water is but one element in the case; hope and faith may play an important part. Then there is the change of scene, rest from ordinary occupation, and, perhaps, the enforcement of regular hours.

In Europe, most of the springs have resident medical advisers, but, unfortunately, there are few of them in this country. It should be remembered that in certain instances other appropriate remedies are being taken at the same time; witness the treatment of syphilis at the hot springs of Arkansas. But in any case it is the water, pure and simple, which contributes most to the cure. Most of the waters have little effect upon the skin, but reach especially the kidneys, liver, bowels, etc. We cannot always predict the effect of the water from its chemical analysis. Certain mineral waters are taken hot at the springs, but cold, or even in ice, when at a distance. In the case of iron, arsenic and bromine springs, the results are rather indefinite. Sometimes cutaneous diseases depending on debility will be improved. We have all seen cases of eczema which have been treated at the sulphur springs in vain. Where there is a rheumatic element back of the cutaneous lesion, no doubt some good can be received; but in those cases it is the alkaline water, and not the sulphur, which is of benefit.

Like all other remedies, the use of springs must be carefully prescribed in order to be of the greatest use. Probably more benefit is derived in eczema than in other diseases, and even then it should be toward the close of the case. First, should be used the alkaline and moderately purgative waters, and then a tonic course. Carlsbad is advisable where there is a large abdominal plethora. In acute cases the hot springs should be used. Care must be taken lest acute eczema be excited by the springs, for some very severe cases have been lighted up in this manner. In psoriasis, sometimes sea-bathing is of far more benefit than the mineral springs. In syphilis, little benefit follows unless other treatment is kept up. Acne will often be benefited somewhat, and the iron springs are better than the sulphur. The chief difficulty in the use of this treatment is the fact that these patients are not under supervision, and are apt to follow their own fancy or the guidance of the attendants at the baths.

Dr. Hardaway had lived in the vicinity of several springs, and had seen a large number of patients who had tried the treatment. A large part of the benefit, it seemed to him, was due to the fact that the patients are away from their business Undoubtedly some are helped by the water simply as water. In various gastric and intestinal disturbances which may lie at the root of an acne of the erythematous form, in people who are lithæmic, the water will act well. There are some persons who give up a dissipated, irregular life and spend the time quietly and regularly when at the springs. He had never seen any specific effects from the waters.

Dr. Klotz thought it a pity that the natural springs in this country, which he considered equal to those of Europe, should be so neglected.

Dr. Taylor spoke of the fact that there are so many social attractions at Saratoga, so that the patients are apt to be led away from the purpose of their visit. He had never seen any marked effects from the waters at Saratoga, but he had seen bad results, and he would advise persons with any renal or any commencing vesical or urethral trouble to leave the Hathorne water alone. In some of the patients who have what we call portal congestion the iron waters act very harmfully; some cases have been brought to the verge of death by persistently drinking the water.

Dr. Sherwell had had a case of erythematous eczema much injured by a trip to one of the sulphur springs. The patient returned in a pitiable condition.

Dr. Denslow had found that eczemas in his cold climate tended to become chronic, and had to be sent to a warmer locality. Those that were benefited most, as a rule, did not have much to do with the waters of the springs. He advised acute cases to have nothing to do with them at all. Where there has been any benefit it has been in the old chronic cases, and the acute cases have been aggravated. Even in that case, it seemed to him that the chronic cases would have been just as much benefited by the change to a warm climate, leaving the waters alone.

Dr. Graham, in answer to an inquiry made by Dr. Bulkley, said that the St. Catherine Springs and the Preston Springs had given good results, but generally in rheumatic cases, and he preferred the latter place for this class of patients.

AFTERNOON SESSION.

Dr. L. Heitzmann, of New York, read a paper on

DERMATITIS PAPILLARIS.

Benign tumors will not recur after extirpation: but there are many cases where tumors which are proven both clinically and microscopically to be non malignant begin to recur after their removal, sometimes assuming a larger size than the original. Such tumors are known to the surgeon as recurrent fibroids. A simple fibroma may gradually change into sarcoma during the course of a series of operations for its removal. Sometimes the growth commonly called "moles" after their removal will recur in the shape of scars, which are generally called spurious keloid. In a patient of Dr. Nicolai the application of green soap caused the growth of large branching hard scars over the chest. On some people every wound of the skin will be followed by such a growth. Such a condition may follow an eruption of acne pustules; and these growths have been termed by Kaposi, dermatitis papillaris.

A negro who slept on a pillow filled with horsehair developed such growths upon the neck and occiput. In another case, that of a Hebrew gentleman, constant picking of a few acne pustules was the starting point of the disease. Kaposi considers the disease a primary one, but the author thought it secondary to the irritation arising either from an acne or from a sycosis. This view agrees with the opinion of Hebra, who called it sycosis frambœsiaformis.

What the cause is we do not know. Von Recklinghausen thought it followed the distribution of the nerves. In the experience of the reader this had not been true. It seems to depend on a peculiar activity of the skin which enables it to respond to moderate irritation. It is most common in negroes, in whom pricking of the lobes of the ear may be followed by such a growth. The Hebrew race is also prone to the formation of this recurrent fibroma. It is composed of interlacing bundles of fibrous tissue, with a large amount of protoplasm or medullary corpuscles between the bundles. Sometimes the latter become so great that it is called myxo-fibroma. The larger the amount of this free substance the more rapid the growth of the tumor. We also meet with indifferent corpuscles or medullary corpuscles, which point to rapid growth of tissue.

From a pathological standpoint the recurrent fibromata are allied to keloid and dermatitis papillaris. The papillary character is of secondary importance, depending on the regular distribution of the bloodvessels in the superficial layers of the cutis. Treatment is tedious. Caustics, cutting, and the hot iron are forbidden; they will aggravate the disease. Nitric acid may be applied cautiously. The history of one case, in whom operation was done in Vienna, was related, in whom the result was a great increase in the size and number of the growths. A three per cent. solution of salicylic acid seems to promise as well as anything.

Dr. Fox had seen one of the cases of which Dr. Heitzmann had spoken. The patient refused operation and electrolysis was tried, great care being taken not to produce ulceration. Progress was very slow, but a portion of the growth was reduced to a level with the skin. Then the patient disappeared until last spring when he came back with the story that he had been operated upon in Vienna, and at that time he presented tumors considerably larger than when he was under treatment before. Since that time the speaker had treated an almost identical case occurring in a colored man. A study of this case had led him to believe that with the exception of its occurrence in the follicles, its occurrence in this particular locality, and perhaps its greater vascularity and tendency to suppuration, there was no difference clinically between this disease and keloid. It had occurred to him that the occurrence of the keloid on the sternum may have had something to do with the hair follicles there. He would question the exactness of making a distinction between true and false keloid; the history of the presence or absence of injury cannot always be depended upon. In cases of spurious keloid the speaker had seen excellent results from scarification and the application of acetic acid.

Dr. Bulkley had seen one case in a negro; he treated it with mecurial plaster, and thought it improved while under observation. He believed that if we could get the real history of the so-called true and false keloid we should find them all the result of traumatic causes.

Dr. Zeisler protested against the view that the disease as described by Kaposi was not a distinct affection. In the case mentioned, even though there was a resemblance to keloid, which he would not admit, there were such prominent clinical features, such as the occurrence upon the occiput and the peculiar growths of the tufts of hair that we have no right to throw over the diagnose of Kaposi. Pure nitric acid, in one case of keloid upon the cheek, had caused entire disappearance without disfigurement.

Dr. Greenough mentioned a case where a number of keloidal growths appeared upon the sternum after application of croton oil in the treatment of a cough.

Dr. Klotz would use salicylic acid in strength as high as ten per cent. With it he had caused the disappearance of keloids in one case.

Dr. Jackson, in a case of keloid upon the cheek, had tried salicylic acid, hydronaphthol plaster, mercurial plaster, and finally scrapings. The hypertrophic scar which followed was not removed by the use of scarification and acetic acid.

Dr. Denslow had tried electrolysis for a period of several months on one of these cases, but without result.

Dr. Graham had watched with much interest for several years a case where he had observed from time to time keloidal growths appear upon the face, following a sycosis. The same patient had a keloidal growth upon the leg, at the scar of an old bullet wound. He had not dared to operate in the face of the emphatic advice of Kaposi.

Dr. Heitzmann said that pathologically there is not much difference between the lesions of dermatitis papillaris and those of keloid, although clinically they may differ.

Dr. Fox protested against the great multiplication of names in dermatology. He thought that the term keloid of the occiput answered the purpose perfectly.

(To be continued.)

Recent Literature.

Lectures on Obstetric Nursing. By Theophilus Parvin, M.D. 16mo, pp. 104. Philadelphia: P. Blakiston, Son & Co. 1889.

These lectures, two in number, were delivered to the pupils of the Philadelphia Hospital Training School for Nurses. They are written in the author's well-known clear and polished style, and will richly repay perusal by those for whom they are intended. It is hardly to be expected that the average nurse will altogether understand and appreciate the author's remarks on the etymology of the word nurse, interesting as they are. Nor should the obstetric nurse look upon these lectures as embodying all that she should know, as a course of twenty-five or thirty lectures would be required in an adequate curriculum, combined with months of clinical teaching. This little book will serve rather as an outline, to be filled in by regular hospital instruction.

— In the *Lyon Medical* for August 4, 1889, Dr. Eloy publishes the following formulæ for the treatment of constipation in the new-born.

Monti and Widerhofer prefer mannite to manna in the treatment of constipation in new-born infants. Dissolve five to ten parts of crystalized mannite in 50 to 100 parts of water, one teaspoonful of this solution being given every two hours.

A preparation in great favor in Austria has the following composition: Powdered rhubarb-root, 45 to 75 grains; carbonate of magnesia, 45 to 75 grains; oil of fennel or anise, 80 drops. A pinch of this powder may be given three times daily.

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THE CLINICAL SIGNIFICANCE OF ALBUMINURIA.

THE importance of a proper interpretation of albumen in the urine, not only for purposes of medical prognosis, but especially in connection with the acceptance of life-insurance risks, appeals strongly to every member of the profession. The almost universal usage of insurance examiners is, we believe, to reject albuminuric subjects, or, at least, to defer their acceptance till repeated subsequent examinations have proved the absence of the offending substance.

Yet cases are accumulating in which it is claimed recovery has ensued after a temporary or periodical occurrence of albuminuria. Many such instances are collected in the extended monograph of the late Prof. Calvin Ellis, which formed the last of his valuable clinical and pathological studies.[1] Our English brethren in their annual meeting at Leeds have been considering the same subject; and their deliberations, albeit involving, perhaps, a "conclusion in which nothing is concluded," will have an interest for our readers.

Dr. F. W. Pavy, whose views of "cyclical albuminuria" are sufficiently well-known to the profession, opened the discussion, and, as might be expected, took the ground that albuminuria *per se*, in a patient presenting, after careful examination of all his organs and functions, no other aberration than the albuminous urine, need not necessarily militate against the safety of the insurance risk. He classified the cases under three heads: (1) those in which very small traces only are observed; (2) those in which there is a notable quantity of albumen, and that constantly; (3) cases of the so-called cyclical variety, where there is regularly a notable amount at one period of the day and an absence at other periods. The first group he considered the most favorable as to prognosis, the second least so, and the third of intermediate augury. Even in the second, he thinks that some cases run on without serious results arising, but admits that our knowledge does not at present permit us to differentiate such from cases of Bright's disease. Of cyclical cases he thinks a favorable opinion may be given, as a simple medical prognosis, but where the question of life-insurance is involved, suggests that an increased premium be required.

Dr. George Johnson, of the King's College Hospital, took a square issue with Dr. Pavy, and repudiated all "physiological" or "functional" albuminuria. Admitting that an albuminuric subject might have no symptoms, and might thus fall into Dr. Pavy's favorable classification, he claimed that such was merely a parallel case to that of a patient with cardiac valvular incompetence, who may live for years without any symptoms, but whose disease is not to be therefore diagnosticated as functional. The fact of the recently ascertained frequency of albuminuria he interpreted, not to show its lack of gravity, but only to indicate the necessity for universal urine-testing.

Dr. Maguire said he had found disorder of the circulation in all cases of functional albuminuria. The disorder was in the direction either of increased or lowered arterial tension. The former occurred in persons having a family history of Bright's disease; the latter in persons of weak circulation, in whom the albuminuria was essentially cyclical, though the latter peculiarity might occur in Bright's disease also.

Dr. Pye-Smith believed that there was no physiological albumen, and that functional albuminuria was for the time being pathological. He compared albuminuria with hæmoptysis, always serious but not necessarily indicating incurable organic disease. He would defer an insurance of the albuminuric subject rather than try to draw a distinction which was often impossible to be drawn.

Prof. W. T. Gairdner, of Glasgow, said that the occurrence of albumen after great physical or mental strain showed, not that the albuminuria was physiological, but that the strain — whether, for instance, in pedestrianism or in cramming — was unphysiological. He would, on the other hand, admit the term *functional* albuminuria. Its presence in a life-insurance applicant calls for postponement.

Dr. Rabagliati interpreted albumen in the light of the specific gravity. If the latter was above 1.020, it suggested beginning lithæmic nephritis. If below 1,010, it meant further advance of the disease. The Scottish Widows' Fund found the average death age of albuminurics to be fifty-seven, and he advised considering that to be the life expectation of an albuminuric without casts or other definite lesion.

Dr. Saundby would accept for insurance "unquestionably" a case where the albumen disappeared after a period of recumbency. He would always reject a risk where there had been previous nephritis, and said that while he believed there were other innocuous forms of albuminuria, they were, for insurance purposes, at present, speculative, and should be taken only for short periods or increased premium.

Dr. W. J. Tyson thought the number of deaths from

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[1] The Significance of Albuminuria as a Symptom. By Calvin Ellis, M.D. 1880.

Bright's disease was small, compared with the number of cases of albuminuria met with in practice. He lamented the popular knowledge of the usual significance of albumen, which gave patients much unnecessary anxiety and distress.

Dr. George Harley believed that the albuminuria of hepatic, cardiac, cerebral and pulmonary origin was associated with a specific gravity of over 1,015, and was thus distinguishable from the albuminuria of Bright's disease, which, being associated with disorganization of renal tissue and retention of salts, always had a lower density of the urine.

In general, the position that albuminuria is not necessarily of grave import seemed to be taken by Drs. Pavy, Tyson, Saundby, and measurably by Dr. Drysdale; Drs. W. T. Gairdner and Eddison, occupying a somewhat intermediate position, both said they looked upon albumen as a "danger signal." The more conservative view, which distrusts all cases that have been albuminuric, was held with more or less rigidity by most of the other speakers.

The physician who looks to the Leeds discussion to clear up the question of the prognosis of albuminuria will be much disappointed. The solution of the problem requires the answer to two questions. First, is albuminuria consistent with health? Second, if so, do we possess any means of distinguishing such cases from those in which it accompanies grave disease? The answer to the first question, which a decade of years ago would have been universally negative, is now given by an influential contingent of the profession as affirmative. The answer to the second question is not yet forthcoming.

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CHIMAPHILA UMBELLATA AS A DIURETIC.

Abet, an interne of Cochin hospital, has been experimenting with this old diuretic herb in that hospital. He has tried the decoction, the infusion, the tincture, and other fluid preparations, lastly the soft hydro-alcoholic extract, only to recognize the superiority of the latter over all the other preparations. The hydro-alcoholic is thus made: Ten ounces of pipsissewa leaves are exhausted with alcohol at 90°, and a soft alcoholic extract is got by evaporation and concentration. The leaves that had been acted upon by the alcohol are now steeped for two hours in two quarts of water; the whole is then cooled and filtered. To this filtered liquid is now added the alcoholic extract, and after all the soluble parts are extracted, the whole is again filtered, and the filtrate is evaporated in a sea-bath down to the consistence of a soft extract. Ten ounces of the powdered leaves yield about three ounces of extract. This extract is given in doses amounting to two to four drachms a day. The formula according to which the drug is given is as follows:

Soft hydro-alcoholic extract of Chimaphila,	10 to 15	grammes.	
Syrup Aurantii Corticis	25	"	
Rum	10	"	
Water	80	"	M.

Of this preparation, a tablespoonful is given every two hours.

Experiments on animals proved that the chimaphila was not poisonous in any dose. Abet himself ingested an ounce and a half of the soft extract without experiencing any bad results.

Eleven patients in the hospital were treated by this diuretic preparation. All were cardiac patients with œdema and dyspnœa, who were making very little urine. The medicine worked well in all these cases but one; this patient was influenced by no diuretic but digitalis. The diuresis in some of these patients amounted to 5,000 grammes of urine in the twenty-four hours. They took daily in potion for a month and a half, from ten to fifteen grammes of the extract. The diuresis in all cases began with the second day, and remained at this maximum till there was complete disappearance of the œdema, when the quantity of urine fell to the normal figure.

The chimaphila seemed to have no special action on the heart.

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THE NEW TÆNICIDES.

Areca nuts are brought from India, Ceylon and the Philippine Islands. The *Areca Catechu*, of which they are the fruit, is a palm. *Arecaline* is the active principle, and it is to this that the tænicide property of areca nuts is due. In its chemical composition and its properties, this alkaloid bears a marked resemblance to pelletierine, the active principle of pomegranate. Arecaline is an oily volatile liquid, with alkaline reaction, soluble in alcohol, ether, chloroform and water. With acids it forms soluble salts.

Areca nuts are given in the form of powder; the dose is from a drachm to a drachm and a half. The alkaloid has not yet been administered with tænicide intent.

The rules for the administration of the areca powder are much the same as those given for the administration of pomegranate bark or pelletierine. Arecaline being a poison to the worm, benumbing and paralyzing it for the time, the administration of the nuts must be followed by an active purge to remove the entire worm before it has time to recover from its stupor. It is well to precede the ingestion of the remedy by milk diet, and by a purgative or enema the evening before, that the intestines may be cleared of fæcal matters, and that the drug may have a better chance of coming in contact with the worm.

The helminth is generally expelled entire four or five hours after the ingestion of the remedy.

Another tænicide is the fruit of the well-known cocoanut, *cocos nucifera*. For a long time the albumen of the cocoanut has been prescribed as a tænifuge in countries where the *cocos nucifera* grows. Berenger-Teraud, however, says that he has made trial of this remedy a great many times, and only once out of twenty-four succeeded in obtaining the expulsion of the head of the worm.

Pariso, of Athens, writes that while he resided in Abyssinia where it is the fashion to have tape-worms, he chanced to discover the tænicide properties of this albumen. On his return to Athens, he tested it thoroughly, and always with satisfactory results, the whole worm being expelled dead.

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MEDICAL NOTES.

— The leper colony on the Sandwich Islands contained a hundred persons in 1884. At present the number is smaller and most of them are men. The government, according to recent reports, contributes $100,000 a year toward the expenses of the colony, and three years ago the king personally inspected it. The average duration of the disease is eleven years and the mortality fifty-eight per thousand. The local physician, Dr. Hoffman, is a victim of the disease.

— Liberia, the colored Republic on the west coast of Africa, founded by the American Colonization Society some forty years ago, is, according to Mrs. Jane Rose Roberts, wife of the late President Roberts of the young nation, utterly destitute of institutions in which her poor and sick people can be cared for. Mrs. Roberts is now in Boston. She has come to the United States for the purpose of presenting the facts in the case to the friends of Liberia. The hospital which is needed will cost $20,000, and Mrs. Roberts has thus far in hand $1,400, with $300 promised her by the American Colonization Society. The nearest hospital to Liberia is the one at Cape Palmas, about three hundred miles from Monrovia.

— The corner-stone of the American hospital at Teheran has just been laid, according to press dispatches, Hon. Spencer Pratt, minister of the United States to the court of the Shah, officiating. The ceremony was witnessed by a select assembly, comprising prominent members of the imperial family, high dignitaries of State, noted representatives of the different departments of the Persian Government, and the ladies and gentlemen of the resident American colony. The United States minister in an address explained the purpose of the hospital, and how the plan, first conceived years ago by the distinguished American physician at Teheran, Dr. W. W. Torrence, was at last put into execution through the latter's perseverance. The first donation to the fund for the erection of an American hospital at Teheran was made by Mrs. W. H. Ferrey of Lake Forrest, Ill., and amounted to about four thousand dollars. To this the American Presbyterian Board of Foreign Missions added five thousand dollars, which sum it is understood to have since increased. Further subscriptions have also been received from other quarters, and Persians of distinction have lent a generous hand to the undertaking.

BOSTON AND NEW ENGLAND.

— Gen. T. W. Hyde has put in an estimate of $60,000 for the erection of a suitable hospital at Soldiers' Home in Togus, Me., and Congress will be asked to appropriate that sum at the next session. The hospital accommodations at the home at Togus are entirely inadequate and far below those enjoyed at the homes in other sections of the country.

— Special Justice Bosson recently gave his decision in the Chelsea police court in the case where State Inspector Edwin J. Brown, under chapter 149 of the Acts of 1888, charged the school committee of Revere, through its chairman, Frank H. Dow, with criminal neglect in not providing proper ventilation in the Winthrop Avenue School-house. The testimony of the government tended to show that the only means of ventilation used in that school-house was through an eight-inch tin pipe, connected with a twelve-inch pipe, which had its ending in the chimney. This pipe would only allow two feet of air per minute to each scholar, while the sanitary regulations require twenty-five feet per minute. The defence was mainly that a proper notice was not given the school board under the law, and that the town, by refusing to appropriate money for ventilating purposes, practically absolved the school board from all blame.

Justice Bosson discharged the defendants. He said, according to the press reports, that the evidence tended to show that the school in question lacked perfect means of supplying fresh air and heat, the size, position and arrangement of the ventilating flues being probably insufficient for the demands made upon them during the class hours; but in order to sustain the prosecution the court must find that the school-house in question is not "ventilated in such a proper manner that the air shall not become so exhausted as to be injurious to the health of the persons present therein." That is, the court must not only find that there is a degree of exhaustion, but such a degree as to be injurious to health.

In the absence of all testimony as to the quality of the air, the absence of any proof that any injurious effects have resulted from the condition, and the entire absence of any medical or competent expert testimony on this point, the court felt obliged to find that the prosecution has failed to prove that there is such a degree of exhaustion.

NEW YORK.

THE LAYING OF THE CORNER-STONE OF THE NEW YORK ACADEMY OF MEDICINE.

— The corner-stone of the new building of the New York Academy of Medicine was laid on the afternoon of October 3d, in the presence of a large and representative gathering. The ceremonies were commenced by an invocation by the Right Rev. Henry C. Potter, bishop of New York, after which an address was delivered by Dr. A. Jacobi, ex president of the Academy. In the course of it, he said: "The peculiar relations of the individual physician to the patient or the family intrusted to his care are widened in the relations of the profession to the public. Great epidemics take the place of a single case; the protection of a community depends upon skilled physicians. The Academy has furnished a consulting board to all the health department's hospitals. A committee of the Academy was intrusted with the inquiry into the report on the condition of quarantine. It was to its report that the first appropriation for the rebuilding of the quarantine station was due, and to its recommendations that improvements are being carried out at the present time. In this way the medical profession excludes epidemics and guards both physical health and the economic interests of the city."

Ex-President Grover Cleveland then delivered an address, the commencing and closing portions of which were as follows: "The congratulation and the satisfaction which attend this hour especially belong to the members of the Academy of Medicine. This is as it should be, for the exercises of to-day signalize an achievement wrought by their activity and energy, and give proof of their devotion and attachment to their chosen profession. To the members of this organization the corner-stone which we now lay is an honor, for it is a monument which marks an important advance in the attainment of the purpose of the Academy, as declared in its constitution, the promotion of the science and art of medicine. In these extensive foundations is also found proof of the progressive ideas of these earnest men, and their constantly enlarging estimate of what is necessary to meet the purposes to which their energy is directed. . . . I am sure that you are not inclined to ignore the aid you have received in the project you have undertaken from the laymen among your fellows. Nor can you forget that underlying all that you have done and all that you have received are our free American institutions, which encourage and give scope to every worthy effort, and which offer fitting rewards for intelligent and well-directed labor in every condition of life. You will not, therefore, I trust, deem it impertinent if I remind you that none of us are absolved from the duty of aiding in the maintenance in complete integrity of these free institutions, and that this requires the thoughtful care and attention of every citizen. You do much for your country when you raise the standard and enlarge the usefulness of your profession; but you do not accomplish all you can, nor do you discharge your full duty of citizenship unless you also attempt to better the condition of public affairs and give to political topics and movements the benefit of your trained thought and well-informed judgment. In this way assist in making safe and sure the foundations upon which rests the success and value of all your professional efforts and accomplishments. I hope when we shall celebrate here the discovery of our country that we may point out on this spot, in your completed building, a splendid monument of the progress of our medical education; a monument which shall not only prove to the stranger that our physicians are proud of their profession, but one which shall also be a reminder that those who govern within its walls do not forget in their devotion to the science and art of medicine their other duties of citizenship."

Miscellany.

HAIR PASSED IN THE URINE.

Dr. William O'Neil, records in the *Lancet*, (September 14th,) a case presenting the above certainly very rare symptom. The patient was fifty years of age, rather short and stout, and regular and temperate in his habits. Twelve months before he called on the physician, he began to suffer from irritability of the bladder; three months after this he noticed blood in his urine; and about five months subsequently to the hæmorrhage he discovered hairs in that fluid. The hairs at the outset were single and not very numerous, but as time went on they increased in number, and some of them formed little tufts. The patient sometimes felt a sense of weight and uneasiness in the region of the bladder but he did not seem to have suffered much pain, excepting occasionally when in the act of micturition the flow of urine was interrupted by clots of blood. The hæmorrhage from its commencement recurred every five or six weeks, but the bleeding was not very profuse at any time. In the attack preceding his calling the doctor, he thought, however, that he had lost more blood than on any other previous occasion; nevertheless he was still a ruddy-faced healthy-looking man. He had declined in weight, but this he accounted for by recently defective appetite, and from being frequently disturbed in the night by the irritability of the bladder. The patient's urine was abundant, averaging about four quarts a day. He drank milk freely. The specific gravity of the urine ranged from eight to ten degrees; the reaction of the urine inclined to alkalinity, and when free from blood it contained merely a trace of albumen, but no renal casts, mucus or pus. Floating in the urine or lying on the bottom of the chamber-vessel now and again could be seen particles of matter which the patient called "skins," and which to the unassisted eye looked like little bits of coagulated albumen or fibrin stained more or less with blood. Also in the urine at all times could be seen hairs more or less numerous, of various shades of dark and light color, and varying in length from half an inch to two inches and a half. He had drawn out of the urethra a few hairs four or five inches long. On looking at some of the ordinary hairs the majority of them were found to be light in color, and that the thick and thin ends are well marked, even in the most downy specimens. When the urine contained blood, the hairs assisted in forming little clots, which the patient had sometimes difficulty in voiding; indeed it was this fact that first drew his attention to the hair. The urine contained besides hair, blood corpuscles, epithelial scales and once pus cells.

With the exception of the bladder complaint the patient considered himself in fairly good health. His pulse was regular, his heart and lungs were sound and there was little or no increase of temperature. On account of the hæmaturia he was ordered gallic acid and hamamelis virginica, and when the hæmorrhage was subdued he took nitric acid, buchu, uva ursi, and strychnine. In this way he went on slightly improving until the sultry weather of August, when he was attacked by most violent diarrhœa and vomiting, and whilst in this state he was suddenly seized with apoplexy, which carried him off in a day or two. The patient's family is peculiarly susceptible to bowel affections, which in its members generally assume a grave character, for two of his sisters and a brother had died of intestinal diseases of some kind.

Very unfortunately there was no post-mortem examination and it was impossible to say what the state of the bladder was that gave origin and growth to the hair which constantly appeared in the urine. The writer conjectures that the blood proceeded from a villous or papillomatous tumor of the bladder and that the hairs grew on the mucous membrane, from which they were constantly shed.

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Correspondence.

[From our Special Correspondent.]

PARIS LETTER.

Discussion at the Societe de Chirurgie on the Electrical Treatment of Uterine Fibroids. — Professor Charcot and the Salpetriere.

Paris, September 20, 1889.

A long discussion has lately taken place at the Societé de Chirurgie on the electrical treatment of uterine fibromata compared with the other methods. The debate was introduced by Dr. Lucas-Championnière, who read a note giving the results obtained by him conjointly with Dr. Léon Danion, a well-known electrician in his service at the Hôpital Saint Louis. If there still remains a good deal to study on this subject; if there are other indications to be investigated; if it is true, in fine, that surgery can alone pretend to the radical cure of uterine fibromata,—the conclusions of Dr. Lucas-Championnière are not the less very favorable to the treatment which he classes, without hesitation, in the first rank among the medical means employed in the treatment of this class of affections. This communication provoked a discussion in which several members of the society took part. — among them may be named Drs. Bouilly, Schwartz, Kirmisson, Segond, Trélat, Le Dentu, Berger, and Tillaux, all well-known surgeons, who have supported, and some of them have even accentuated, the conclusions of Dr. Lucas-Championnière. Others, a few in number, with Drs. Terillon, Polaillon, and Terrier, expressed themselves as little or not at all favorable to this mode of intervention. That which gives a great value to the judgment of the principal members of the Societé de Chirurgie is, that nearly all of them are distinguished laparotomists, and that the surgical successes of Dr. Lucas-Championnière in particular are most remarkable. Another circumstance which gives to this communication a still more interesting character, is the fact that Dr. Léon Danion, who for several years has endeavored to examine thoroughly this question of electrotherapy, has modified profoundly in basing his investigations on physical and physiological grounds, the ordinary procedure adopted by others. He acted, nearly always, simply in the cavity of the uterine neck, and only utilizing intensities never exceeding sixty or sixty-five milliampères. He has, therefore, suppressed the higher intensities and the intra-uterine action; but he practises the reversing of the current, which appears to give to the treatment a considerable activity, as testified by the history of eleven patients whom he had treated in the wards of the eminent surgeon of the Hôpital Saint Louis, besides a number of cases treated by himself in private practice, and all of whom, with only one exception, whose case was complicated with rectal hæmorrhages, have rapidly derived the most complete benefit which the treatment has till now given. Dr. Lucas-Championnière concluded his paper by recalling that he did not mean to attribute to the electric treatment of uterine fibromata and other uterine affections a primordial importance; but he wished to impress upon his hearers that, in the cases where the surgical treatment is not justified, it is the best of palliatives, and it succeeds particularly at the period of the menopause. He believes it to be not only unnecessary but positively dangerous to employ high intensities: one succeeds as well with the lower intensities, and there is no inconvenience to be dreaded. He himself never employs an intensity exceeding ninety milliampères. Moreover, he remarks, that Dr. Apostoli believes the intra-uterine action indispensable, and thrusts the electrode into the uterine tissue when he cannot introduce it into the uterine cavity, — a most condemnable practice. Dr. Lucas-Championnière believes that, in this latter case, one should be contented to apply it to the uterine neck. Finally, he reminded the meeting that Dr. Danion attaches a great importance to the reversing of the current; and he believes it to be advantageous to practise the operation with the speculum, after having thoroughly cleaned out the vaginal cavity.

PROFESSOR CHARCOT.

It would seem almost superfluous to say anything of Dr. Charcot, as he is already so well known in the profession. He is certainly one of the most remarkable medical characters of the day, and even physically his person and features bear a peculiar stamp. He is a man of ordinary stature, about fifty-five years of age, and stoops a little. His face is pale and clean-shaven, resembling very much that of the first Napoleon, and giving the impression of a thoughtful mind. After having for a long time devoted himself to the study of pure pathological anatomy, he gave himself up to the clinical study of nervous affections, a scientific territory till then almost unexplored. He here displayed rare qualities of observation, an exemplary patience, a marvellous prudence and the most perfect method. He has won the intellectual esteem of his bitterest opponents, a world-wide reputation, and the assurance of having attached his name to a work which will remain imperishable. Professor Charcot's clinic at the Salpêtrière is well known, and constitutes the greatest scientific centre in France for the study of the pathology, diagnosis, and treatment of nervous diseases. It is attended by physicians and students from all parts of the world, where they find a vast amount of clinical material, and the complete methods of study organized and developed by the eminent professor, aided by a body of distinguished pupils and assistants who surround him in his daily visits. For many years Professor Charcot has taken a foremost place among the leaders of medical science; his clinique, his laboratories, his works and his pupils constitute one of the chief glories of the faculties of Paris. His lectures are most impressive, — he is sober in manner, clear in diction, picturesque in illustration, original in conception, indefatigable in research, and spares neither time, labor, nor wealth in using all the methods of clinical illustration at his disposal. It would be fastidious and useless to analyze here all his discoveries; I would simply refer to some which leave the narrow limits of medicine and touch somewhat on philosophy. In the chaos of the notions acquired on cerebral functions, it cannot be denied that it was Charcot who was the first to throw light on the subject, in finding, as if by a stroke of genius, the method which permitted him to fix the cerebral motor localizations. He at the same time with Kussmaul taught men the mechanism of their memory and of their language. And who does not remember the debates on the questions of magnetism and of hysteria that have so recently taken place among the lay and medical public? It was Dr. Charcot who, armed with his scientific *sang-froid* and method, reduced to definite laws facts which, in appearance, were the most incoherent. I may here observe that, to the Hospice of the Salpêtrière, which was originally intended only for the aged and insane of the female sex, there being 3,145 of the former and 720 of the latter, there have been added forty-two beds for male patients and a certain number of female patients suffering from nervous diseases, which additions were made for the most special study of diseases of the nervous system. It may be said that Dr. Charcot began his professional career at that asylum. He was interne in it in 1852, and became physician in 1862. He was appointed professor of diseases of the nervous system in 1881, a chair which was created for him. Since 1862, he has not ceased to give his memorable series of lectures and clinical conferences, which are held every Tuesday morning at the Salpêtrière, and on Friday morning he holds consultations, both of which are always well attended. In addition to the above there are thirty beds for children afflicted with nervous diseases, and two hundred beds for epileptics. Besides these, he has the control of a series of infirmary wards, into which are brought all the patients whom he desires to select from among the infirm women who are the permanent inmates of the other parts of the Salpêtrière. Altogether, he has at his disposal for clinical study and under direct treatment more than 2,000 patients. No wonder, then, that with this vast experience Professor Charcot should be regarded as the highest authority on nervous affections. He is also a member of the Academy of Medicine.

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NOT THE PIONEER.

Boston, October 4, 1889.

Mr. Editor, — In the Journal of October 3, Dr. Williams has shown that the American Gynecological Association is not the pioneer special association. In point of fact, it ranks fourth on the list. The American Neurological Association was formed the year before it, and held its fifteenth annual meeting last June, at Long Branch.

Yours truly,
Philip Coombs Knapp, M.D.

ATTENDANCE ON MEDICAL MEN AND THEIR FAMILIES.

Boston, October 7, 1889.

Mr. Editor, — Times change, surely. Not a dozen years ago, a section (not adopted) in a draft-code prepared by a committee for the Massachusetts Medical Society was assailed with denunciation and ridicule. This section merely said, "for such professional services it will be proper to offer the whole or a part of the usual fees, which, under some circumstances, may be accepted without violation of professional courtesy."

Now, it is said to have become quite customary hereabouts to charge medical men as others, especially if the physician be called for his eminence rather than for proximity or intimate friendship. Perhaps this is expedient, for often such services have been quite other than properly requited. Many cases could be cited, — for instance, in one, nearly or quite two hundred visits, many of them urgent or exactingly protracted, did not receive even "formal thanks," although the patient had solemnly enjoined upon the family, abundantly able, to pay full fees. In another, a very laborious attendance was rewarded by unpleasant complaints, to neighbors and friends, of neglect and want of interest, because, not knowing their wishes, the attendant did not perform certain services not usually expected of medical men.

More of such instances are unnecessary, for the object of the present writing is to call the attention of ancient opposers to an article and editorial in the *London Lancet* of September 28th, p. 676, the last number that has reached this country.

Yours very truly,
Observer.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 28, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	641	284	16.48	11.70	9.12	1.12	3.68
Philadelphia	1,010,245	312	111	12.48	16.00	2.88	4.80	3.20
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	161	72	18.60	11.78	6.20	5.58	3.72
St. Louis	450,000	157	63	16.04	12.12	5.76	4.48	3.84
Boston	413,567	175	62	24.51	9.69	10.83	3.99	6.41
New Orleans	250,000	130	38	16.17	21.56	5.39	—	2.31
Cincinnati	225,000	121	—	23.24	12.45	3.32	1.66	14.94
Washington	225,000	93	34	27.00	15.12	9.72	6.48	8.64
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	26	7	26.95	11.55	11.55	3.85	—
Charleston	60,145	56	24	15.41	8.95	12.53	1.79	—
Portland	40,000	18	5	16.66	—	11.11	5.55	—
Worcester	78,292	29	16	44.85	13.80	27.60	6.90	3.45
Lowell	71,518	46	24	28.21	8.68	15.19	2.17	8.68
Cambridge	65,552	14	9	35.70	14.28	21.42	—	14.28
Fall River	62,647	28	13	22.50	18.75	7.50	11.25	—
Lynn	53,334	15	—	6.66	13.33	6.66	—	—
Springfield	40,731	6	2	—	—	—	—	—
Lawrence	40,619	20	7	30.00	20.00	5.00	5.00	20.00
New Bedford	37,253	15	9	53.28	—	33.33	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	10	5	20.00	—	10.00	—	—
Salem	29,011	14	9	21.42	7.14	7.14	—	7.14
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	10	1	10.00	10.00	10.00	—	—
Haverhill	26,058	8	1	—	37.50	—	—	—
Taunton	25,170	5	1	20.00	40.00	20.00	—	—
Gloucester	24,263	3	2	33.33	—	—	33.33	—
Newton	21,553	8	2	37.50	—	12.50	25.00	—
Malden	19,774	—	—	—	—	—	—	—
Fitchburg	17,534	3	2	—	—	—	—	—
Waltham	17,332	5	1	40.00	—	—	—	20.00
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	3	0	—	66.66	—	—	—
Quincy	13,728	5	1	20.00	40.00	—	—	—

Deaths reported 2,037: under five years of age 805; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 313, consumption 291, acute lung diseases 155, diarrhœal diseases 167, diphtheria and croup 100, typhoid fever 70, whooping-cough 27, malarial fever 26, cerebro-spinal meningitis 12, scarlet fever 9, measles 2. From whooping-cough, New York 12, Boston 4, Philadelphia, St Louis and Cincinnati 2 each. New Orleans, Washington, Nashville, Fall River and New Bedford 1 each. From malarial fevers, New York 10, New Orleans 9, Baltimore 5, Nashville and Charleston 1 each From cerebro-spinal meningitis, Cincinnati, Worcester, New Bedford 2 each. Philadelphia, Washington, Nashville, Somerville, Waltham and Quincy 1 each. From scarlet fever, New York 3, Philadelphia and St. Louis 2 each. New Orleans and Lowell 1 each. From measles, New York and Salem 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending September 21st, the death-rate was 17.0. Deaths reported 3,117: Infants under one year of age 930, acute diseases of the respiratory organs (London) 142, diarrhœa 279, diphtheria 68, scarlet fever 58, whooping-cough 57, fever 45, small-pox (Sheffield) 1.

The death-rates ranged from 12.4 in Brighton to 27.5 in Preston, Birmingham 14 7, Bradford 17.5, Cardiff 20.4, Hull 20.6, Leeds 20.4, Leicester 12.8, Liverpool 18.9, London 15.2, Manchester 21.1, Newcastle-on-Tyne 26.9, Nottingham 14.3, Sheffield 21.0.

In Edinburgh 18.0, Glasgow 17.3, Dublin 28.5.

The meteorological record for the week ending Sept. 28, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: –

Week ending Saturday, Sep. 28, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...22	29.85	52.0	57.0	46.0	68	64	66.0	W.	W.	14	4	C.	C.		.0
Monday,..23	30.04	54.0	64.0	43.0	60	54	57.0	W.	W.	13	6	C.	C.		.0
Tuesday,.. 24	30.12	57.0	67.0	47.0	65	78	72.0	O.	S.W.	0	8	C.	C.		.0
Wednes. ..25	30.13	58 0	62.0	54.0	89	89	89.0	O.	E.	0	10	F.	F.	0.20	T.
Thursday, 26	29.89	64.0	72.0	57.0	94	95	94.0	E.	W.	8	4	O.	O.	8.00	.17
Friday,....27	29.97	56.0	61.0	50.0	58	59	58.0	W.	W.	8	9	C.	C.		.0
Saturday,.28	30.11	52.0	59.	44.9	86	69	78.0	W.	W.	14	8	C.	C.	0.05	T.
Mean for Week.															

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 28, 1889, TO OCTOBER 4, 1889.

By direction of the Secretary of War the leave of absence granted Major **Benjamin F. Pope**, surgeon, in S. O. No. 54, August 17, 1889, Department of Texas, is extended one month. Par. 6, S. O. 224, A. G. O., September 26, 1889.

Adair, George W., captain and assistant surgeon Leave of absence for one month. S. O. 90, Headquarters Department of the Platte, September 25, 1889.

With the approval of the Secretary of War leave of absence for fourteen days is granted Captain **Alonzo R Chapin**, assistant surgeon. Par. 10, S. O. 223, A. G. O., September 25, 1889.

Poindexter, Jefferson D., assistant surgeon U. S. Army. Granted leave of absence for one month. S. O. No. 113, Headquarters Department of Dakota, September 30, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 5, 1889.

Harmon, George E. H., surgeon, detached from the U. S. S. "Constellation" and ordered to Naval Academy.

Lowndes, C. H. T., assistant surgeon, detached from the U. S. S. "Constellation" and to Naval Academy.

Winslow, George F., surgeon, ordered to Marine Rendezvous, Boston.

Henry, Charles P., assistant surgeon, ordered before the Retiring Board for examination.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE SIX WEEKS ENDED OCTOBER 5, 1889.

Fessenden, C. S. D., surgeon. Granted leave of absence for thirty days. October 3, 1889.

Wyman, Walter, surgeon. Granted leave of absence for thirty days. September 3 and 21, 1889.

Sawtelle, H. W, surgeon. Granted leave of absence for seven days. September 26, 1889.

Austin, H. W., surgeon. Granted leave of absence for thirty days. September 9, 1889.

Gassaway, J. N, surgeon. When relieved at New Orleans, La., to rejoin station at Cairo, Ill. September 30, 1889.

Goldsborough, C. B., surgeon. Leave of absence extended thirty days on surgeon's certificate of disability. September 16, 1889.

Armstrong, S. T., passed assistant surgeon. Relieved from duty at New York; ordered to command of service at Cleveland, Ohio. September 17, 1889.

Ames, R P. M., passed assistant surgeon. Assigned to duty at New Orleans, La., upon expiration of leave of absence. September 30, 1889.

White, J. H., passed assistant surgeon. Leave of absence extended thirty days on surgeon's certificate of disability. September 21, 1889.

Norman, Seaton, assistant surgeon. Granted leave of absence for thirty days, to take effect when relieved. October 4, 1889.

Pettus, W. J., assistant surgeon. Ordered to Portland, Me., for temporary duty. September 26, 1889. Granted leave of absence for twenty-six days, to take effect when relieved. October 3, 1889.

Kinwoun, J. J., assistant surgeon. Granted leave of absence for thirty days. September 21, 1889.

SOCIETY NOTICE.

Boston Society for Medical Improvement. – A regular meeting of the Society will be held Monday, October 14, 1889, at the Medical Library, 19 Boylston Place, at eight o'clock, P M Reader, Dr. E. J. Forster. Subject, Mushrooms and Mushroom Poisoning. Dr M. H. Richardson will report a case of Pregnancy complicating Ovariotomy. Dr. F. B. Harrington will report a case of Intussusception and Rupture of the Intestine in a child of five months, with specimen.

F. B. Harrington, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Louisiana State Medical Society at its Eleventh Annual Session, held at New Orleans, La, April 9, 10, and 11, 1888.

The Epitrichial Layer of the Human Epidermis. By John T. Bowen, M D. From the Histological Laboratory of the Harvard Medical School, with five figures. Reprint from the Anatomischer Anzeiger.

Original Articles.

PRIMARY MALIGNANT DISEASE OF THE DUODENUM.[1]

BY E. N. WHITTIER, M.D.
Visiting Physician Massachusetts General Hospital.

Many regard the question of primary malignant disease of the upper bowel, unpromising and unprofitable for discussion; that cutting down upon and into the mass of literature on the subject, will only serve to confirm the pre-existing opinion of the complex nature of the theme, and to reveal such blending and fusion with adjoining topics as to demonstrate anew the impossibility of an accurate and clean dissection and enucleation of the question.

The leading authorities are in concord with refererence to the diagnostic difficulties met with in subjects of intestinal malignant disease. No rules have yet been drawn up, no tables have yet been formulated, no plan has yet been presented, no safe scheme has yet been devised by which speedily or in any important degree to the advantage of the patient, an early diagnosis of cancer of the digestive tube can be established. To the clinician, the evidence furnished by the subjective and objective symptoms may appear convincing in large measure, nevertheless it is defective and incomplete, lacking "definition" in the relation which the rational and physical signs should sustain to each other; nor do the methods employed in differential diagnosis lead with sufficient directness to definite and logical conclusions; the various factors do not coincide in any such degree of harmony as to afford conclusive and cogent reasons upon which to base positive diagnosis.

It is, therefore, by the method known as "exclusion" that the most accomplished diagnosticians achieve their desirable results when called upon to deal with this complex question; and to each and every diagnosis of cancer of the small intestine, there should be appended the reserve clause, "an autopsy is needed for full confirmation."

To some it may appear that this pronounced opinion bearing on the diagnosis of malignant disease of the upper bowel, can apply to the disorder in its earliest stages only, yet all who have had to deal with subjects of this class must admit that in all its stages, the disease begets doubts, uncertainties, and indecisions which torment the attending and consulting physicians, and we are prepared to concede, that to the necroscopist — "he who views the body after death" — must be relegated in such cases one of our choicest privileges, the power of clear and definite ante-mortem diagnosis.

I find myself limited by the subject chosen for this paper, to the consideration of those cases wherein the malady is located in that portion of the digestive tube which is actively engaged in digestive processes; for, however much we may know of the function of the large intestine in reference to absorption, and however great the temptation to include in my theme intestinal cancer as a whole, and particularly the localities where its frequency is greatest, and diagnostic features are most pronounced, we must grant that the colon and the rectum do not play any important part in the preparation of food for the maintenance of life.

The statistical element in intestinal cancer is extremely unsatisfactory and incomplete; but few tables are in existence, and none of these are definite. The subject of primary intestinal cancer with reference to precise or comparative seat, and percentages of location cannot be developed profitably with the material at our command. The statistics at present accessible are not useful, and they are contradictory. We cannot separate from the mass of the reports, data which will enable us to conclude what proportion of intestinal neoplasms are duodenal, what are of other parts of the small intestine; nor can we advance much beyond the Vienna tables, now classical, wherein

Cancer of the Rectum was	80%	of the whole.	
" " Colon was	11.5%	"	"
" " Ileocæcal Valve and immediate parts was	4.1%	"	"
" " Small Intestine was	4.3%	"	"

Further computation, from all sources, would give about one per cent. of intestinal cancer, primary in the duodenum. This is the nearest approach which has yet been made, except in some of the smaller tables, towards determining the relative frequency of the different seats of primary cancer of the intestine. For instance, Köhler's table of thirty-four cases is incomplete because he throws out cancer of the rectum and groups

Large Intestine	22 cases
Small Intestine	12 "

(and of the twelve, nine are of the duodenum); but he fails to mention the segment in which the largest number originated. It might further be stated that intestinal cancer as compared with cancer of other parts of the body varies according to the Geneva and the Vienna list from 4 per cent. to 5.4 per cent.

It is quite generally conceded that the most prominent and persistent factor associated with intestinal morbid growths, is diminution of the lumen of the tube, and that whether the neoplasm be cylinder-cell, epithelioma, scirrhus, colloid, encephaloid, adenoid, sarcomatous or lymphadenoma, or even benign, the constant tendency is towards obstruction; the most reliable diagnostic symptoms are those arising from impaired permeability.

The mechanism of the process has been defined by the terms obturation, occlusion, and constriction. I think that the frequently employed term occlusion has no place in the diagnostic nomenclature of the disease under consideration, except in so far as it may serve to define or describe the position of a growth which occludes the common duct, and prevents the passage of pancreatic and hepatic secretions into the intestinal canal.

The essential facts are, that a certain class of intestinal new growths arise as disks, as fungoid growths, or as villous prolongations; many other forms at some period assume this type of development, and all such project into the canal and delay or arrest and finally obstruct the passage. Other new growths implicate the circumference of the intestine spread rapidly around the gut, girdling it, and causing notable annular constrictions. So that from one or the other of these two methods, or from both operating in unison, the result obtains with great precision, and the tendency towards complete closure of the canal is persistent and prominent.

It should not be lost sight of that the character, or rather the degree of density of the intestinal contents varies with location, and that the contents of the stomach are poured out through the pyloric orifice in a liquid or semi-liquid state, rendering it possible for a passage to be effected through an extremely small opening, and without the aid of any large degree of peristalsis.

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[1] Read by title at the Annual Meeting of the Association of American Physicians, Washington, D. C., September, 1889.

It is this feature which serves to mask the degree of obstruction induced by the neoplasm, and places high among the rational signs of cancer of the duodenum, the extremely negative symptom of latency. There cannot be in such a disorder in such locality, the influences which are powerful in obstructive disorders lower down in the intestine. I refer to the compensatory hypertrophy of the muscular coat of the bowel; hence it not unfrequently arises, that the symptoms of lessened calibre for a long time latent suddenly declare themselves with great force, and with all the symptoms of an acute and complete stenosis.

Diagnostic difficulties multiply as we ascend the intestinal canal. Localization by tabular views and by percentages, places by far the largest number of cases of cancer of the gut, in the rectum, where the largest opportunity is found for determining the seat of the disease by the employment of the more advanced methods of exploration and examination; the physical and correlative signs are more positive and less confusing in proportion as we near the outlet. In the duodenum the symptoms worthy of the largest confidence are those arising from occlusion of the common duct, with or without evidence of obturation or constriction of the intestine, and the resulting dilation of the stomach and first segment of the duodenum; for it is at this point that the larger number of duodenal cancers are found. When the disease affects the upper third it is with the greatest difficulty differentiated from pyloric cancer, but because the bile and pancreatic secretion find their way into the intestine, intestinal digestion is less disturbed, while if the disease is in the lower third, the presence of bile as a frequent element in the matter vomited, and the evidence of gastric dilatation, are important symptoms. Blood may appear either in the dejecta or in the vomitus, according as the gut is pervious or as the ulcerative processes affect the upper portion, or the lower part of the obturating mass.

The quantity and the quality of the food descending into the intestine determines in large measure the external appearance of the abdomen, though it should be borne in mind that tympanites from intestinal flatulency may closely resemble the meteorism which is constant in cases where obturation or constriction originates in malignant disease of the large intestine. The result, however, in cancer of the duodenum is generally that the belly is shrunken and depressed, "boat shaped," and this is an important reciprocal sign in connection with gastrectasis, and serves to measure, to a considerable extent, the degree of hindrance to the passage of food induced by the neoplasm.

Pain is a very uncertain element in the diagnosis and localization of the disease. Enteralgia arises from so many different causes, and is so frequent in the disorders associated with malignant disease of the abdominal contents, that its significance is extremely doubtful, and its aid in diagnosis unfortunately small, and as a symptom very unreliable.

The pain induced by the local disease is frequently masked by the coincident and consequent pains of flatulent colic, the result of disordered intestinal digestion; changes in the proportions of the intestinal fluids engaged in digestion, are notably frequent and find expression in malnutrition and colicky pains, most marked when the disease involves the mid-section of the duodenum and leads to partial and temporary, or complete and permanent occlusion of the common duct. Jaundice, when present, confirms the opinion that the disease is located as above stated.

No portion of this subject is so unsatisfactory as the question of tumor. Tumor, in other forms of intestinal cancer, is present in a large and commendable degree of certainty; there seems to be some warrant for the feeling that exists at the time of examinations, in cases of suspected malignant disease of the rectum, or of the large, as well as of the small intestine, that the absence of tumor disproves the apprehension and assures the physician that his fears were not well grounded. The rectum, the flexures of the large intestine, and the coils of the small intestine, all afford opportunity for determining the absence or the presence of neoplasms of the type under discussion.

But such is not the case in malignant disease of the duodenum; discoverable, demonstrable tumors do not exist in any considerable percentage of frequency. We are told that the presence of a tumor confirms diagnosis, but we are not permitted to believe that the absence of an appreciable tumor will enable us to dismiss our fears that an active malignant process has already been established, whose course is short and whose termination is speedy and fatal.

Due appreciation of the relative infrequency of tactile, tangible evidence of the disease, does not exist in the profession at large. Text-books are defective in explicitness in this direction. The bare statement, that a tumor when present, confirms the diagnosis, is insufficient and misleading; the sources of error, with reference to the nature of tumors in this locality, are large, and fruitful of mistakes, and hardly need be enumerated; and it must always remain a cause for regret that subjective symptoms, seemingly direct and conclusive, should lack confirmation through the absence of the objective sign whose positive palpable presence, the existence of the disease would seem necessarily to imply.

I append a brief synopsis of thirteen cases of primary malignant disease of the duodenum, not previously presented in connection with a paper on this topic.

Case I. Male, seventeen years. A glutton, and addicted to strong liquors. For over a year had occasional vomiting and more or less violent colic, the attacks becoming more severe. Bowels habitually loose. Two days before death, after eating to excess, he vomited; vomitus was at first food then black matter. Gastric colic became extreme, vomiting became stercoraceous. Great prostration. Cardiac failure. Mind clear. Death.

Autopsy: Stomach enormously dilated. In duodenum, just below opening of the bile duct, was a mass of scirrhous cancer, ulcerated and at one place perforated. General peritonitis. Elsewhere nothing remarkable.

Case II. Male, seaman. Admitted to Baltimore Infirmary for necrosis of metatarsal bone. The operation was followed next day by incessant vomiting and purging. Evacuations dark and fetid. No pain or tenderness on pressure. On the third day universal jaundice came on. The above symptoms persisted and patient died sixteen days after the operation. During the last three days the stools were bloody and fetid.

Autopsy: In second curvature of the duodenum near the entrance of the common bile duct, which was completely obstructed, was a large indurated mass united to the head of the pancreas. Extensive ulceration on inner surface of duodenum. Gall-bladder enormously dilated. Liver extensively diseased and the portal vein completely occluded by the growth. Stomach not diseased.

Case III. Male, age sixty years. Three years before death began to have uneasiness after eating and later to vomit frothy matter. Finally vomiting became incessant and stercoraceous and pain was felt in region of umbilicus.

Autopsy: Stomach dilated five-fold; duodenum enlarged and obstructed six inches beyond the pylorus with an ulcerated encephaloid mass.

Case IV. Male, age eighteen years. Foundry apprentice. Good health up to age of sixteen years; then pain in epigastrium followed by vomiting, constipation, loss of appetite, emaciation. Seven weeks before death a tumor was discovered just below costal cartilages on the right side. Five weeks before death he began to vomit large quantities of black coffee-ground material.

Autopsy: A soft, spongy tumor, three by four inches, growing from posterior wall of descending portion of duodenum. The mucous membrane over the tumor was broken down and the lumbar glands enlarged.

Case V. Male, age eighteen years. Seven months before death the symptoms began with loss of appetite, vomiting, emaciation, very severe paroxysms of pain. Vomitus was coffee-ground matter, one or two quarts at a time, containing blood, black granular matter and sarcinæ. Became sallow and cachectic. Death.

Autopsy: Stomach dilated. A soft, spongy tumor size of an orange, growing from posterior wall of duodenum, covered with a brown slough. Lumbar glands and right testicles were cancerous.

Case VI. Male, age seventy-two years. Pensioner. Fourteen weeks before death he began to suffer from vomiting and flatulence following a very hearty meal. Vomiting continued for five days. No pain. Then gradually became intensely jaundiced. Lost appetite, vomited occasionally, became emaciated, but had no pain. Bowels open, stools slightly tinged with bile. No tumor, pain, or tenderness. Liver slightly enlarged. No ascites. Steady loss of strength, occasional vomiting; became comatose and died.

Autopsy: Stomach somewhat dilated. An indurated mass in the duodenum, near the entrance of the bile duct, ulcerated on the inner surface. Extension of growth into the bile duct caused obstruction with dilation of gall bladder and bile duct. Small nodules of new growth in the liver. Chronic interstitial nephritis.

Case VII. Male, age seventy-four. Laborer. One year before death began to have dyspeptic symptoms. Eight months later a tumor was found in right hypochondrium just below the liver. He then had extreme constipation, paroxysms of vomiting which continued at intervals for several days, vomitus resembling coffee-grounds. Stomach much distended. Continued to work till three months before death, then became very much emaciated, with a sallow complexion.

Autopsy: A tumor involving the entire circumference of the duodenum for about three inches between the pylorus and the bile duct. The interior presented an ulcerated cavity. Stomach greatly distended.

Case VIII. Male, age forty-five years. Had suffered from intermittent fever seven months before death. This was followed by jaundice and a dull gnawing, intermittent pain in the epigastric region. Three months before death again had malarial chills. This attack was followed by severe pain in the stomach, frequent vomiting of food and dark grumous blood. Also had hæmaturia. Steadily grew weaker, vomiting incessantly.

Autopsy: A large fungous mass extended from pylorus to jejunum, reducing the calibre of the duodenum to the size of a quill. Stomach healthy. Liver enlarged. Bile duct distended. Gall bladder dilated. The common duct contained a large calculus. Omentum slightly involved. No disease elsewhere.

Case IX. Male, age seventy-two years. Good previous health. Without apparent cause was taken with jaundice attended with weakness and anorexia. No colic. Jaundice increased. Steady loss of strength. Slight tenderness over liver. No tumor. No ascites. No vomiting. No fever. Six weeks before death had œdema of left arm, then of left leg, then of face. One month before death he became delirious and began to have diarrhœa. Was previously constipated. Œdema then appeared on right side of body. Later diarrhœa and constipation alternated. No abdominal tenderness nor ascites. Increasing cachexia. Death.

Autopsy: Stomach healthy. In second portion of duodenum was a cancerous mass partly obstructing the common bile duct which was much dilated above this point. Some cancerous mesenteric glands.

Case X. Male, age fifty-four years. Six weeks before death was complaining of debility and dyspeptic symptoms, fulness after eating, flatulence, eructations, constipation. One week later began to have constant dull pain referred to left hypochondrium. No special tenderness on pressure or evidence of tumor. No jaundice, nausea or vomiting. Four weeks before death, began to have frequent large amounts of black, grumous, offensive blood in the stools. Became extremely week and anæmic. One week before death he began to vomit, vomitus containing a little blood. Urine contained much indican.

Autopsy: An irregular, nodular, scirrhous mass, two and one-half inches in diameter, occupied the middle third of the duodenum. The duodenum just above the mass was perforated. No disease elsewhere.

Case XI. Male, fifty-one years old. Family history negative. Habits good. Had pneumonia at age of forty-three. Sickness began October 1, 1887, with vomiting, diarrhœa and jaundice. Dull pain in abdomen. A few days later a resistant mass, size of the fist was found in the right inguinal region. The mass disappeared later after free movements of the bowels, but reappeared from time to time. No increase of hepatic dulness, but tenderness in the epigastrium. November 11, left the hospital much improved but stil. jaundiced. Returned January 3, 1888, having lost much in strength and weight. Much jaundiced. Constant dull pain in right of abdomen. Frequent vomiting. Bowels loose. No ascites. A resistant, somewhat tender mass was found in right hypochondrium about size of a lemon. This was aspirated several times during the next few weeks, and small amounts of opaque, thin, watery fluid were removed. Steady loss of strength. Persistent jaundice, bowels loose. Moderate increase in size of liver. March 23d became delirious, and on the 27th after an intestinal hæmorrhage of eight ounces, died.

Autopsy: The upper two inches of the duodenum dilated to twice the usual size. At orifice of the bile duct was a growth size of English walnut with a papillary surface covered with clots. Gall bladder was size of fist, walls much thickened, containing thin pus. Liver enlarged one-third and contained numerous small abscesses corresponding to the distribution of the bile duct.

Case XII. Seen in consultation with Dr. Charles D. Sawin of Charlestown, to whom I am indebted for the following history. A. M., age sixty-six; married, occupation, carpenter. First saw him March 12, 1888, and obtained the following history: Had been for a year under treatment of several different physicians, "for dyspepsia," he said. When I saw him he was able to walk about the house, but didn't care to venture out of doors. At the time complained of failing strength, rapid emaciation, and inability to keep any food on his stomach, though there was a constant desire for food. The vomiting occurred generally from one-half to three-quarters of an hour after taking nourishment and even water; the vomitus made up simply of ingested substances, and very offensive. No blood ever seen. Constipation had during all of his sickness been a prominent symptom. In connection with the vomiting would state that there was no retching. No abdominal pain, but slight tenderness in epigastrium.

Physical signs. Pulse normal and about 70. Chest, — Heart sounds feeble, no murmur. Lungs normal. Hepatic dulness not increased, but in doubt as to whether left lobe of liver enlarged or not. Skin, lemon color at the last. By palpation, still more in doubt as to whether a tumor could be felt. Abdomen retracted, and never distended during the whole course of the disease. Milk and lime water only, by mouth in one-half ounce amounts. Brandy, egg and milk, by enema. Bismuth and hydrocyanic mixture by mouth. Salicylic acid for gaseous eructions. Gradually failed, and treatment was of no avail. Never complained of pain, and died from exhaustion on April 19th. Emaciation extreme.

Post-mortem April 20th. Body extremely emaciated. Abdomen retracted to an extreme. Skin flabby and lemon-yellow in color. Stomach contained about six ounces of yellow, thin and offensive fluid; not dilated to any appreciable extent. Duodenum in its first and descending portions including the whole circumference of the intestine, a hard, smooth (gristle-like) tumor, elongated, its thickest portion being near the pylorus. This tumor was four to five inches in length and involved the three coats of the intestine, the canal being almost completely obstructed and could not be distended. The mucous coat ulcerated and villous in character and hemorrhagic. The wall of the intestine at its greatest thickness about three-quarters of an inch.

Case XIII. I am under great obligation to my friend Dr. Robert Burns, of Plymouth, N. H., for the accompanying specimen, and the history of the case.

G. F. D., of healthy antecedents and good family history, age thirty-three years. No illness of importance up to one and one-half years previous to his death, then and during the rest of his life "indigestion," nausea and great discomfort. About a year before his death, vomiting began and continued with short intervals, but during the last four months it was the prominent symptom, ejecting enormous quantities, two to three quarts at a time, and often ten to twelve quarts in twenty-four hours; this vomiting varied in time from soon after eating to several hours; much of the tissue of the vomitus was green as if Paris-green had been mixed with it. All of the time he was greatly constipated. He had no localized and no excessive pain. He had great discomfort, and sensations of weight and oppression referred to epigastric region, but pain when present, varied in its location, in different parts of the abdomen. There was no marked cachexia, nor was the abdomen shrunken or depressed. No tumor could at any time be made out. The physicial signs were of moderate epigastric distension, and excessive gastric dilatation. He died from exhaustion.

Autopsy showed marked emaciation. Stomach and small intestine for about eight inches greatly dilated, to such a degree that there was no essential difference in size between the stomach and the first six or eight inches of the duodenum. The line dividing the stomach and the duodenum could not be marked out. About eight inches below the stomach was an annular constriction, below which the bowel was much diminished in size and nearly empty. At the point of constriction the small intestine was completely obstructed by a fungoid mass, which acted as a valve; water would not pass down from above but a pencil could be pushed through from below. There was no evidence of disease elsewhere in the body. The symptoms were "indigestion" for one and one-half years, vomiting during the last six months of enormous quantities up to the day of his death, and death from inanition.

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XIII. Unpublished.
Other cases are reported by Murchison, Leube, Tanchou, Descraizilles, Hamilton, Molinelli, Williams and Dixon.

— Edward Atkinson has contributed an article on "The Art of Cooking," which will open the November *Popular Science Monthly.* In it he points out what enormous quantities of food and fuel are wasted in ordinary cooking, and describes the "cooker" and "oven" invented by him, which need but a wonderfully small quantity of oil or gas, and cannot spoil the food.

THE SURGICAL TREATMENT OF BACKWARD DISPLACEMENTS OF THE UTERUS.[1]

BY CHARLES P. STRONG, M D., OF BOSTON.

During the period of the last four years various surgical measures have been proposed for the relief of that condition of the uterus which is so commonly encountered and so often unsuccessfully treated. To those operations which have been performed with sufficient frequency to entitle them to presentation, I invite your attention.

There are two points which I wish to emphasize at the beginning of this paper. First, it is not intended to discuss the question whether backward displacements of the uterus form, *per se*, lesions directly or indirectly responsible for certain symptoms, and, as such, demand treatment, nor the pathological changes which cause these conditions. Secondly, it is assumed that all practicable non-surgical measures, packing, pessaries, etc., have been previously employed and failed. To obtain a fair estimate of the relative frequency of these lesions, I have examined the records of the last six hundred cases of pelvic disease that have been treated at my clinic at the Free Hospital for Women, selecting those records rather than those of my private practice, because the diagnosis is there recorded of the condition which is considered to be the cause of the patient's symptoms, and does not also embrace a multitude of minor details. There are recorded in these six hundred cases, 78 cases of retroflexion and 75 cases of retroversion, — that is, 25 per cent. of the cases applying for relief have symptoms which I considered due to backward displacement of the uterus.

At the outset two distinct divisions of this displacement must be made. First, backward displacements which are not adherent. Second, backward displacements in which there exists union by slight or by firm adhesions between the uterus and adjacent viscera or pelvic walls. The treatment of the two classes by surgical measures demand separate consideration. In the former it is limited to the best means to be adopted for retaining in its normal position the uterus which can be replaced manually; in the latter, the additional consideration of how first the uterus may be freed from its abnormal position and subsequently secured. It may be well to consider for a moment what these adhesions are and how they originate. Before laparotomies were so common our information upon this point was theoretical. It was considered that inflammation of the parametritic cellular tissue was the effective agent, but the revolution within the past five years in our knowledge of the pathological conditions of inflammatory changes in the pelvis have demonstrated the incorrectness of this view, except in rare cases; and it is commonly accepted that the adhesions become organized from the peritoneal exudations caused by tubal disease or direct peritoneal inflammation from disease of the uterine mucous membrane. Rarely they may arise from simple tubercular peritoneal inflammation. If it were possible to make sure that all adherent uteri had diseased tubes accompanying them, the problem of interference would be much simplified; but the salpingitis may long ago have disappeared or even never existed, so that every case must be carefully considered in this regard. In simple retroversion these adhesions usually bind the investing peritoneal membranes of the posterior uterine and anterior rectal walls in close contact. Long string-like adhesions in this site are rare. Laterally, one or both broad ligaments may be deflected backwards and united, but less closely, to the lateral wall of the uterus. Occasionally slender filamentary adhesions run from the posterior pelvic wall to various points upon the fundus. In retroflexion the adhesions between the rectum and uterus exist usually more completely around the tip of the fundus, as the uterus is doubled over upon itself, and stronger adhesions exist between the sacrum and the anterior part of the fundus. Adhesions may exist from the slightest degree to those which render the uterus permanently immovable.

Before passing to the consideration of the various methods best adapted for replacing the backward displaced uterus and securing it permanently forward, the measures to be employed for the separation of adhesions only may be well considered.

The simplest plan that would present itself surgically is rupture or tearing off the adhesions without any cutting operation. Unquestionably this has been performed many times in an accidental manner as it were, by every gynecologist, but Schultze has so formulated a method of procedure and has been so far the boldest in his attempts that the operation of forcibly replacing the adherent uterus bears his name. The method, as I have employed it, does not essentially vary from that described by him, although I had practised it empirically before reading his article upon the subject. The bladder and rectum must be thoroughly emptied and complete surgical anæsthesia induced. I employed the right hand for manipulation through the abdominal walls, and, conjoined with vaginal or rectal examination by the left hand, mapped out very carefully the size, extent, and resistance of the adhesions and their relation to the other pelvic tissue viscera. The importance of this preliminary examination and its thorough performance cannot be too strongly urged, as on the result depends the prognosis of further procedures. If the case is deemed operable, two fingers in the rectum are used to dislodge the uterus from its position beneath the promontory of the sacrum, prying it first to one side, then to the other. Usually it is more easily elevated by passing to the left of the promontory. The hand upon the abdomen meanwhile makes firm, deep pressure, endeavoring to press the finger tips behind and beneath the fundus and so bring it forward. A stroking motion of the hand towards the pubes aids materially. As the fundus is raised the adhesions are brought into clear prominence, and if small and slender, are snapped off. If large, more organized, flat, and connected with the rectum, or the peritoneum of the pelvic wall, an attempt is to be made to separate them at their uterine end by peeling them away. As the uterus is raised, and the fundus anteverted by the hand on the abdominal walls, adhesions are discovered which may not have been previously suspected, and which must be dealt with in a similar manner. When once the fundus is elevated beyond the promontory of the sacrum, the grasp of the hand through the abdominal walls operates as a powerful agent by which it is still further anteverted, and the other hand may perhaps best operate in the vagina instead of the rectum, pressing the cervix backward. During the process of replacement it is often necessary to employ both hands upon an adhesion, either for examination or the requisite manipulation for its detachment. As the uterus, if thus left unsupported, would fall backwards, I introduce a flexible sound of which the uterine extremity can be bent to any angle by curving the outside portion, an assistant by this instrument can hold the uterus exactly in the proper position without injury to its lining membrane. I never introduce an ordinary sound, which it is impossible to employ without some leverage action. It is not always possible to fully complete the operation by entire separation of the uterus, but satisfactory therapeutic results, even under these conditions, may be obtained, as one of my cases will illustrate.

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[1] Read at the Annual Meeting of the Massachusetts Medical Society, June 11, 1889.

When once the uterus is brought forward, the problem presented is as to the best method of retaining it in its new position. For this purpose artificial measures of some kind must be employed immediately or it will fall backward again and adhesions at once re-form which may not be so amenable to treatment. I have not found it necessary to employ other measures than a suitably adjusted pessary and packing, except in two cases. I keep the patient very quiet for a week, watching carefully for any signs of peritonitis. Thus far, in more than twenty cases in which I have operated, there has been but one which was followed by any inflammatory reaction; and in this instance I was unable to keep the patient quiet more than one day. A long carriage and railroad ride followed within twenty-four hours after the operation, and the result was a sharp peritonitis and decided re-forming of adhesions. So far as I have been able to trace the patients, two only have required further surgical treatment for a recurrent displacement. One of these I twice operated upon by this method and subsequently by laparotomy. There being no decided variation in the method employed it would be wasteful of time to enumerate all these cases in detail.

Case I. A typical, uncomplicated successful case. M. B., twenty years of age, a working girl of fair physique but anæmic. Very acute retroflexion with strong adhesions extending from the fundus to the posterior part of the pelvis. Laterally the pelvis was free. Dysmenorrhœa, debility, and gastric disturbances were the symptoms demanding relief. Operation June, 1887. A retroflexion pessary was inserted. The patient was last seen in May, 1889, perfectly well. The uterus still held in position by the pessary. An attempt to leave it unsupported a year subsequent to the operation was followed by a tendency towards retroversion. There are no evidences now to be found of the previous existence of adhesions.

Case II. Relief of the symptoms, incomplete restoration of the uterus to its normal position. E. F., twenty-four. Enlarged, retroflexed, adherent uterus. Decided endometritis. Present complaints, — sterility accompanying marriage of four years, nervous and circulatory disturbances. The patient was weak and sickly with poor family history. Several attacks of peritonitis within the previous seven years. I employed all ordinary measures to relieve the uterus from its adhesions unsuccessfully. May 10, 1888, the uterus was forcibly separated and brought forward until the fundus was freely movable above the sacral promontory. All the adhesions posteriorly and on the left side were freed; on the right a strong inflexible band the size of the thumb, evidently connected with the broad ligament and possibly involving the tube, prevented complete reposition. The pessary, inserted immediately after the operation, retained all the advantages gained. Without further local treatment the endometritis subsided, the general symptoms disappeared, and in November, about four months subsequent to the operation, the patient became pregnant. As the sterility was the symptom for which the patient most decidedly wished relief, I considered the operation therapeutically successful. It is interesting to find that at the fourth month of pregnancy this adhesion was stretching and allowing the fundus to rise, but deflecting it strongly to the right. However, pregnancy has progressed favorably.

LIMITATIONS OF THIS OPERATION.

It is unwise to attempt a forcible reposition if there is present any acute inflammatory process. If the adhesions connect the fundus in broad bands with the investing membranes of the rectum; if the adhesions are found to be lateral, involving, as they probably do in that case, the tubes or ovaries or both; if they have resulted from an attack of general peritonitis; if it is fairly probable that tubal disease is present; with the operation partially completed no further attempts at complete reposition should be made if the hand manipulating through the rectum finds the rectal wall is raised as the uterus is elevated. With any of these complications there would follow laceration, or such undue tension upon tubes or intestines as would lead to their rupture or sloughing.

THE TREATMENT OF THE NON-ADHERENT BACKWARD DISPLACEMENT.

The problem here to be solved is to permanently secure the uterus as nearly as possible in its normal anterior position in the safest, surest manner. There have been many devices suggested which have had the test of one or two trials. Unfortunately, most recorded cases have been reported too soon to afford a sure test as to the liability of relapse, so that for our guidance there remain but few recognized methods. These are: (1) the operation known as shortening of the round ligaments at the inguinal ring, or the Alexander-Adams operation; (2) direct fixation of the uterus forward, by stitching it to the anterior abdominal wall or to some anterior portion of the pelvic lining; (3) shortening of the round ligaments within the abdominal cavity without destruction of their continuity. These latter two operations depend for their successful results largely upon the establishment of adhesive inflammation between peritoneal surfaces, the former upon the sustaining power of the round ligaments of the uterus.

The Alexander-Adams Operation. — Since I first performed the operation in August, 1886, I have operated for the cure of backward displacements *alone* eleven times; with three exceptions, I have made examinations of these patients within the past month. Two of those have been attended by their family physician, and the third has passed from my observation, but not until after the results had stood the test of a year, and a year of hard work. Anatomically, every operation has been a success; therapeutically, two have not realized all that was hoped, but as these cases had various complications coëxistent with the displacement, they cannot weigh against a surgical success. I tabulate the cases only in the intervals of time that have elapsed since the performance:

No. of cases in which more than two years have elapsed since the operation	2
No. of cases in which more than eighteen months have elapsed .	2
No. of cases in which more than fifteen months have elapsed .	3
No. of cases in which more than eight months have elapsed . .	2
No. of cases in which more than six months have elapsed . .	1
No. of cases in which more than two months have elapsed . .	1

This table includes no case in which the operation was performed for other causes than those strictly relative to the subject of this paper. The operation of shortening the round ligaments I have performed in practically the same manner in all my cases, a brief description of which may be of some interest; so I will quote from my paper upon this subject (Shortening of the Round Ligaments), published in February, 1888.

To avoid repetition I will give in detail the procedures I have followed in all my cases. I have aimed to make the operation as thoroughly aseptic as a laparotomy. I make an incision directly upon the spine of the pubes and locate the external opening of the inguinal canal, clearing away the edges of the ring, raise the little mass of fat lying just inside, and, separating it by director and knife from the sides of the canal, draw it out until the round fleshy-looking fibre of the round ligament appears, exercising great care not to separate the proximal end of the ligament from its fastenings. The fullest development of the ligament is not reached until an inch or more is drawn out. I free two or three inches of the ligament in this manner, handling it with great care, and similarly treat the ligament of the other side. An assistant then lifts the uterus, vaginally, to its proper level and position, and any further slack of the ligament is drawn out and secured to the pillars of the ring by fine silk sutures.

The surplus mass of the ligaments is then folded upon itself and packed away, forming a plug in the ring, and the external wound closed without drainage. Dry occlusive dressing is applied, which is left undisturbed a week. A support is inserted that will retain the uterus in its proper place and take all strain from the ligaments. The patient is kept quietly in bed for two weeks.

The remote results of this operation having been so favorable, are there any immediate dangers? I have not had one disagreeable symptom until my last three cases, in which there was some suppuration from the use of non-septic catgut for the external stitches. In only one case have I failed to find and secure both ligaments. This case is of interest, too, as one in which forcible breaking up of adhesions, under ether, followed by the use of a pessary, have been successful in converting it from an adherent to a non-adherent uterus, although the uterus flexed backward over the support. A year after the first operation, the adhesions had not re-formed, and at this latter operation I found the uterus perfectly movable. This was one of the cases tabulated as successful after more than eight months. The patient, a girl of seventeen, having the physique of a child of twelve. The ligament first secured was the right, which was, by direct comparison at its largest part, the size of the lead of an ordinary pocket pencil. The ligament on the left side could not be found, although I searched for it over an hour.

Shortening of the Round Ligaments within the Abdominal Cavity. — Dr. Wiley, of New York, in the *American Journal of Obstetrics* has described and figured this operation. Never having performed it myself I quote from his article the main points of his description: The round ligament is caught with forceps, about midway between the pubic bone and the cornu of the uterus. Pulling it up in the abdominal wound the inner side is scraped so that the peritoneal surface is raw. Three silk sutures were passed around the ligament so as to include most of the ligament and bring its folds into close apposition. The ligatures are tied tightly, but not enough so to cut or injure the ligaments. The ligatures are not passed deep enough to injure the bladder or ureter. The uterus was supported by a pessary. The first case, performed three years ago, is successful. The uterus is in position without any pessary. Dr. Wiley states that he had an opportunity to repeat the operation in several cases with good results.

This method of operating necessitated a preceding laparotomy, and in that regard is less advantageous than the regular "Alexander-Adams Operation." With the abdomen opened for some other cause, I think it is certainly warrantable with the successful result which Dr. Wiley has obtained, to make a fair trial of it.

Fixation of the Uterus to the Anterior Abdominal Wall. — I have considered this under the general heading of "Treatment of the Non-adherent Uterus," for the sake of a more practical comparison of the various methods employed to secure anterior fixation of the uterus, contrasting it thus with the other methods of shortening the round ligaments, or the methods to be later described as "Schücking's Method of an Anterior Fixation of the Uterus." The operation is one which, until the present era of indiscriminate laparotomy, has been performed in but few isolated cases and in an experimental way, and usually associated with removal of tubes or ovaries. During the past twelve months it has sprung rapidly into favor. To me it seems unjustifiable unless its performance be guarded with stricter limitations than any of the surgical procedures previously considered. Ventral fixation may be simple or complicated by the separation of the adhesions of a backward displaced uterus, or the association of this latter condition with diseased tubes and ovaries which require removal. The performance of a laparotomy, and the stitching forward of an unattached uterus, in view of the other methods at our command, I consider unwarrantable. The conditions in which it may properly be considered are thus limited to two, namely: Laparotomy performed for the specific purpose of separating adhesions and bringing forward the uterus; or, laparotomy performed for the purpose of removing tubes or ovaries, and incidentally bringing forward the uterus and fixing it. My personal experience is limited to three operations; two of my own and one at which I assisted, and which, the latter history being known to me, I feel may well be included in this report.

Case I. E. E., single, thirty-four years old; has spent years in receiving uterine treatment and suffered from all kinds of pessaries. Examination shows a retroflexed uterus, attached by broad organized bands posteriorly to the rectum, less so laterally. Both tubes and ovaries prolapsed, enlarged, and so tender no pessary could be borne. I had made one attempt to forcibly replace the uterus without success. I operated, anticipating removal of the uterine appendages would be necessary, on November 16, 1888. After opening the abdomen and freeing the adhesions binding the tubes and ovaries, a careful examination showed them practically free from disease, therefore I did not remove them. I operated by cutting and tearing all the adhesions binding the uterus, which was so firmly wedged into the pelvis that the hand of an assistant in the vagina was necessary to raise it from its bed. I secured it by two catgut stitches, one upon each side, snugly to the abdominal wall, at the lower angle of my abdominal wound. scraping both uterine and parietal peritoneal surfaces until the blood freely oozed, with the idea of obtaining adhesions which would assist in holding the uterus in its new position. The stitches were passed through the uterine tissues to a depth of quarter of an inch, carefully avoiding the Fallopian tubes though including the abdominal parietes to the depth of one-half inch. The wound was closed without drainage. There was very little bleeding from the adhesions and no ligatures were necessary. The patient made a perfectly normal recovery. On June 4th, seven months after the operation, the uterus was found forward in absolutely unchanged position, and the remains of the adhesions, which for three months could be felt quite prominently in the Douglas fold, were no longer to be detected. The tubes and ovaries lie in a relatively normal position, and are but slightly enlarged or tender. While many of the symptoms have been relieved by this operation, she is still far from well, but a good deal of this is due to her poor general condition. [*Note.* — August 1st, the uterus is still in perfect position.]

Case II. E. S., thirty-three, single; has also received local treatment for many years; has had fistulæ in ano, the sinuses of which have extended high up both in front and behind the rectum, and in former years have been freely incised, so that the anal and perineal regions form a mass of dense cicatricial tissues. Within the preceding eighteen months I made two attempts to replace the retroflexed uterus, under ether. While there was no evidence of tubal disease, neither of these operations were successful, because of strong, flat, laternal bands, which immediately drew them up backward. Following these two operations, partial success was obtained, so that a pessary was worn with comfort for some months and gave great relief. The uterus flexed over the support again however, and on December 4. 1888, was attached as firmly as ever. Operating at this latter date by laparotomy. I found it impossible to start the uterus from its bed under the promontory without the combined use of the uterine elevator and the hand inside the abdomen. The posterior adhesions were pealed off very rapidly, and the lateral adhesions were found to be the thickened, shortened, broad ligaments, which had become, from long-standing chronic inflammation, converted into cicatricial bands. The tubes lying along the upper part appeared perfectly healthy, also the ovaries, so that I did not feel justified, in deference to the expressed wish of the patient, in removing them as otherwise I should have done. It was impossible to bring the uterus close to the abdominal wall anteriorly, because of the tension which these broad ligaments exerted. Thinking that a stitch inserted from the fundus would be almost certainly torn out from the force with which the uterus was held downward, I put it just outside the fundus around the broad ligament and carried it up into the abdominal wall. A decided hæmorrhage followed this, though no bleeding vessel could be found, but it was necessary to tie a portion of the broad ligament *en masse.* On the left, the rectum and numerous coils of small intestines were found matted together and adherent to the broad ligament. It was impossible to separate these. The uterus was secured only upon one side. The wound closed without drainage, and the patient made an uninterrupted convalescence for ten days, when an abscess, which had given no signs of its presence by temperature, discharged from the abdominal wall forming a fæcal fistula near the opening which enlarged to the size of a silver fifty-cent piece. All the fæces and enemata discharged through this fistula. Subsequently, the uterine abdominal stitch, which was of silk in this case, came away. The fistula gradually closed and the patient was discharged three months after the operation, the uterus retroverted to the second degree, not tender, not adherent as before, and the patient able to go up and down stairs, walk fairly long distances and much improved in her general health. Previously to the operation she had been unable to walk at all.

Case III. Not my own case. Failure anatomically and therapeutically. Mrs. X. Enlarged retroflexed uterus. Strong flat adhesions extending posteriorly only. The operation was performed in the same manner as the preceding. No complications. The stitches were silk, passed around the round ligament and well into the abdominal wall. Convalescence perfect. At the end of two months the uterus was well forward and still united the peritoneum of the abdominal wall. One month later it was retroflexed and adherent, and surgically and therapeutically the patient as badly off as before.

The report of these three cases constitute, so far as I know, the record of all the cases in this city for which laparotomy has been performed for the specific purpose of separating the adhesions of a retroflexed adherent uterus, bringing it forward and stitching it to the abdominal wall, in which there has been an interval of sufficient time to record an opinion as to the success or not. What are the results? The first case, seven months after operation, the uterus is retained in its new position. The second case, uterus remains partially forward; patient's general condition improved, but a protracted and anxious convalescence. The third case, entire failure.

COMMENTS UPON THE OPERATION.

The technique of the operation under consideration may be quite simple, or may offer decided complications. The new position of the uterus anatomically is faulty, only in a less degree than the old. The suspension of the uterus depends either upon formation of adhesions with the peritoneum of the abdominal wall, or the suspensory strength of the stitches which are inserted; and should the uterus fall away from its new point of attachment, there is an excellent opportunity afforded for the incarceration of a coil of small intestines if these stitches hold, and if they cut out or are removed, then there is nothing to hold the uterus except such adhesions as may have formed.

Schücking's method of anterior fixation, the last of which I shall speak, is practically performed by its originator only. Naturally, he claims good results, but for both theoretical and practical reasons it seems to me so decidedly inferior to other methods that I have never adopted it. It is applicable only to such uteri as may be free from adhesions. Schücking, stating that the ordinary method of stitching the uterus to the abdominal wall does not produce firm enough adhesions to secure it permanently, proposes to accomplish the result by stitching the fundus directly to that portion of the peritoneum which is reflected backward from the pubic arch forming the anterior pelvic floor; that is, the anterior peritoneal roof of the vagina. A special needle is employed, by which the stitch is carried up through the cervical and uterine canal, passing through the fundus and then forward and downward until it emerges into the vagina, where it is tied and remains until there is a decided adhesive peritonitis set up. The bladder is to be pushed one side by a sound manipulated by an assistant. Schücking states that in twelve cases the stitch passed through the bladder instead of beside it three times, without leaving any bad results.

I have purposely alluded in the briefest way to separating the adhesions of backward displacements when laparotomies are performed for the removal of diseased tubes and ovaries, because it would carry this discussion outside the strict limits of my subject. My own view upon the question is, that unless there are such decided symptoms of trouble from the displacement as leave no room for doubt, it is better to let the uterus alone. If it is decided to attempt its replacement, secure it forward by one of the methods of shortening the round ligaments rather than by ventral fixation.

SUMMARY.

From the results of my own operating I have drawn for my guidance the following rules: —

Be sure that the displacement is the cause of the symptoms. Never resort to operative measures without first exhausting all forms of non-surgical treatment in so far as they may be applicable to the case under consideration. An adhesive backward displacement of the uterus demands for its cure, first, separation of its adhesions; second, anterior fixation. Separation may be accomplished, first, by forcible divulsion without opening the abdomen; second, by laparotomy and subsequent divulsion or cutting. The advantages of the first method are that in suitable cases the patient is exposed to few dangers beyond a simple traumatic peritoneal inflammation. The advantages of the second are that it supplements the first; assuming greater risks it strives for greater successes; the adhesions being dealt with more openly, any accident that may arise is more easily remedied; it can be employed in cases to which the first is inapplicable. It superadds, however, the dangers of a laparotomy.

A backward displacement which is free originally or which has been *freed from its adhesions* may be secured forward. First, by shortening of the round ligaments, either by the Alexander-Adams or Wiley method; Second, by fixation of the uterus to the peritoneum of the anterior abdominal wall, or to that of the anterior pelvic floor (Schücking's method).

Of the four operations, the only one not involving interference with the peritoneum is the Alexander-Adams. I believe that it should be selected, from my own experience of its successful results. I make an exception, that if for any *other* reason the abdomen has been opened, Wiley's operation may perhaps prove its equal.

These round ligament operations leave the uterus in practically a normal position, without undue tension on tubes, intestines, or blood-vessels. There is no danger of fæcal fistulæ or incarceration of the intestines; no interference with subsequent pregnancies. Permanent successful results do not depend upon adhesions or suspensory stitches, and the uterus is left movable, not fixed.

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PREGNANCY AND OPERATIVE SURGERY: THEIR MUTUAL RELATIONS.[1]

BY S. C. GORDON, M.D., PORTLAND, ME.
Lecturer on Diseases of Women, P. S. M. I.; Fellow American Gynecological Society, etc.

An impression exists generally among the laity, doubtless derived originally from the profession, that all operative surgery upon the pregnant woman should be avoided. This extends even to the extraction of teeth, however much the patient may suffer from them.

Undoubtedly, this caution on the part of the profession, arose previous to the days of anæsthetics, from a fear that the shock to the nerve centres would induce abortion. That some foundation for this may have existed in those days is probably true. Even as late as the time of Velpeau we find him saying that "all operations upon the pregnant woman should, if possible, be postponed."

That no such cause for fear should now exist is apparent from the many operations that are being reported in the current medical literature; and yet, while there is much less to fear from the minor operations than before the days of anæsthetics, there always remains the danger from septicæmia, which becomes a powerful cause of abortion or premature labor. I should hesitate much more on this account than any other when called upon to decide in a given case of pregnancy, requiring operative measures. It is more especially with reference to operations upon the pregnant uterus and its appendages that this paper is written.

That ovariotomy has been made with impunity upon the pregnant woman has been demonstrated many times. Removal of the ovaries and tubes, both by accident and design, has shown that operations involving parts very near the uterus, while in the pregnant condition, do not endanger fœtal life. Trachelorraphy, even, has been made upon the pregnant uterus, and the patient has still gone on to the completion of her term of gestation. Of course many of these operations have been done without the fact of pregnancy being known at the time, but like many other valuable truths in medicine, they have been good object-lessons to the practitioner and the profession.

The following case may serve to guide some future worker in the path of safety for his patient: —

Mrs. ——, aged thirty-five, always regular, missed her periods in October and November last, and manifested some other signs of pregnancy. The pelvic pain, particularly in the right side, became frequent and severe, so that her physician, Dr. J. F. Thompson, brought her to me for consultation.

Examination disclosed a small tumor in the right side of the pelvis, somewhat elastic to the touch, while the cervix and os had all the appearance and feel of a pregnant uterus. Directly in the middle line, rising a little above the pubes, was a growth very much resembling in shape and size the fundus uteri at the end of the second month of gestation. The peculiarity of it, however, was that it was much harder than one would expect from a state of pregnancy.

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[1] Read before the Maine Medical Association, June 11, 1889.

From a bimanual examination it was extremely difficult to determine that it was not a part of and continuous with the soft, enlarged cervix. Assuming it to be the fundus, the only theory probable was that the tumor in the right side must be an extra-uterine pregnancy; and the deep-seated pains, coming in spasms, seemed to justify that theory. The one important element lacking, was the absence of any bloody discharge, or shreds of membrane usually found in ectopic gestation.

I advised waiting for two weeks, during which time the suffering increased, and the patient desired something done to relieve her. The more I examined the stronger was my belief that the central growth was a subperitoneal fibroid growing from the anterior wall of the uterus, the fundus of which was flexed to the right, and held down by the pressure of the tumor between it and the pubes.

Laparotomy was advised and consented to, with a view to remove the tumor, if such it proved to be, and was practicable, or in the event of there being tubal pregnancy, to remove it. Section showed a fibroid, ovoid in character, with sessile attachment to the middle of the front of the uterus. Dividing the peritoneum high up around the tumor, I enucleated the mass, leaving the uterine wall very thin from absorption of its muscular coat. It was also very vascular, but stitching the peritoneum and the base of the wound freely with fine catgut, the hæmorrhage was entirely under control. As soon as the pressure from the tumor was removed, the fundus uteri came into place, and assumed its normal position in the pelvis.

Recovery was rapid and without complications, and the pregnancy continued free from further pain or discomfort. At full term, after a long and rather tedious labor, she was delivered yesterday (September 10th) of a healthy male child. The uterine contractions were very severe and frequent during the last hour or two. Near the close she had two or three convulsions. I had more or less fears for the integrity of the uterine wall, but the result shows that the cicatrix was firm.

My experience in this case would lead me to operate in all such cases, where the element of suffering was as prominent, which, if not relieved, may have resulted fatally or in abortion.

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RECENT PROGRESS IN THE PATHOLOGY OF THE NERVOUS SYSTEM.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D.

TRAUMATIC NEUROSES.

Sperling and Kronthal[23] report a case of the so-called traumatic neurosis with an autopsy. The patient, a brakeman, forty-two, with no special heredity, was thrown from his seat by a collision, striking his chest and abdomen against the brake-wheel, fainting in consequence. A few hours after the accident a slight abrasion was noted on the forehead. The collision was probably a slight one. After the accident the patient manifested psychical depression and melancholia. He was incapacitated from labor, apathetic toward what formerly interested him, and easily irritated when matters went wrong at home. When he went near a train he turned pale, seemed terrified, grew confused and complained of præcordial distress. The remembrance of the accident also haunted his dreams. He had frontal headache, numbness and tingling in the hands and feet, tinnitus, earache, and spots before the eyes. There was much physical weakness. The intelligence was diminished, the face expressionless; the muscular power in the arms was diminished, the gait broad and unsteady, being worse when the eyes were shut. There was no muscular rigidity or sensory disturbance. The knee-jerk was obtained only on re-enforcement. Micturition was difficult and he was almost impotent. The digestion was poor, (he had previously been constipated) and he had much palpitation. After the accident the arteries gradually became rigid. The heart was enlarged and both lungs were emphysematous. Three years after the accident, in September, 1887, the question of damages was settled. For three months after that there was no improvement. At that time hypnotism was tried with remarkable success. Most ot the symptoms were relieved, he had fifteen hypnotizations, and extolled the treatment most highly. Massage relieved his constipation, and for some time he was almost well. Later on, however, the respiratory symptoms recurred, he had cardiac asthma, swelling of the hands and feet, and died in January, 1889, of cardiac failure. The autopsy showed œdema and opacity of the pia, arterial sclerosis, dilatation and fatty degeneration of the heart with thickening of the valves, slight pulmonary œdema, slight interstitial nephritis, fatty infiltration of the liver, and atheroma of the aorta. A careful microscopical examination showed marked sclerosis with foci of hyaline and fatty degeneration of the whole arterial system, the cerebral and spinal vessels being especially involved; a peculiar degeneration of the stem of the sympathetic; spots of a mild degree of degeneration in the spinal cord in all portions of the white matter, degeneration of the ganglion cells in a short abnormally formed part of the lower dorsal cord, and hæmorrhage into the middle dorsal cord. This degeneration in the cord is regarded as a result of the vascular disease, which, in the absence of any syphilitic or alcoholic history, is unusual at so early an age. The whole trouble had evidently an organic basis — the disease of the vascular system. The question of importance is whether a sudden charge in the circulation, caused by the accident, can give rise to permanent changes in the blood-vessels.

[In a recent editorial upon this subject,[24] the latest work of Oppenheim and Strümpell upon this subject was reviewed. A number of Oppenheim's patients exhibited signs of circulatory disturbance, rapid pulse, palpitation, and symptoms of cardiac failure. In a personal communication upon this subject,[25] the reporter called attention to the experiments of Mendel and Fürstner on dogs, where rapid revolutions on a circular table gave rise to hæmorrhages and vascular dilatation. The present case is of the utmost importance as affording further proof in favor of the theory that a trauma may give rise primarily to vascular disturbances, and secondarily to structural changes dependent upon them, and as showing that a symptom-complex apparently of a functional nature may really be due to organic change in the central nervous system.]

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[1] Concluded from page 362 of the Journal.

[23] Neurologisches Centralblatt, June, 1889. Nos. 11, 12.

[24] See this Journal, May 30, 1889.

[25] See this Journal, November 1, 8, 1888.

Meynert,[26] at a recent meeting of physicians at Vienna, has questioned Charcot's theory that the "hysterical" symptoms of traumatic neuroses are due to auto-suggestion in the hypnotic state produced by trauma. Meynert shows that Charcot's hypothesis that a functional disturbance of the "sensory cross way" in hysterical hemianæsthesia cannot explain the loss of smell, from anatomical reasons, and does not fully explain the loss of hearing because we do not know how the auditory tract runs. Charcot, moreover, gives no explanation of the mechanism of the disturbance. Charcot's theory, however, is supported by the distribution of the vessels, and Meynert himself had called attention to the fact that this region was in the territory of certain large arteries, the profunda, the media, and the artery of the corpus callosum. Kolisko has now shown that various small terminal arteries from the circle of Willis supply contiguous parts. The arteria pedunculi cerebri, or arteria chorioidea, rises from the artery of the fissure of Sylvius, and sends branches to the optic tract and terminal branches to the crus and the basal part of the internal capsule. The vascular supply of the anterior and posterior portions of the internal capsule is not yet absolutely determined, but it is known that the fibres for the face go through the anterior portion of the posterior limb and fibres for the leg through the posterior portion, and it is also known that in hysterical paralysis, where sensory disturbance is commonest, the face and tongue are spared. The healthy man is not to be compared to a hysterical patient, who is familiar with ideas of paralysis. In traumatic neuroses certain symptoms due to cortical disturbance do not occur, notably aphasia and hemianopsia. Considering the relations of this arteria chorioidea with the internal capsule it is more probable that the symptoms are due to some disturbance in its distribution than to a cortical lesion. Convulsions, if general, are more probably due to a disturbance in the lower centres than in the cortex. Although functional paralyses are more curable than cortical lesions, Meynert regards the prognosis as bad and advises against the use of hypnotism.

CEREBRAL HÆMORRHAGE.

Spencer and Horsley[27] have recently made a valuable series of experiments in relation to the cerebral blood-supply and the best methods of checking hæmorrhage. Up to the present time, the only therapeutic measures against the hæmorrhage itself have been the elevation of the head and venesection, and both of these simply diminish the total amount of blood in the brain. The desideratum is to diminish the blood-supply in the region of the ruptured artery, and yet to keep the rest of the brain full of blood to exert pressure on the diseased region and make the clot small. The middle cerebral artery is a direct continuation of the internal carotid; it supplies the motor region of the cortex and gives off the lenticulo-striate artery to the basal ganglia; this latter artery is so prone to be the affected artery in cerebral hæmorrhage that Charcot terms it the artery of cerebral hæmorrhage. On investigation Spencer and Horsley find that the middle cerebral artery does not take part in forming the circle of Willis, and that the anastomoses with it are small and indirect. They trephined a monkey over the artery, put pressure on the common carotid, and found that the pulsation in the artery ceased and the cortex became paler. The anterior and posterior cerebral arteries were unaffected. When the blood-supply to the cortex was cut off its electrical irritability was diminished and soon disappeared altogether, returning on the relief of pressure. After some time, however, if the pressure is kept up, the vessels slowly fill, from the finer anastomoses with the circle of Willis. They next cut across the brain, cutting the middle cerebral and lenticulo-striate arteries. Pressure was then put on the carotid and the lenticulo-striate artery stopped bleeding at once, the middle cerebral oozed for half to three-quarters of a minute and then stopped. At the end of two minutes a clot was formed in the mouth of the vessel firm enough to check hæmorrhage after the pressure was relieved. The results of these investigations have a direct bearing on the cases of ingravescent apoplexy, for pressure on the common carotid must check the flow of blood from the ruptured artery and thus reduce the amount of the hæmorrhage. Reasoning from these experiments therefore, they recommend the employment of pressure in such cases. The only affections likely to be confused with hæmorrhage are thrombosis and embolism, and here pressure would have no effect either good or bad; in hæmorrhage, however, it would certainly check the flow of blood from the ruptured artery, and thus prevent the flow of a large amount of blood, and the destruction of large portion of brain tissue that would necessarily follow.

CEREBRAL INFANTILE PARALYSIS.

Wallenburg[28] reports an interesting autopsy on a case of cerebral infantile paralysis, although in his case the lesion was not in the cortex. A man, forty-nine, had had left hemiplegia, for forty-three years. The arm was most affected, and was contracted and greatly atrophied. The right internal rectus was also paralyzed. The patient died of cardiac disease. The right crus was much smaller than the left and beneath the anterior corpora quadrigemina was found a cyst, chiefly in the tegmentum but extending downwards and involving the middle third of the crusta. Both lateral columns contained an area of degeneration most extensive in the upper cervical region, and most intense in the mid-dorsal region. In the lower portions of the cord it was limited to the pyramidal and cerebellar tracts. The left side showed the most degeneration. Goll's columns were degenerated down to the mid-dorsal region. In the upper dorsal cord the transverse fibres in Clarke's columns had disappeared and there was some atrophy of the ganglion cells, lower down the ganglion cells had disappeared, and the longitudinal fibres were atrophied. About the cyst were noted atrophy of the lateral oculo-motor bundle, of the opposite commissure, of the substantia nigra on the same side, and the middle third of the fibres of the crusta. The columns of Türck were unaltered. The pons medulla and cerebellum showed no gross lesions. The writer thinks that possibly the uncrossed pyramidal fibres went down in the lateral column instead of in the anterior. The other degenerations are less easy to explain, but the hypothesis is advanced that they may be due to lesion of the fillet. The cyst was supposed to be of embolic origin.

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[26] Centralbl. f. Nervenheilkunde, 15 June, 1889. No. 12.

[27] British Medical Journal, March 2, 1889.

[28] Archiv. f. Pysch., xix, 297. 1888.

Hoven[29] reviews the literature of the subject. The majority of writers hold that cerebral infantile paralysis is due most frequently to porencephalia, or atrophy of the cortex. He collects seven cases of paralysis due to lesions in the neighborhood of the basal ganglion and reports a case of his own. A man, twenty-eight, had in his early years some cerebral disease with convulsions, which was followed by paralysis of the right arm and leg. There was no return of the convulsions until the age of twenty-five when he had a blow on the head. He used alcohol to excess. There was pretty complete paralysis of the right arm, with contracture and atrophy, but the leg was in fair condition. At the autopsy an old cyst, probably hæmorrhagic, was found in the left centrum ovole, involving a portion of the internal capsule, and affecting slightly the optic thalamus, corpus striatum, and claustrum. The cortex was perfectly healthy. Various authors have maintained that the presence of convulsions was an indication that the cortex was involved in the disease. Hoven thinks that that hypothesis is disproven by the present case, which shows that we may have all the symptoms of cerebral infantile paralysis from a lesion of the deeper parts as well as of the cortex.

CONGENITAL SYPHILIS OF THE BRAIN AND CORD.

Siemerling[30] has made an interesting study of this condition, with the report of a case. The patient was a girl of twelve. The father was syphilitic, but the mother showed no trace of the affection. At the age of four she had a shock, with right hemiplegia (including the face) and aphasia, which passed away. Two years later the sight began to fail, and she had ataxia; the discs were found to be white. After this she went to school, and did fairly well, except that her sight steadily failed. At the age of twelve she began to vomit, had headache and vertigo, and then convulsions; and soon after she grew deaf. It was not easy to test the sensibility. There was post-neuritic optic atrophy. The head was very large; knee jerks normal. The right eyelid was lower, and the right corner of the mouth drooped. The facial paralysis and ptosis increased; the knee-jerks were gradually lost; the headache and vertigo persisted; and the patient became somnolent, and finally comatose. The brain was much compressed, and adherent to the base of the skull. There was a gummatous encephalo-meningitis and hydrocephalus. An irregular gummatous mass was found, involving much of the base of the brain, especially the base of the cerebellum and the brain skin, but extending as far forward as the olfactory nerves. The vessels and nerves were all more or less degenerated, and the former showed true syphilitic endarteritis. The pia of the cord was very much thickened, and in various places there were small tumors. This thickening extended the whole length of the cord, and the growth extended into the cord itself, especially in the posterior columns, and, to some extent, the lateral columns; the gray matter was not much involved. The veins showed phlebitis obliterans. The nerves were often destroyed by pressure or by direct infiltration.

PARALYSIS AGITANS.

Borgherini[31] has recently made an admirably study of this disease, based on four cases under his own observation, one of which came to autopsy. He lays much stress upon the neuropathic taint, clearly present in three of his patients, as a predisposing cause. He also cites a family where seven out of nine children had the disease, and it was present in three of their descendants in the next generation. Trauma, rheumatism, and, above all, psychical disturbance, are important as exciting causes. The tremor usually begins in the right hand; but in one of his patients, who was left-handed, it began in the left. In all his cases the head was involved, and disturbances were noted in several of the motor cranial nerves. The tremor is distinctly modified by psychical disturbances; and this, he thinks, does not militate against the theory of a cortical origin of the disease. Respiration is often slower, and the pulse is sometimes more rapid. The temperature was not much affected, but in most cases the subjective feeling of heat described by Charcot was present. Sensibility and reflexes are usually normal. The muscles are often in a state of exaggerated tension, which, like the tremor, can be partly but not wholly controlled by the will. The muscular force is diminished, and the rapidity of movement, as shown by counting or tapping, was greatly impaired. The latent period of contraction to the electric current was increased, as Mendelssohn has noted, and there was a quantitative diminution; the resistance of the body was probably increased. The urine contained rather more urea and distinctly less phosphoric and sulphuric acid than normal. Borgherini regards the propulsion, pro-lateropulsion or retropulsion as of a mechanical character, and due to the inclination of the body. In the autopsy reported there were found an increase of nuclei in the walls of the vessels of the brain and cord, especially in the pons, and changes in their calibre; a slight, inflammatory thickening of the pia; a thickening of the ependyma of the fourth ventricle; with an increase of connective tissue in the gray matter of the pons, and some atrophy of the gray matter. In the cord itself signs of perimyelitis were more conspicuous, and in the pyramidal tract there was considerable increase of connective tissue. The central canal contained many nuclear elements, and the vessels were much altered. A similar increase of connective tissue was noted in the nerves, muscles and sympathetic ganglia. In the latter was seen a pigmentation of ganglion cells. Similar muscular changes were noted in a bit of muscle excised from another patient. The important changes were those of the vessels, and the hyperplasia of the interstitial tissue, affecting the nerve elements: the latter affected the motor regions chiefly. Other autopsies are cited; and the author agrees with Vulpian, Demarge and Tessier, that paralysis agitans has an anatomical basis. It cannot be regarded as systemic, but rather diffuse, affecting the gray axis and the white matter of the pons medulla and cord.

Borgherini, in his cases, noted an increase of urea, and a decrease of phosphates and sulphates. Mosse and Banal[32] have made special researches on two patients for several weeks, controlling their results by similar investigations on persons of the same age under similar surroundings. They find that in paralysis agitans the excretion of urea and of total phosphoric acid is less than the physiological average in the young adult, but greater than the average in healthy persons of the same age, The excretion of incompletely oxidized phosphoric acid is less than in either. The sulphuric acid is greater than in the young adult, but slightly less than in the old. Per kilogramme weight, urea and total phosphoric acid are greater than normal, incompletely oxidized phosphoric acid less; the gain in urea being the greater, which indicates that the muscular trouble favors combustion.

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[29] Archiv. f. Pysch., xix, 563, 1888.

[30] Archiv. f. Psych., xx, 102, 1888.

[31] Rivista sper. di freniatria, xv, 1, 1889.

[32] Revue de médecine, July, 1889.

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Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.[1]

Dr. Zeisler addressed the Association on the subject

CLINICAL NOTES ON SYCOSIS CAPILLITII.

He had found very little said about the disease in the different text-books. In a case reported by Hebra in the *Vierteljahrschrift* in 1876, it was said that the skin was somewhat elevated and sclerotic, so that a fold of it could not be pinched up. There were small nodules and pustles, perforated by hairs, generally in bunches of ten or twenty, and the depilation of these hairs is almost impossible. Two cases that he had seen were of especial interest in relation to the last paper read on dermatitis papillaris.

One of these cases had had abscesses on the scalp for six months. The scars left after the healing of these abscesses, which had been opened, were not linear, but raised and thickened on each side. Tufts of hair were very prominent, and at these points the patient complained of an itching sensation. Depilation, with shaving of the head and antiseptic lotions were used, and the scalp was entirely free in about three months, although there have been slight recurrences. A second case presented similar features. In each one of these patients he had noticed that the hair upon the scalp was very thick. This recalled Wirtheim's explanation of the cause of sycosis; namely, that it was a disproportion between the diameter of the hair and the follicle, resulting in pressure. Although this might be a predisposing cause, yet the reader believed it was the entrance of the staphylococus aureus and albus which caused the affection. It is, therefore, a local disease, and constitutional remedies are not indicated.

Dr. Robinson explained the meagre literature that had been found by the reader by the fact that the name had been stricken from the list at the first meeting of the Association and was not put back until three or four years ago. He did not agree at all with Wirtheim's views. When we have pustules form they are, of course, due to organisms, but many lesions occur which are not pustules. In the pustules of acne you get the same organisms. In every case there is a predisposing cause. The best treatment is to render the soil uncomfortable for the organisms by the use of constitutional remedies.

Dr. Bulkley had seen cases in young men which he had put down as folliculitis of the scalp, where papules or pustules were formed. In these cases a permanent baldness of the spot affected remained. One case was cured finally; in a second case the treatment was neglected, and he seems to be growing worse. In both these cases he was sure there was a constitutional cause.

Dr. Fox referred to the case that he had published in the first edition of his photographic illustrations where the hair grew in large tufts upon the surface of a keloid in a colored man.

Dr. Hardaway thought it not uncommon to see negroes with tufts of hair growing from the same point in the skin.

Dr. Denslow reported a case where small nodules appeared deep in the scalp very much like those which are seen in deep-seated acne, and accompanied with burning and itching; they were opened, a small scar was formed and the hair was lost. As a young man this patient had had a very severe attack of acne, especially upon the shoulders. In this patient it was noticed that the mouth of the follicles upon the face were patent. It was discovered afterward that he had a stricture at the meatus, and the urethra was in a highly sensitive condition. Under the combined treatment there has been no recurrence.

Dr. Heitzmann thought the diseases which had been mentioned could all be classed together, and he preferred the name of folliculitis, as used by Dr. Bulkley. In some of the cases we have atrophy and sometimes we have hypertrophy.

Dr. Robinson thought the names were used according to the location, and the fact that the cause was the same had nothing to do about it. The case was comparable to that of broncho-pneumonia and bronchitis which are separate diseases, although the cause is undoubtedly the same. In sycosis or eczema or acne the cause is the same, but the seat is different, and the clinical history is different.

Dr. Graham had an experience in one case which led him to believe that the disease was not local simply. The case was one of sycosis. A typhoid fever came on and during its run the sycosis disappeared, only to return again after the fever had abated.

Dr. Zeisler replied that it was long since established by Hebra that during fevers many local diseases are arrested temporarily.

Dr. Sherwell reported an instance of

RELAPSE OF PIMPHIGUS FOLIACEUS AFTER ELEVEN YEARS QUIESCENCE.

The case had been reported in the Archives of Dermatology for 1877 and also in 1878 before the American Dermatological Association. The treatment in the first instance and in the relapse was mildly protective. The patient recovered and was entirely well until March of the present year. She was now twenty years of age and healthy. At the beginning of the attack there was general febrile disturbance, anorexia, chill, and irregularity of the bowels. The eruption commenced as an erythema, over the front of the chest and arms, followed by the appearance of vesicles with the peculiar sour-milk-like contents. The temperature 102.7°, pulse 115. The eruption spread rapidly over the entire body. She recovered entire within three weeks. Dr. Fox, who had seen the case at one stage remarked that it looked like a case of pityriasis rubra.

Dr. Sherwell also reported a

CASE OF IMPETIGO HERPETIFORMIS.

The patient was Mrs. K., thirty-two, under the care of Dr. Risch, of Brooklyn. She had had five living children and several miscarriages. In 1884 she had a slight eruption consisting of bullæ, which became puriform. In the summer of 1888, when three months pregnant, she suffered with gastric disturbances and about October 1st, she first noticed an eruption similar to the one she had had before. At that time it resembled scabies very much, but did not get well under treatment. Crusts looking like impetiginous eczema, formed, and the nervous system became a good deal affected, there being a constant tremor of the limbs. Dilute hydrocyanic acid was used as a dressing with benefit, but in November another relapse occurred. When seen on November 23d she was in a pitiable condition, moving the limbs with uncertainty and difficulty; pulse weak, temperature elevated. The eruption was of the small impetiginous variety, apparently spreading in a somewhat wavy line, and the diagnosis of impetigo herpetiformis was made upon that observation. Arsenic was administered. On December 23d she gave birth to a non-viable child. After this numerous relapses of the eruption occurred until the middle of June, at which time she was free and has remained so ever since.

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[1] Concluded from page 369 of the Journal.

The writer believed that all these cases were due to absorption of suppurating and effete matter. One case had occurred during an attack of diphtheria, and if it had been chronic would have been considered a case of this kind. It had been reported that Dr. Duhring had given up his idea that this disease belonged to the group of dermatitis herpetiformis, and if it were so the reader was sorry, for he believed that that view was the correct one.

Dr. Heitzmann said that Kaposi had criticised him for reporting a case of this disease because the woman in whom it had occurred was not pregnant, but it happened afterward that a man came to the clinic in whom Kaposi, himself, was obliged to make the same diagnosis.

Dr. Bulkley, referring to a remark made by the speaker, said that this disease was not at all like the cases which he had reported under the name of herpes gestationis, differing in the character of the lesions, in the absence of lines of gyræ and in the fact that it is never fatal. It seemed to him that this was a disease *sui generis*.

Dr. Robinson preferred the term of hydroa for this class of diseases.

Dr. Hardaway reported a case of pemphigus foliaceous in a gentleman sixty years of age, beginning on the chest, making slow progress for the first few months and then progressing rapidly until the whole cutaneous surface was invaded. The speaker had had at the same time under observation a case of pityriasis rubra and there was a period in the history of the two cases when they looked absolutely alike; a fact which, in his mind, gave a good deal of color to the idea that they were one and the same disease, representing different processes of the same trouble.

Drs. Klotz and Morrow also took part in the discussion.

Dr. Bronson, of New York, read an account of

A RARE FORM OF SKIN DISEASE.

The patient was a boy of fourteen, seen at Charity Hospital. He had a swelling of the forehead, eyes and mouth, with the formation of scales and crusts over the cheeks. There were papules, tubercles and pustules and encrusted ulcerations over the face, and also rounded or irregular cicatrices on various portions of the face, the scalp being free. The cervical glands were slightly enlarged. Scattered over the trunk and extremities were lesions similar to those upon the face, while between the patches the skin remained for the most part normal. Considerable pus could be obtained from the ulcers.

The primary lesion seemed to be a pustule or papule, the disease first affecting the hair follicles. This might undergo ulceration, leaving a slight papule, or a pustule might form. A year and a half ago a sore came upon the right ear, and about the same time an abscess came upon the neck, resulting from a suppurating lymph gland. He was working at that time in a paper manufactory. General health good; urine negative. After two months the ulcers were healed, and the swelling of the face was less. He was discharged from the hospital, but a little later was looked up, and found to be in St. Frances' Hospital in Jersey City. At this time the eyelids were enormously swollen, forming a fold above the brows.

Primarily the disease seems to have been an acne, and the only diagnosis that the reader could make was acne cachecticorum. It was at first thought that there might have been arsenic in the paper on which he was working, but on investigation that view had to be given up. But even if it had been so, we would suppose that the eruption would have disappeared after the removal from the exciting cause. There was no appearance or history of syphilis. The œdema of the face was hard to account for, but probably there was a local cause, perhaps the presence of confined pus in the deeper parts of the skin.

Dr. Sherwell thought that dermatitis necrogenica would be a good title, on account of the absorption of necrobiotic elements, which were having an action upon the nervous system.

Dr. Morrow had seen the case, and thought it resembled most nearly cases of arsenic poisoning that he had seen. While not entirely satisfied with Dr. Bronson's diagnosis, he could not suggest a better one.

Dr. Bronson was willing to accept the diagnosis of dermatitis herpetiformis if there was such a disease. One of the important features was the distribution of the eruption, which was similar to that of dermatitis herpetiformis, showing that the same pathological motive is present; and yet the clinical disease runs a very different course from that of Duhring. It seemed to him that the fact of the relapse occurring was sufficient to indicate that it was not arsenical.

The discussion was also participated in by Drs. Bulkley, Klotz and Allen.

THIRD DAY. — THURSDAY, SEPTEMBER 19th.

MORNING SESSION.

The Secretary read a paper written by Dr. Stelwagon, of Philadelphia, entitled,

A CASE OF URTICARIA PIGMENTOSA.

The objective symptoms are almost always the same in the cases classed under this head, for mid-way cases between this type and the ordinary urticaria, are rarely seen. It would almost appear that this was a peculiar disease by itself. The case reported occurred in a boy of six, who had a good personal and family history. The disease began at eight months, after two unsuccessful attempts at vaccination. The eruption was most abundant upon the covered portions of the body at first, but later there was a disposition for them to appear upon the face. The disease had been present constantly since its first appearance, the older lesions disappearing without leaving a trace. The eruption consisted of rounded elongated reddish papules, sometimes surmounted by a small vesicle, varying from the size of a pin-head to that of a large pea; there were also small flattened yellowish lesions, the size of a pea, and of a salmon color, and other spots, where recovery seemed to be taking place, with nearly normal skin, slightly atrophied and pigmented. The first appearance of the lesion is not unlike that of the wheal of urticaria, but smaller and less inflamed. The itching was slight. No other lesions than these were found at any time. The changes from the beginning of the eruption until the disappearance of the lesion would require weeks or months. The treatment has been without influence.

Dr. Fox had an impression that the disease was not correctly named, although he could not suggest a suitable term for it at the present time. It seemed to him that the pigmented lesions were the essential features of the disease, and that the urticarial element was secondary. It would be interesting, in these cases, to note the condition of the skin after a series of years, in adult life.

Dr. Heitzmann did not agree with the last speaker. He thought we should not lay too much stress upon the presence of pigment. He would admit that there was a trophic neurosis leading to the œdema, which goes deep down to the subcutaneous tissue. In the ordinary cases there is a œdematous infiltration, without extravasation, and then we have the whitish color. But if there is stagnation, with exudation of blood, then we have blood corpuscles mixed with the œdematous liquids. It seems to be the same as ordinary urticaria, plus hæmorrhage into the wheals.

Dr. Fox did not mean that the pigment was characteristic, but that the lesions are not of the nature of an urticaria. The pigment is a fact of minor importance. There is simply an urticarial element associated with the lesions.

Dr. Taylor had seen a child, twelve years of age, who had suffered with this disease until the sixth year. At the time of the observation she had the appearance as though she had an intense erythematous spyhilide.

Dr. Hardaway, of St. Louis, read a paper entitled

DERMATOLOGICAL HINTS.

(1) Spontaneous involution of sarcoma. He had reported the case in 1882; it was an alveolar pigmented sarcoma of the skin. The face, hands and feet were affected, and there was swelling of the lymphatic glands. At that time the disease had existed eight or ten years. In 1884 a number of deposits had occurred on the hands and feet. A recent inspection, fifteen years after the beginning of the process, shows that the disease is arrested. The tumors have all gone, leaving an atrophic condition of the skin. He had never received treatment. At about the same time another case of fibrosarcoma was reported; the patient was put upon arsenic, and died within six months, having been sick two years.

(2) Disappearance of an extensive eruption of xanthoma. A paper was read in relation to the case in 1884. All parts of the body were affected. Since that time there has been a gradual involution of the disorder. In four years from the time of the conservation the lesions have undergone complete involution, though the bronzed hue still remains. He received no treatment whatever.

(3) Case of bullous eruption in a child. The patient, eleven years old, had had measles four years before, and the present eruption came on a month after recovery from that disease. The skin was elevated and reddened. Often whole areas of sound skin would be surrounded by the bullæ. Under the use of arsenic the intervals between the attacks was materially increased, and such lesions as made their appearance were more or less aborted.

Dr. Heitzmann remembered the case of sarcoma. He recollected that he had predicted that the course of the disease would be a slow one, on the ground that the pigment was diffused and not granular. He had read of one case of sarcoma in the tonsil of a child where recovery took place spontaneously.

Dr. Greenough asked how Dr. Hardaway would exclude chronic relapsing urticaria.

Dr. Hardaway replied that there was no pruritus in the case.

Dr. Taylor spoke of a case where bullæ appeared in large numbers, and in the shape of most perfect rhombs and parallelograms. At first it was thought the patient must have caused them herself, but that source was excluded.

Dr. Bronson called attention to the instances of intense neuralgic pain sometimes accompanying sarcoma of the skin. In one case the lesions were upon the face and extremities especially, and occurred in the form of very superficial and somewhat tough lesions, the largest having an area of an inch and varying color from reddish to deep purple. The pain was the most prominent feature. There was no evidence of the growth of tumors in the inside of the body. The patient finally died, apparently of exhaustion. No autopsy was permitted. The observation has been made that these cases of pigmented sarcoma of the skin are most common in Hebrews. It would be an interesting point to settle.

Dr. Bulkley thought that this would be a proper subject for one of the regular meetings of the Association. He thought, with Dr. Greenough, that a good name for these cases of hydroa and dermatitis herpetiformis would be chronic urticaria, with tendency to vesication.

Dr. Graham here read the histological report of the case of herpes zoster that he had reported on the first day of the meeting, and exhibited specimens under the microscope. It was found that the ganglia were extensively invaded by leucositis, some of the latter having taken the place of the destroyed nerve cells. In this case it seemed as if the diplococcus was the irritant element. No inflammatory processes were found in the pons medulla or cerebellum from the same subject.

Dr. Heitzmann said that the fact that the ganglion cells were affected in this disease had been known for twenty-five years, but now it was interesting to find micrococci in the ganglia, and perhaps that means that we shall find the real cause of the disease. It seemed to him that the bacteria shown were a new variety. He hoped the next opportunity for such study would be improved, and if possible cultures made from the tissues.

A paper was read by the Secretary, in the absence of the author, Dr. Stelwagon, entitled

ON THE ALLEGED TOLERANCE OF THE IODIDES IN SYPHILIS.

The author would deny the statement made by Dr. H. C. Wood, that there is a toleration of the iodides in the case of patients who are affected with syphilitic lesions. Perhaps there might be a certain ground for the belief in the case of those who had cerebral syphilis, but if it were so it was not on account of the specific effect of the disease, but because the central nervous system was the part affected, and from a similar lesion any other cause would have a similar result. The writer gave briefly the history of five cases of syphilitic skin disease in whom the assertion was certainly not true. Moreover, in investigating the influence of the iodides in psoriasis, he had found cases that bore the remedy quite as well as any cases of syphilis could have done.

Dr. Taylor thought the statement of Dr. Wood had been thoroughly disproven by Dr. White. There is no difference in this respect between the syphilitics and non-syphilitics. The speaker thought that we were inclined often to weaken in giving the drug in the cutaneous cases, whereas we push it more strongly in the nervous cases, under the view the case is a desperate one. Sometimes there will be a toxic effect at one time, and none at all at another. It seemed to him that many of the cases that Dr. Wood had treated had gone through the stage of acclimatization, so to speak.

Dr. Greenough referred to the fact that sometimes patients who cannot take small doses will bear larger ones perfectly well.

Dr. Taylor, in reference to this point, recalled the case that he reported a year ago, and said that the eruption was brought on at the very beginning of the treatment; but the iodide had to be continued, on account of the patient's general condition, and after a time he could take two or three drachms without any influence upon his eruption or any inconvenience.

Dr. Denslow mentioned the case of a man who had undoubted syphilis, and who was laid up sick in bed every time the smallest amount of iodide was given him.

Dr. Bulkley spoke of the value of giving arsenic in connection with the iodide. He had reached as high as ten drops of the Fowler's solution.

Dr. Taylor did not believe the arsenic did any good where the iodide caused coryza; but where there is a disturbance in the skin, with a tendency to form dermal lesions, the arsenic, he thought, would hold the inflammatory condition in check. And yet it will fail utterly in some cases.

Dr. Fox asked the effect upon the action of the bromides.

Dr. Hardaway had seen it tried in a good many cases, and had never seen good effects.

Dr. Fox believed that the bromine and iodine might produce lesions one week, and be taken without trouble the next; so that he was coming to believe that all supposed effects of arsenic, at least in the case of bromide, were simple cases of coincidence.

Dr. Bronson spoke of the fact that the acne in bromism is more aggravated than in iodism, as perhaps having a bearing in the case.

Dr. Tilden exhibited a boy, of whom mention had been made in reference to prurigo, and he was examined by members of the Association.

Dr. Bronson was fully convinced of the diagnosis. In his mind, the essential feature was the neurosis affecting the particular portions of the skin.

Dr. Fox agreed to the diagnosis. In his mind, there was a doubt as to the propriety of separating the disease prurigo from chronic papular eczema. The history of the case, however, separates it from eczema, since the latter tends to get well, sooner or later, without treatment.

Dr. Allen, of New York, remarked that the diagnosis might almost be made from the peculiar pallor of the face which was present in this case. In a patient that he had under observation, the body was covered with moluscum tumors which seemed to have developed upon the prurigo base, from the scratching.

Dr. Bulkley was ready to admit that, perhaps, American dermatologists had been too prone to place some of these cases under the head of eczema. It would be better, perhaps, to call some of them by this name.

Dr. Taylor thought the cases had sometimes been presented to the Society in the evening, and the light had interfered with correct ideas of the lesions.

Dr. Zeisler considered the case a typical one. The cases in Vienna are not so very frequent. They are brought into the clinics again and again. The difference between the papular eczema and this case is striking. The joints, hands and face will be most affected, and in this disease are free. Even though we have too many terms in dermatology do not let us throw away distinct pictures of disease. If we call this a papular eczema we produce a terrible confusion.

Dr. Fox would base his opinion as to the entity of the disease on its occurrence in early life, its neurotic origin and its duration, but not upon the fact that certain parts of the body are effected or upon the deep-seated character of the lesions.

Dr. Taylor returned the thanks of the members for the hospitality that had been accorded them at the hands of the Boston members. A fitting response was made by Dr. Greenough in behalf of the Boston members.

On a motion of Dr. Fox, it was voted to extend the thanks of the Association for the use of their rooms, to the Boston Medical Library Association.

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THE AMERICAN PEDIATRIC SOCIETY.

First Annual Meeting, held in Washington, D. C., September 20 and 21, 1889.

FIRST DAY. — MORNING SESSION.

The Society was called to order by the President, Dr. A. Jacobi, of New York, who delivered an address of which an abstract follows:

PRESIDENT'S ADDRESS.

Progress and success, in order to be complete and unmistakable, require centralization of means and a co-operation of men. The isolated labors of the greatest men in the history of science never accomplished anything beyond a spasmodic and stationary advance. The best results are obtained by the voluntary association of scientific men all over the world. He had hailed with delight the proposal of the formation of the American Pediatric Association. Thirty years ago he had attempted the formation of a section for the purpose of studying the diseases of children in the New York Academy of Medicine, but failed. The points which establish the claims of pediatrics to be considered a specialty were next referred to. Pediatrics does not deal with minute men and women; with the same class of diseases in smaller bodies, but it has its own independent range and horizon. It gives as much to general medicine as it has received from it. Internal medicine owes many of its best results to the observations made on infants and children. The surgery of infancy and childhood is peculiar, and some of its operations are almost exclusively adapted to or necessitated by the surgical diseases of the young. The connection of pediatrics with neurology is also very intimate, and many of the most interesting neuro-physiological data have been secured by our special colleagues. Neuro-pathology also owes many results to observations made on infants. Neurology's sister, psychology, is indebted for much of its wealth to the study of the intellectual life of infancy and childhood.

The history of the embryo and fœtus finds its legitimate termination in that of the infant and childhood. Thus embryology, teratology and pedology, with pediatrics, are but chapters of the same book. The scientific consideration of any one of them is impossible without that of the others. The theories of heredity and consanguinity refer equally to all. Many examples of the intimate correlation between embryology and the malformations, and the disease of the child were given. The most vital questions of public hygiene are intimately connected with pediatrics. It is mainly two subjects which attract attention in this connection, — the school and constitutional disease. Emphasis was laid on the fact that it still appears that our schools were establishments, organized to promote near-sightedness, scoliosis, anæmia and both physical and intellectual exhaustion. Unless the education and training of the young are carried on according to the principles of a sound and scientific physical and mental hygeine, neither the aim of our political institutions will have been reached nor the United States fulfil its true manifest destiny. That manifest destiny is not so much the political one of excluding Europeans from our continent, — north or south, — for indeed the participation of European civilization in the gradual work of removing barbarism ought to be very welcome, — but of raising the standard of mental and physical health to possible perfection and thereby contributing to the welfare and happiness of the people. Another subject in which pedology and pediatrics are profoundly interested is that referring to constitutional and infectious diseases. Most of these belong to early life, and the vast majority of them can be avoided, mortality greatly diminished and ill-health resulting therefrom diminished.

TWO CASES OF DOUBLE EMPYEMA,

by Dr. Francis Huber, New York.

Case I. B. S., thirteen years old, met with an accident January 4, 1889. A few hours later had a chill, pain in the chest and bloody sputa. He was seen by the speaker on the third day of illness, when a diagnosis of double pleuro pneumonia was made. The condition became worse, and on the fifth day of illness the respiration reached 60 and the pulse 150 per minute, while the temperature was 104.5° F. He then gradually improved, and on the fourteenth day fluid was detected. Exploratory puncture showed pus. January 27th, the right pleural cavity was evacuated and over a pint of pus withdrawn. February 2d, the left side was treated in a similar manner, and two large drainage-tubes inserted. The general condition contraindicated any extended operation. February 6th, the right pleural cavity was incised and drained. Large quantities of pus continued to escape from both sides. The patient gradually improved, and both tubes were dispensed with. April 17th, the pulmonary expansion was complete, breathing distinct over both lungs, no dulness and general condition excellent.

Case II was reported through the courtesy of Dr. Newfield. The patient, five and one-half years of age, fell from a wagon. This was followed by some pain in the head, fever and cough. He passed into a typhoid state with symptoms pointing to lesion of the thorax. Exploratory puncture on the eighth day of his illness revealed acute empyema. The same evening the right pleural cavity was opened and drained. Same days later the left pleural was treated in the some way. Improvement was rapid and pulmonary expansion good.

SUBCUTANEOUS EMPHYSEMA IN CHILDREN,

by Dr. Charles Warrington Earle, Chicago.

The following case was reported. H. J., age three one-half years, was seen November 26, 1888, with catarrhal pneumonia. There was no effusion of any consequence. December 10, 1888, the speaker was hastily summoned with the statement that the child was enormously swollen. The subcutaneous tissues of the forehead, cheek, neck and entire trunk, anterior to Poupart's ligament and posterior to the iliac crests, were filled with air. The child was bandaged from head to foot, and supporting and stimulating treatment administered. The child at first improved, but gradually signs of exhaustion appeared, and it died on the tenth day. The propriety of puncture of the skin at different points was considered, but was not employed as it was thought it would add the additional danger of infection. Reference was then made to other reported cases, and to the literature of the subject.

MEMBRANOUS CROUP (LARYNGO-TRACHEITIS) IN A GIRL TWELVE YEARS OF AGE; TRACHEOTOMY RECOVERY;

by Dr. A. Caille, New York.

July 1, 1889, the speaker was requested to intubate in a case of laryngeal sternosis. The temperature was 100°. The submaxillary glands could be felt. The voice was husky, and there was a short, dry cough. No membrane was visible in the nose or throat. The dyspnœa was moderate. The diagnosis of membranous croup made by the attending physician was agreed in. The dyspnœa not being urgent, operation was postponed. The next morning the child had a choking spell during which a piece of membrane was coughed up. Auscultation showed little respiratory murmur over the left lung. There was good murmur over the right lung. Relief followed the expulsion of membrane, but the dyspnœa returned that afternoon and tracheotomy was performed. The tube frequently became occluded, giving rise to attacks of dyspnœa. Convalescence was interrupted by an attack of purulent bronchitis, but the patient ultimately made a good recovery.

Dr. Charles Warrington Earle, of Chicago, then read a paper on

THE NECESSITY OF PROLONGED REST AFTER SOME ATTACKS OF DIPHTHERIA.

The author referred to the frequency with which sudden death occurs in attacks of diphtheria. He insisted that in this disease, from first to last, the recumbent position should be maintained, not to be relinquished for any purpose. The most nutritious diet should be employed. Nerve tonics, strychnia, nux vomica and electricity with general tonics are also indicated, but before everything else, the recumbent position is to be insisted upon.

AFTERNOON SESSION.

The first paper was that of Dr. J. Henry Fruitnight, New York, on

THE TREATMENT OF SCARLET FEVER,

taking up in detail the various indications for treatment presented by this disease and giving the treatment which had proved most satisfactory in his hands. The management of the complications of the disease was also considered.

Dr. L. Emmett Holt, New York, presented a specimen from a case of

CONGENITAL DEFORMITY OF THE HEART.

The apex was about as far to the right as it is usual for it to be to the left, the middle lobe of the right lung being hollowed out for the reception of the organ. There was a single ventricle, the pulmonary artery and aorta arising from a common cavity There was marked pulmonary stenosis. Both auricles communicated freely with each other and with the common ventricle. The ductus arteriosis was closed. The child had lived to the age of seventeen months in a cyanosed condition, and had died from acute pleuropneumonia.

APPARENT PHYSICAL CONTRADICTION INVOLVED IN THE REINFLATION OF A COLLAPSED LUNG WHILE AN OPENING REMAINED IN THE PLEURAL SAC,

by Dr. J. O'Dwyer, New York.

The various theories which had been suggested to explain this phenomenon were taken up and discussed. The one which seemed best to fulfil the condition was that which attributes the reinflation of the collapsed lung to forcible expiration while the glottis is partially or completely closed. Cough is probably the most powerful of these efforts. It is reasonable to suppose that, under these circumstances, some of the air will be forced into the collapsed lung. Reinflation of the collapsed lung can be completely accomplished by cough alone; and the only mystery that surrounds the subject is the occurrence of some force by which the lung can be held in that position long enough for adhesions to occur. The author suggested the possibility of a physico-chemical force generated by the interchange of gases in the pulmonary residue, which would supplement the pressure of the atmosphere in drawing air into the lungs, or at least in holding it there when once admitted. If such a force exists, it must be the result of the attraction between the oxygen and hæmoglobin, for here we have to do not with simple diffusion, but chemical union.

(*To be continued.*)

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VENTILATION OF PUBLIC SCHOOLS.

Early in June last the City Council of Boston passed an order directing the Board of Health to examine the school-houses of the city and report their sanitary condition to the *press*, as though the latter were a co-ordinate branch of the city government. In compliance with this extraordinary order such a report has just been published. A careful perusal of this document leads one to the conclusion that either the order was not seriously received, or the report was intended to cover no more than the strict letter demanded without regard to the spirit.

It is probable that the ultimate object of the order was to give to the public some definite and reliable information as to the condition of the schools, the public mind being at the time in a condition of considerable unrest, owing, no doubt, in part to extravagantly worded articles frequently appearing in the daily press.

The report which has been called forth gives, however, no facts concerning any particular building in detail, but communicates its results as to all the schools *en bloc*. No parent can be any the wiser as to the condition of the particular building within which his child is in daily attendance, from any information here supplied, but on the other hand, he may be still further alarmed by the very comprehensive condemnation implied in that portion of the report which treats of ventilation. It is to this part that particular exception must be taken by anybody with any theoretical or practical knowledge whatsoever of the science of ventilation. The report says, "Of the 163 houses, 146 are without any modern or efficient means of ventilation, being dependent upon the old-fashioned shafts in the wall, aided here and there by small apertures through the external walls; all of which is too feeble to be called ventilation." This is doubtless intended to mean that in 146 houses, out of 163, the inlet currents of fresh air and the outlet flow of foul air are so feeble that the result may not be called ventilation.

This conclusion is not based upon actual observation and experiment in the 146 houses, but rests upon the very insecure footing of an inaccurate inference. The process of reasoning here employed appears to be, — no house not provided with power ("heated shafts or fans") can have anything not too feeble to be called ventilation; 146 houses are not so provided; hence 146 houses have no ventilation.

But it would appear that even in the remaining seventeen, which are furnished with modern means, the ventilation is by no means so perfect as to warrant more than this faltering endorsement: "In eleven of the school-houses the extraction of foul air has been *more or less promoted* by the aid of heat applied to the outlet shafts to increase the current of air, and in six others the same object has been sought and *more or less effected* by the use of exhaust fans in the tops of the buildings." [Italics ours.] Thus it appears that 146 are not at all, and the remaining seventeen only "more or less" ventilated. This is certainly not very reassuring to the thousands of parents directly interested in our public schools.

But we are further informed that "the practicability of ventilating schools admits of no doubt. It is as much a matter of exact knowledge as any other question in mathematics or engineering. . . . This can be done only with the aid of power, and may be accomplished by heated shafts or fans. . . . All dependence upon natural ventilation should be abandoned as delusive and untrustworthy, and the simple question of expense for the use of the necessary power to move the air be recognized and met without further delay."

We very much doubt that the Board can find any authority on the subject in support of their views. The "old-fashioned shafts in the walls" are by no means under sentence of banishment; good ventilation is not impossible without "heated shafts and fans." The value of natural ventilation is no delusion, and the matter of expense in the introduction of power is anything but simple. It is a matter of common knowledge that many of our schools in which only the "old-fashioned methods" are employed, enjoy excellent ventilation. Simple means of ventilation intelligently operated *may* be practically of more avail than expensive and complicated systems which offer greater opportunities for mismanagement.

It is to be hoped that the report will not be taken with too much seriousness by those to whom the matter of ventilation of public buildings and school-houses has been intrusted by Chapter 149 of the Acts of 1888, from which we may quote as follows:

"Every public building and every school-house shall be ventilated in such a proper manner that the air shall not become so exhausted as to be injurious to the health of the persons present therein. . . . Whenever it shall appear to an inspector of factories and public buildings that further or different sanitary provisions or means of ventilation are required in any public building or school-house in order to conform to the requirements of this Act, and that the same can be provided without incurring unreasonable expense, such inspector may issue a written order to the proper person or authority directing such sanitary provisions or means of ventilation to be provided, and they shall be provided in accordance with such order by the public authority, corporation or person having charge of, owning or leasing such public building or school-house. . . . Any school committee, public officer, corporation or person neglecting for four weeks after the receipt of an order from an inspector, as provided in the preceding section, to provide the sanitary provisions or means of ventilation required thereby, shall be punished by fine not exceeding one hundred dollars."

This chapter, it will be seen, empowers any inspector, who may accept the views expressed in this report, to order every school to be virtually remodelled (the expense being a simple matter and hence "not unreasonable"), so as to be provided with the necessary power, and in case of non-compliance to cause much personal inconvenience.

It is also to be hoped that should the Mayor be authorized to appoint a committee of experts, as recommended in the report, he will select men whose views are sufficiently advanced to enable them to give some fair return for the "liberal compensation" recommended.

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DEATH BY ELECTRICITY.

The number of fatal accidents from electric light wires is exciting increased attention, especially in New York. During the past week, within three days of each other, two men have thus been killed in that city, under the most tragic circumstances. The first was an employé of the Manhattan Electric Light Company, and was one of a gang of five linemen who were sent to remedy some trouble in the circuit on Grand Street, near Centre. While working up a pole he came in contact with a live wire, which caused his instant death, and his body fell to the street below.

The second victim was a lineman of the Western Union Telegraph Company, who was at work on a tall pole at the corner of Chambers and Centre Streets. His tragic death is thus described by an eye-witness: "He was astride of the fourth cross-bar from the bottom, and had one foot resting on the next cross-bar beneath, and was apparently in the act of reaching out for a wire, which he intended to cut, when he was suddenly seen to shiver and tremble as though he had received a violent shock. He put out his right hand and seized a wire, as if to steady himself, and immediately there was a flash of flame under his hand. Then bright sparks and tongues of blue flame played all about his hand, and a small cloud of smoke curled up into the air. His right hand next slipped from the wire, and he fell forward across a net-work of wires, which caught him across the throat and face and held him suspended some forty feet from the ground. The man appeared to be all on fire.

Blue flames issued from his mouth and nostrils and sparks flew about his feet. Then blood began to drop down from the body on the pole, and a great pool formed on the sidewalk beneath." The lifeless body hung thus suspended for half an hour before it could be removed with safety, and thousands of horrified spectators stood watching the ghastly spectacle.

It is probable that the wires of the United States Illuminating Company, which run through Centre Street, furnished the fatal current. Although there were no electric-light wires on the pole on which the accident occurred, the telegraph wires which the man touched must have been in contact with an electric wire, and death was no doubt caused instantaneously.

On the day after the first of these fatal accidents Mayor Grant had a resolution passed by the Board of Electrical Control, to the effect that notice be given to all companies operating and furnishing electric lights on overhead wires in the city to discontinue the use of all overhead wires, which are not properly insulated until such time as such wires shall be certified by the expert of the Board to be in proper condition; and after the second accident he issued a peremptory order that all dangerous wires should be at once removed. It is now five years since the law requiring the companies to put their wires underground was passed, but comparatively little progress has yet been made in the matter.

There seems to be some doubt whether putting wires in subways may not be attended by dangers quite as serious as any which exist under the present conditions. The truth is, our modern life is attaching itself to untamed forces, in regard to whose possibilities for good or evil much has yet to be learned.

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MEDICAL NOTES.

— Mr. John B. Stetson, of Philadelphia, who has organized much charitable work in that city, is building a hospital in connection with the North Fourth Street Union Mission. The hospital is nearly completed, and is of brick and "seven stories high."

— The price of quinine has lately risen in London to fifteen and one-half pence per ounce. Three months ago it was eleven pence. Dealers complain that there is no profit in the trade, remembering the time when it brought thirteen shillings.

— The school for the training of nurses, connected with the Johns Hopkins Hospital, has just opened under the direction of Miss Hampton, formerly of Chicago, who received her training in the nurse schools of Paris and Berlin. She has two trained nurses as assistants. The nurses' home is one of the largest and handsomest of the block of hospital buildings. With the opening of this school the great hospital will be in full operation, with Dr. William Osler as chief physician, and an efficient corps of assistants. President Gilman, in a statement to the trustees of both institutions, says that properly to establish in working condition the proposed medical branch of the university an endowment of $500,000 is needed.

— The first annual meeting of the Medical Library Association of Chicago, was held October 4th for the election of officers and the adoption of by-laws, etc. The following officers were elected at the meeting last night: ***President***, N. S. Davis, Sr.; ***Vice-President***, E. W. Lee; *Secretary*, Bayard Holmes; *Treasurer*, Ephriam Hughes. The association has already secured a membership of 75, and the executive board expects to increase it to 300. Each member pays a $100 membership fee and annual dues to the amount of $10. From this it is expected to derive a fund of $30,000, and an annual income from dues and membership fees of $5,000. As soon as practicable a building site will be purchased and a fireproof building erected. The association has already obtained about 2,500 bound volumes and pamphlets, which will be increased as rapidly as possible bv purchase and donations.

— The Health Department of the City of New York has just published the mortality statistics for the year 1888, — the first publication of the sort it has made for some years.

There were 40,175 deaths in the city in that year, which made a death-rate of 26.33 per 1,000. The most fatal disease was phthisis, which had 5,260 victims. Less than half of these were natives of this country, 2,809 being foreign born. Next to phthisis as the great destroyer of human life in the city is pneumonia, which killed 4,288. This was more fatal to natives than to foreigners — a fact accounted for by its fatality in very early life, for over nine hundred of its victims were under one year old. In fact, it is in the city one of the serious maladies of child life, for 1,828 of the victims were under five years of age. In more than half of all the deaths in the city the victims were children, and 17,358 of these were very small children. Vehicles in the street killed 100 persons.

One notable fact in this statement of the causes of death appears in the record of two causes particularly fatal to children — cholera infantum and the diarrhœa of young children killed 3,215, or more between them than any malady, excepting only pneumonia and phthisis — and the figures are apparently against the endurance of native children. From cholera infantum there died 1,550 natives against 28 foreigners, and from diarrhœa 1,423 natives against 211 foreigners.

BOSTON AND NEW ENGLAND.

— It is stated by Connecticut papers that a young woman of Bridgeport, a domestic, who swallowed, or thought she swallowed, a plate of false teeth, was subjected to the operation of gastrotomy without finding the teeth. She still complained of agonizing pain and was sent to a hospital in New York where (the doctors having been put in possession of all the facts), a second gastrotomy was performed, and on her recovery from ether a set of teeth prepared for the occasion was shown her, and she at once recovered from all pain and discomfort.

— At the first regular meeting of the Society of Arts, held at the Institute of Technology, October 10, the paper of the evening was upon "Biological or Chemical Water Analysis," by Prof. W. T. Sedgwick of the Institute. He analyzed different waters, claiming that one-third of a teaspoonful of Cochituate water, tested by the gelatine process, contains sixty to one-hundred bacteria, and yet is as pure as the average water. The State Board of Health was highly commended for its practical system of analyzing water. After an interesting exhibition of filtered waters and vegetable deposits through sand, the meeting was adjourned.

— "Dr." Henry Freeland Bradbury, was indicted by a grand jury, and brought before Judge Colt, of the United States Circuit Court at Concord, N. H., on October 9th, for using the mails for fraudulent purposes, and for the use of a fictitious name, for the purpose of aiding or abetting fraud. He is the man who figured as the proprietor of the bogus colleges mentioned in this Journal on October 3d. He replied in answer to the question, "What is your plea?" "I do not wish to contend against the United States." A fine of $250 was imposed on the first indictment, and $100 on the second.

— In connection with the exposure of the "Vermont University," Prof. Narcisse Cyr, of Boston, related to a *Herald* reporter, that the *Christian World* of London, published a statement during the past summer to the effect that the degree of LL.D., had been conferred upon a clergyman of Bradford, England, by the "Bellevue University of Boston." The "Bellevue," it will be remembered, was the "university" which sold medical diplomas, and the exposure of its fraudulent doings was followed by an act of the Massachusetts Legislature, which made the sale of medical diplomas a crime.

NEW YORK.

THE DECISION IN THE KEMMLER CASE.

— In the Kemmler case, which, it will be remembered, was a *habeas corpus* case to test the constitutionality of the new electrical execution law, County Judge Day, of Auburn, has filed his decision, to the effect that the law is constitutional and that the prisoner Kemmler be remanded to the custody of the warden of the state prison at Auburn for execution. In the course of his opinion the judge says:

"The question of the constitutionality of this law is of importance, for, apart from any other consideration, should it ultimately be held unconstitutional, not only may the condemned possibly escape from adjudicated guilt, but all other persons committing capital crimes since the beginning of the current year may likewise go unpunished, inasmuch as it is expressly provided that after it takes effect a crime punishable by death must be punished according to its provisions and not otherwise, and it is clear that any penal act hereafter passed to apply to these cases would necessarily and justly be held void as *post facto*. . . . The Constitution of the United States and that of the State of New York, in language almost identical, provides against cruel and inhuman punishment. Section 505 of the Code of Criminal Procedure, in force prior to the inactment of 1888, provided that the punishment of death should in every case be inflicted by hanging. It is this attempted change in the mode of inflicting the death penalty that provokes the present controversy. There seems to be an element of cruelty inseparable from any taking of human life as punishment for crime, but it is clearly not against this that the constitutional prohibition is directed. The common law rule in this State when applied was adopted, and until the act of 1888 took effect, no question was made as to the legality of death by hanging. That statute has changed the means whereby to produce death. And can it be said that in this case it has been plainly and beyond doubt established that electricity as a death-dealing agent is likely to prove less quick and sure in operation than the rope? I believe not. . . . The questions are whether the prisoner has overcome the presumption that the statute of 1888 in regard to the infliction of the death penalty provides a cruel and unusual, and therefore unconstitutional, punishment and that a force of electricity sufficient to kill any human subject with celerty and certainity, when scientifically applied, cannot be generated. In my judgment, these questions must be answered negatively. The most that can justly be said in his favor is that there is diversity of opinion on the principal question. Before this statute can rightly be abrogated there should be judicial knowledge that the punishment therein provided is cruel and unusual. There is no such knowledge, and his contention falls."

The case is now to be taken to the Court of Appeals, and an early decision on it is desired by the Attorney-General, for the reason that there are about a dozen persons confined in jails in different parts of the State awaiting trial for murder, and the authorities do not deem it advisable to try them until it has been passed on by the higher court.

TWO DEATHS AT THEATRES.

— During the past week two persons have died of disease of the heart during performances at theatres. The first was an esteemed actor, the second was a spectator, a gentleman from out of town.

DEATHS AMONG STOKERS ON ATLANTIC LINERS.

— In regard to the dangers to life and health to which the stokers on the fast Atlantic steamers are exposed, one of the daily papers makes the following forcible and just remarks: "The collapse of five of the stokers on board the *Teutonic* is a striking illustration of the cost at which the high speed of the Trans-Atlantic races is maintained. It is explained that the men who succumbed were not as strong as firemen commonly are, and it is evident that they were not so strong as the firemen who did not succumb. Nevertheless, it is only by trying that a man can ascertain whether he can stand the ordeal of four hours' work in such a furnace as the fire-room of a great ocean steamer pushed to her utmost speed. It is possible that considerable improvements may be made in the ventilation of fire-rooms, though it is very difficult.”

CONFERENCE OF INSANE ASYLUM SUPERINTENDENTS AND MANAGERS.

— A conference of the superintendents and managers of asylums for the insane in the State of New York, was held at Buffalo, October 9th. Dr. John D. Hill, President of the Board of Managers of the Buffalo Asylum, presided, and a permanent organization was effected. It was agreed to hold an annual convention, and that the next one should be at Binghamton, on the third Wednesday in September, 1890. Papers were read by Dr. J. B. Andrews, Superintendent of the Buffalo Asylum, Dr. P. M. Wise, of the Willard Asylum, and others.

Miscellany.

THE PERKINS INSTITUTION FOR THE BLIND.

The Annual Meeting of the corporation of the Perkins Institution and Massachusetts School for the Blind was held at the institution in South Boston, October 10th. Dr. Peabody occupied the chair, and John A. Bennett, the acting director, was the secretary. The first business before the meeting was the 58th annual report of the trustees.

The total number of blind persons in the asylum, September 30, 1889, was 226, against 214 last year and 200 the year before. Of these 173 belong to the school proper, 30 to the kindergarten for the blind at Jamaica Plain, and 20 to the workshop for adults.

The health record of this institution makes a better showing than it did last year. The report speaks especially of the death of Laura Bridgman, May 24th. A history of her education and a tribute from Mrs. Julia Ward Howe are also appended.

Michael Anagnos, after twenty-one years' service as director and secretary of the board, has obtained leave of absence for a year. During his absence in Europe John A. Bennett is the acting secretary.

The report of the treasurer was read and accepted. The amount of cash on hand October 1, 1888, was $37,306.52: receipts from all sources during the year, $203,123.38; total $240,729.90; expenditures and investments, $177,833.11; balance on hand $62,896.79.

A part of the permanent funds have been invested in real estate on Purchase Street and in South Boston, and a granite building at the corner of Congress and Matthews Streets is owned by the institution. A bequest of $5,000 from the late Moses Hunt of Charlestown, who had repeatedly contributed to the printing fund, was read.

The officers elected were as follows: *President*, Samuel Eliot; *Vice-President*, John Cummings; *Treasurer*, Edward Jackson; *Secretary*, M. Anagnos; *Trustees*, William Endicott, Jr., Edward N. Perkins, Joseph B. Glover, Leverett Saltonstall, Dr. J. Theodore Heard, S. Lothrop Thorndike, Andrew P. Peabody, D.D., George W. Wales.

It was voted that the trustees be authorized to petition the General Court for permission to hold additional real and personal estate for its corporate purposes, including the kindergarten.

STATISTICS OF THE BOSTON DISPENSARY FOR THE YEAR 1889.

The statistics of this institution for the year ending September 30, 1889, are as follows:

The number of new patients treated at the central office is 21,650, classified as follows:

Medical Department. — Men, 3,048; women, 5,320; children, 3,166; total, 11,534.

Surgical Department. — Men, 1,692; women, 908; children, 704; total, 3,304.

Skin Department. — Men, 567; women, 454; children, 285; total, 1,306.

Department for Diseases of the Nervous System. — Men, 550; women, 341; children, 93; total, 984.

Department for Diseases of the Throat and Nose.— Men, 680; women, 766; children, 537; total, 1,883.

Department for Diseases of Women.—Women, 699; total, 699.

Department for Diseases of the Eye. — Men, 276; women, 305; children, 327; total, 908.

Department for Diseases of the Ear. — Men. 148; women, 176; children, 195; total, 519.

Department for Diseases of the Genito Urinary System. — Men, 988; women, 15; total, 1,003.

Department for Diseases of the Rectum. — Men, 103; women, 45; children, 4; total, 152.

Orthopedic Department. — Men, 34; women, 33; children, 98; total, 165.

Dental Department. — Men, 232; women, 311; children, 581; total, 1,093.

The number of visits made by patients, old and new, at the central office is 52,152. The number of patients treated in the Districts is 14,238 (including 374 cases of midwifery), classified as follows: Men, 2,258; women, 5,231; children, 6,749; total, 14,238 The results of treatment in the Districts are as follows:

Discharged, cured or relieved . . .	13,078
Removed to Hospitals	807
Died	330
Remaining under treatment . . .	63
	14,278
Under treatment at last annual report . .	40
	14,318
The number of patients treated at the Central Office and in the Districts . .	35,888
The number of cases of midwifery attended during the year	374
The number of cases of midwifery attended since July, 1856	5,717
Whole number of patients since October, 1796	1,033,415
Whole number of patients since July, 1856 .	911,612
Average daily attendance at Central Office .	162
Largest number present any one day, August 19	322
Smallest number present any one day, November 26	52
Number of recipes put up during the year .	56,336
Number of house recipes	43,739
Number of district recipes	12,597
Largest number of recipes put up any one day, March 11	340

Smallest number of recipes put up any one day, November 26	69
Number of paid recipes	51,255
Number of free recipes	5,081
Number of paid dental patients	1,029
Number of free dental patients	64

The list of medical officers is as follows:

Surgeons: Drs. J. Foster Bush, George H. Monks, Edward O. Otis, William M. Conant. Physicians: Drs. Robert Disbrow, John Dixwell, Thomas M. Rotch, Claudius M. Jones, Harold Williams, George M. Garland, Edward M. Buckingham, Vincent Y. Bowditch, William C. Emerson, Robert B. Dixon, Russell Sturgis, Frederic M. Briggs, Winfred B. Bancroft, William F. Temple, George E. Richards, Henry Jackson.

Skin Department. — Drs. Francis B. Greenough, Abner Post.

Department for Diseases of the Nervous System. — Drs. William N. Bullard, John A. Jeffries, Elliot G. Brackett.

Department for Diseases of the Throat and Nose.— Drs. Thomas A. DeBlois, John W. Farlow, Edward W. Warren, J. Payson Clark.

Department for Diseases of Women. — Drs. Francis H. Davenport, John W. Elliot, John B. Swift, Rufus A. Kingman.

Department for Diseases of the Eye. — Drs. William D. Hall, Edwin E. Jack.

Department for Diseases of the Ear. — Drs. George A. Leland, Henry L. Morse, William S. Bryant.

Diseases of the Genito-Urinary System. — Drs. George H. Tilden, Francis S. Watson, Hayward W. Cushing, Gardner W. Allen.

Department for Diseases of the Rectum. — Drs. Walter J. Otis, William D. Hodges.

Obstetric Department. — Dr. Charles M. Green.

Orthopedic Department. — Dr. Royal Whitman.

Pathologist. — Dr. Edward M. Greene.

Dentist. — Joseph E. Waitt, D.M.D.

District Physicians. — Drs. Willis B. McMichael, George A. Sargent, Henry C. Baldwin, George G. Sears, Silas H. Ayer, George Haven, Samuel Breck, Algernon Coolidge, Jr., William S. Boardman, Frederick W. Stuart.

Apothecary: Frederick H. Dudley. Assistant Apothecary, Joseph S. Lang.

William H. H. Hastings, *Supt.*

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 5, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	605	232	18.53	18.19	8.84	2 38	3.91
Philadelphia	1,040,245	330	102	9 90	14.40	2.40	4 20	1.50
Chicago	830,000	356	169	26.60	9.24	10.36	2.52	12.60
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	131	56	16.72	15.96	8.36	3.04	2.28
St. Louis	450,000	135	57	19.24	6.66	3.70	5.92	7.40
Boston	413,567	189	65	17 49	15.90	4.77	4.77	6.36
New Orleans	250,000	102	21	19.60	13.72	5.88	1.96	2 94
Cincinnati	225,000	102	—	23.46	8.82	1.96	98	22.54
Washington	225,000	95	32	22.05	11.55	5.25	6.30	7.35
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	17	8	35.28	17.64	5.88	11.76	11.76
Portland	40,000	36	14	11.11	13.90	5.56	2.78	—
Worcester	78,292	14	6	21.42	14.28	—	7.14	14 28
Lowell	71,518	29	8	48.30	11.55	17.25	17.25	6.90
Cambridge	65,552	42	25	47.60	7.14	35.33	2.38	9.52
Fall River	62,647	31	19	25.84	9.69	16.15	3.23	3.23
Lynn	53,331	47	19	27 69	8.52	17.04	8.52	—
Springfield	40,731	19	—	10.52	26.50	5.26	—	—
Lawrence	40,619	10	1	—	40.00	—	—	—
New Bedford	37,253	34	14	35.28	5.88	8.82	—	26.46
Holyoke	35,872	7	5	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	13	4	30.76	—	—	7.69	7.69
Brockton	28,813	9	3	22.22	—	11.11		11.11
Chelsea	28,167	—	—	—	—	—	—	—
Haverhill	26,058	8	3	25.00	12.50	12.50	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	11	5	—	—	—	—	—
Newton	21,553	—	—	—	—	—	—	—
Malden	19,774	4	2	—	25.00	—	—	—
Fitchburg	17,534	5	4	40.00	20.00	40.00	—	—
Waltham	17,332	5	4	20.00	—	—	20.00	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	9	4	11.11	—	11.11	—	—
Quincy	13,728	3	2	33.33	—	—	33.33	—

Deaths reported 2,398: under five years of age 881; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 480, consumption 320, acute lung diseases 164, diarrhœal diseases 179, diphtheria and croup 154, typhoid fever 85, malarial fever 18, whooping-cough 15, cerebro-spinal meningitis 14, scarlet fever 12, measles 3.

From malarial fevers, New Orleans 9, New York 5, Baltimore 2, Philadelphia and Charleston 1 each From whooping-cough, New York 6, Philadelphia and Chicago 2 each. Boston, Nashville, Lowell, Fall River and Lynn 1 each. From cerebro-spinal meningitis, Washington 3, Boston, Worcester, and Somerville 2 each. New York, Philadelphia, Chicago, Baltimore and Cincinnati 1 each. From measles, New York and Philadelphia 1

The meteorological record for the week ending Oct. 5, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Oct. 5, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...29	30.22	52.0	61.0	43.0	66	51	58.0	N.W.	W.	9	2	C.	C.		.0
Monday, ..30	30.09	62.0	72.0	51.0	89	82	86.0	S.W.	S.	14	15	O.	O.		.0
Tuesday,.. 1	29.64	64.0	70.0	59.0	87	87	87.0	S.	S.W.	21	12	O.	C.	4.45	.31
Wednes. .. 2	29.80	58.0	66.0	51.0	72	65	68.0	W.	N.W.	16	15	C.	C.		.0
Thursday,. 3	30.08	50.0	61.0	40.0	64	72	68.0	N.W.	S.	13	8	C.	O.		.0
Friday,.... 4	30.08	60.0	68.0	51.0	82	62	72.0	S.W.	N.W.	8	13	C.	O.	1.00	.02
Saturday,. 5	30.14	46.0	51.	40.0	71	80	76.0	N.	S.E.	10	8	O.	O.		.0
Mean for Week.	30.01		64.0	48.			73.0							5.45	.33

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 5, 1889, TO OCTOBER 11, 1889.

Munday, Benjamin, captain and assistant surgeon U. S. Army. Granted four months leave of absence. Par. 2, S. O. No. 233, A. G. O., October 7, 1889.

Kendall, William P., assistant surgeon U. S. Army. Granted leave of absence for one month. S. O. 93, Department of the Platte, October 2, 1889.

Tremaine, Wm S., surgeon U. S. Army. Relieved from temporary duty at Fort Leavenworth, Kansas, and will return to his home (Buffalo, N. Y.). Par. 13, S. O. No. 230, A. G. O., October 3, 1889.

Pope, Benjamin F., surgeon U. S Army. Relieved from duty at Fort Clark, Texas, and will report for duty to commanding officer, Whipple Barracks, Arizona Ty. Par. 11, S. O. No. 230, A. G. O., October 3, 1889.

Billings, John S., surgeon U. S. Army. Detailed as delegate to represent the Medical Department of the Army at the annual meeting of the American Public Health Association, to be held at Brooklyn, N. Y., October 22, 1889. Par. 10, S. O No. 230, A. G O., October 3, 1889.

Smith, A. K., assistant colonel and surgeon U. S. Army. Leave of absence extended twenty-one days, on surgeon's certificate of disability. Par. 7, S. O. 234, A. G. O., October 8, 1889.

Carter, Edward C., captain and assistant surgeon U. S. Army. Granted leave of absence for twenty days. Par. 6, S. O. 234, A. G O., October 8, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 12, 1889.

Bright, G. A., surgeon. Detached from temporary duty at the Naval Academy and placed on waiting orders.

BOSTON CITY HOSPITAL. CANDIDATES FOR POSITIONS AS HOUSE-OFFICERS.

Attention is called to the announcement of the Boston City Hospital of its semi-annual examination, November 7th, of candidates for appointment to the positions of house-officers for the term of service beginning on the first Monday of January next. Last year one of these appointments went to a candidate coming up from the Bowdoin Medical School.

SOCIETY NOTICES.

American Academy of Medicine. — The American Academy of Medicine is endeavoring to make as complete a list as possible of the Alumni of Literary Colleges, in the United States and Canada, who have received the degree of M D. All recipients of both degrees, literary and medical, are requested to forward their names, at once, to Dr. R. J. Dunglison, Secretary, 814 N. 16th Street, Philadelphia, Pa.

The Southern Surgical and Gynecological Association. — A Meeting will be held in Nashville, Tenn., November 12, 13, and 14, 1889. The preliminary programme has been issued, and members of the Medical Profession are cordially invited to attend.

Hunter McGuire, M D., *President*, Richmond, Va
W. E. B. Davis, M.D., *Secretary*, Birmingham, Ala.

OBITUARY. CHARLES HADDOCK, M D.

Dr. Charles Haddock, of Beverly, Mass., died October 10th He was stricken with apoplexy eighteen days before while driving home from a visit to a patient; and had remained in a semi-conscious state since then. He was born in Hanover, N. H., sixty-seven years ago. His father was for many years a professor at Dartmouth College. Dr. Haddock was educated in that college, and, after studying medicine, began its practice in Claremont, N. H. In 1847, he went to Beverly, where he settled and had practiced ever since. Dr. Haddock, in a very few years after settling in Beverly acquired a large practice, not only in that town, but also in Manchester, Salem, Peabody, Wenham and other towns of Essex County. He was surgeon of the old eighth Massachusetts regiment during the Civil War, and was in charge of the hospital at Newbern, N. C. Dr. Haddock was appointed medical examiner for the district in which he lived. He was also recently appointed examining surgeon for pensions. He was a member of the Massachusetts Medical Society, and of numerous social and civic organizations He leaves a widow and one son, Dr. Charles W. Haddock, a practicing physician of Beverly.

OBITUARY. WILLIAM H. CRAIG, M.D.

Dr William H. Craig died October 4th, at his residence in Albany, N. Y. He was born November 2, 1825, in Lisbon, St. Lawrence County. His father and mother were of Scotch ancestry. He attended the Albany Medical College, and graduated in 1852. He was associated with Dr. Martin until 1851. In 1862, he entered the army as surgeon of the 177th regiment of the New York State Volunteers, and went into service with that command in the department of the Gulf and Mississippi River. He was at Port Hudson, and after that the regiment came home, and was mustered out of service. Soon after, he was made examining surgeon of the pension bureau in Albany, where he served three or four years, and was then made president of the board of examiners. In 1870, he was elected president of the Albany County Medical Society. In 1877, he was nominated postmaster, near the close of President Grant's second term. His commission was signed by President Hayes, and he entered upon his duties March 12, 1878. President Garfield reappointed him May 4, 1881, and he served until his successor was appointed. He was a member of the State Medical Society, a curator of the Albany Medical College, a member of Post 63, G. A. R, and of Fort Orange Club.

BOOKS AND PAMPHLETS RECEIVED.

The Cerebral Palsies of Children: a Clinical Study from the Infirmary for Nervous Diseases. Philadelphia. By Wm. Osler, M.D, F.R.C P., London, Professor of Clinical Medicine at the University of Pennsylvania, etc. Philadelphia: P. Blakiston Son & Co 1889.

A Text-book of Physiology. By M. Foster, M A., M D., LL.D, F.R.S, etc. With Illustrations Fifth edition, largely revised. Part II, comprising Book II. The Tissues of Chemical Action with their Respective Mechanisms Nutrition London and New York: Macmillan & Co. 1889.

Chemistry: Journal Medical and Pharmaceutical, including the chemistry of the U. S. Pharmacopœia. A manual of the general principles of the science and their applications in medicine and pharmacy. By John Attfield, F R.S., etc, 12th edition. Philadelphia: Lea Brothers & Co. 1889.

Original Articles.

SOME CAUSES OF PREVENTABLE BLINDNESS.[1]

BY HASKET DERBY, M.D.

According to the figures given by Dr. Lucien Howe,[2] blindness in the United States increases at a rate out of proportion to that of the growth of the population. Between 1870 and 1880 the latter had increased 30.09%, and the number of blind 140.78%. The community is supposed to have been, in 1880, at a charge of between sixteen and seventeen millions of dollars for the support of these individuals.

A certain proportion of this loss of sight is, of course, preventable. Being desirous of estimating the relative number of such cases in our own community, I recently applied for permission to examine the inmates of the Perkins Institution for the Blind in South Boston. Mr. Anagnos very kindly placed at my disposition every possible facility, both at South Boston and at the Kindergarten in Jamaica Plain. I was thus enabled to take notes of 183 cases, all but one of which I personally examined. The single exception was absent at the time of my visit, but his recorded history left no doubt as to the cause of his loss of sight.

Following the classification of Magnus, I have divided these cases into four classes, and subdivided them as follows:

I. CONGENITAL BLINDNESS.		
Mikrophthalmus	4	
Megalophthalmus	1	
Cataract	20	
Choroiditis	1	
Atrophy of optic nerves	9	
Anomalies of cornea	3	38
II. BLINDNESS IN CONSEQUENCE OF IDIOPATHIC DISEASES OF EYE.		
Blenorrhœa neonatorum	34	
Trachoma	4	
Blenorrhœa	5	
Disease of cornea	1	
Irido-choroiditis and cyclitis	5	
Choroiditis	1	
Separation of retina	1	
Idiopathic optic nerve atrophy	4	55
III. BLINDNESS OF TRAUMATIC ORIGIN.		
Direct injury of the eyes	9	
Unsuccessful operations	3	
Injuries of the head	16	
Traumatic sympathetic ophthalmia	12	40
IV. BLINDNESS ATTRIBUTABLE TO GENERAL DISEASE.		
Syphilis	1	
Brain (atrophy of optic nerves)	27	
Typhoid	1	
Measles	5	
Scarlet fever	16	50
		183

It is with the figures in the second class that we are more immediately concerned, and especially with those of blindness dependent on the ophthalmia of new-born children. There were 34 such cases out of 183, being a percentage of about 18.6. This is, however, a smaller proportion than has been obtained by other observers, and can only be accounted for by the limited number of individuals I was able to examine. At the Sheffield School for the Blind, Mr. Snell found 38.3% blind from this cause, and observers in general estimate that some 30% of all blindness is due to this disease.

Even the examination at South Boston reveals the fact that at least one in every five of the inmates of the institution need not necessarily have ever come there. For it is an established fact that the ophthalmia of new-born children can, with few exceptions, be successfully prevented when there is reason to apprehend its occurrence. It is also not an exaggeration to claim that hardly a disease of the eye yields with more certainty to appropriate treatment. As the experience gathered in various countries demonstrates that this affection ranks easily first among the causes of blindness; and as our own is, to my knowledge, the only community in which any difference of opinion as to its proper treatment has prevailed; I have thought it desirable to allude to the approved practice of the present day.

As regards prevention, those connected with lying-in hospitals speak with most authority. Modern observers are united in the belief that efforts at disinfection should mainly be directed to the eyes of the child, which are most apt to receive the poisonous matter after birth. Such being the case, is strict cleanliness alone sufficient, or should an active disinfectant in addition be employed?

This is no longer an open question. Experiments carried on by different observers, controlling ample material, have demonstrated, beyond a doubt, that the purulent infection of the eyes of new-born children can be reduced to a minimum by the use of a disinfectant, and that the most efficacious disinfectant is the nitrate of silver. Simple cleansing of the eyes with water was found by Bischoff to reduce the number of cases only one-half. Credé, the original proposer of the use of nitrate of silver, had, before the introduction of prophylaxis, 314 cases among 2,897 children. 10.8%. After beginning to use the 2% solution of nitrate of silver he had but from one to two cases in 1,160 children, being 0.1 to 0.2%.

Other agents have been tried, among which a 1% solution of carbolic acid gives the best results. Königstein's figures are very striking and particularly valuable, as they were all conducted at the same clinic and with the same attendants. In 1,092 cases, in which no treatment was used, his percentage of ophthalmia neonatorum was 4.76; in 1,541 treated with a 1% solution of carbolic acid, 1.42%; in 1,250 treated with a 2% solution of arg. nit., 0.72%.

In fine, the 2% solution of nitrate of silver gives the surest results, is devoid of danger, causes but trifling irritation, and deserves general use. It is to be applied to each eye as soon as the child has been washed, one or two drops being sufficient. It is not necessary to evert the lids, it having been found that the cornea is not injured if the application be made directly to the eyeball. Its application should be the rule in all lying-in hospitals, as well as in all cases occurring elsewhere in which, owing to the previous condition of the mother, infection is to be feared.

The *Wiener medizinische Zeitung*, of February 5, 1889, contains an interesting account of the trial of a midwife, which took place the week before. The individual in question was charged with the illegal practice of medicine, in that she had applied to the eyes of a new-born infant a two per cent. solution of nitrate of silver, as a preventative of ophthalmia neonatorum. Condemned to three days imprisonment she had appealed, and it was pleaded in extenuation of her conduct that she had learned this method at the medical school, and that experience had proved it to exert a valuable prophylactic effect. This argument prevailed and the magistrate acquitted her. It appears that the Austrian Minister of the Interior had, several years previous, decreed that this method of Credé should be practised at all public lying-in institutions; and had, moreover, advised its use by physicians in general. The question that now arose was as to whether midwives should be allowed to adopt this method as a matter of routine, without special orders from a physician, and the feeling of the writer in the *Wiener Zeitung* was strongly in favor of their so doing.

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[1] Read before the Boston Society for Medical Observation, April 1, 1889.

[2] Transactions Am. Ophth. Society, vol. iv, p. 532.

Infection after birth may occur through contact with the lochial secretion, or any other want of cleanliness: particularly in hospitals through the employment of sponges, etc., that have been used with other children. There is no necessity for here dwelling on the symptoms of the disease, its rapid course when untreated, the danger to be apprehended from destruction of the cornea, either in part or wholly, and the almost certain results of appropriate and timely treatment. It is with the form of this last that we are chiefly concerned, and a proper knowledge of the subject is of the utmost importance, not so much to the specialist as to the general practitioner into whose hands the vast majority of these cases fall. Ophthalmia neonatorum, at the Boston Eye Infirmary, forms but .32% of all the diseases there treated, having occurred in 19 years but 386 times among 118,344 cases of ophthalmic disease. As we know the disease to be not uncommon among the poorer classes, the inference is that it is treated, if at all, by the regular medical attendant.

Scrupulous cleanliness, the frequent removal of the discharge and the use of mild astringents, may be by no means sufficient. In the present state of our knowledge it is not presumptuous to assert that a case of this disease, terminating in a manner fatal to sight, and treated without topical applications of nitrate of silver, would be regarded as having been culpably neglected. This is the remedy that acts with the most certainty as a specific against the gonococcus. It is not only antiseptic in its action, but works both superficially and deeply. As has been justly observed "it causes a sloughing of the upper layer of epithelial cells; if then the micro-organisms have already penetrated there they are followed up and destroyed by the silver solution. Hence the action of the silver solution is so much more certain than that of the carbolic acid mixture."[3] It is to the neglect of the timely use of nitrate of silver, and the failure to regularly inspect the cornea and provide in time against its destructive ulceration, that the blindness, occurring as a result of this disease, is generally due.

In this connection the experiments[4] of Weeks may be quoted. He tested the antiseptic value of the topical remedies employed in ophthalmology, noting their effects on the staphylococcus pyogenes, the most prevalent of pyogenic germs. It was found that Panas' solution (biniodide of mercury, 1; absolute alcohol, 400; water, 20,000) destroyed the staphylococcus in exposures of from one to three days. I cite this first because this solution has been so largely used here. Carbolic acid it was found could not be used in solutions of sufficient strength to be germicidal. Boric acid had no germicidal effect whatever. Iodoform not only did not destroy the germ, but, on being exposed to the air for several days, became itself the breeding ground of a bacillus. Corrosive sublimate, 1 to 10,000, destroyed vitality in five minutes, 1 to 5,000 in three minutes. A 1% solution of nitrate of silver, however, acted in twelve seconds, 2% in eight seconds, and 10% in four seconds.

So much of the principal factor that operates in causing preventable blindness. Of that from trachoma it is less necessary to speak, as that disease appears to be greatly decreasing in this community. The greater care used in the regulation of emigration, the gradual improvement in the housing and sanitary surroundings of the poor, and the discovery of jequirity as a remedy are all working such a change for the better that one is almost justified in looking forward to a time when "granular lids" will be a tradition of the past.

There is but one other cause of preventable blindness on which I wish briefly to dwell, traumatic sympathetic ophthalmia; of which I found 12 cases at the Blind Asylum, something over 6% of all affections investigated. With young children the occasion for the occurrence of this disease is most frequently the wounding the other eye by forks, scissors and knives, carelessly left in their way. As it can be guarded against by the timely removal of the injured eye, it is certainly desirable that the indications for the performance of this operation should be familiar to the profession. They may be condensed as follows:

The injured eye should be removed when:

(*a*) It contains a foreign body that cannot be extracted without destroying the eye.

(*b*) The nature of the injury is such that sight is unlikely to return, and there is danger of sympathetic disturbance.

(*c*) There is tenderness on pressure, vision having been destroyed.

There are other rules laid down, but these are the most plain and practical. Had they been understood and followed in the twelve cases seen by me, it is safe to infer that no one of these individuals would have become an inmate of the asylum.

To sum up the results of my investigation, I found 34 cases of ophthalmia neonatorum, 4 of trachoma and 12 of the results of sympathetic ophthalmia; together, 50 instances of preventable blindness; in all, 27% of the inmates of the South Boston Asylum who need never have gone there had they received suitable care or enlightened treatment at the proper time. To diminish such a percentage in the future, the more careful medical education of the present day will not alone suffice. Those who propose to follow the profession of nursing must also be properly instructed, and some degree of knowledge on these subjects be diffused in the community.

— The *Western Medical Reporter* says: "Two German athletes have arrived in New York whose feats of strength, it is said, will be a revelation to the strong men of this country. One can lift 545 pounds with his middle finger, and can pass a weight of 200 pounds slowly over his head with one hand. The other is credited with being able to force a six-inch nail with his bare hand through a two-inch plank."

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[3] Fuchs, Die Ursachen und die Verhuetung der Blindheit, s.s. 132-3.
[4] Knapp's Archives of Ophthalmology, vol. 16, no. 4, p. 375, et seq.

A CASE OF PAPILLOMATOUS URETHRITIS.[1]

BY F. M. BRIGGS, M.D.

The patient, male, age twenty-five, unmarried, consulted me in August, 1887, giving this history: He stated that every coitus was followed by a discharge from the urethra. This discharge was purulent and profuse, but was not accompanied by acute inflammatory symptoms. Injections of permanganate of potash always stopped it in a few days; but if left untreated, it went on indefinitely. At one time he had tried leaving it alone, but there being no improvement at the end of three weeks he had returned to injections and it was easily checked in a few days.

There was never any thin, gleety discharge, and he had no trouble while he remained continent.

He had had his first attack of gonorrhœa seven years before, and the condition above described had existed as nearly as he could remember, for about three years. He regarded himself as the possessor of a peculiar "gonorrhœal diathesis," and looked upon each attack as a fresh infection.

His father died of phthisis, but the patient himself was perfectly healthy aside from this trouble. He had a large meatus. Rectal examination showed a normal prostate. I examined for strictures with Otis' olive-pointed bougies but found nothing until No. 30 was reached, which showed a number of obstructions in the anterior urethra. The sensation to the hand was precisely that of urethral strictures. The bulb of the instrument went smoothly for a short distance and became slightly engaged, — passed the obstruction to again go over smooth mucous membrane, and was stopped as before. This was the condition for some four to four-and-one-half inches. I regret, in the light of subsequent events, that I did not make a careful endoscopic examination at that time.

My diagnosis was strictures of large calibre, and I began to dilate. The passage of a sound always caused a good deal of bleeding and made it rather a troublesome case to handle, but I did not look upon the bleeding as of any clinical importance.

The patient discontinued coming after a few visits and I saw no more of him until the following November, when he again came, and wished to go through a thorough course of dilatation. He came regularly for two months. I could then pass a No. 40 sound without difficulty, and told him I had dilated all that I thought necessary. Although there was no discharge, I could not place this to the credit of the sounds; for during treatment he had remained continent, and while continent he had always been free from trouble.

The treatment by sounds was not a success. About ten days later he came to me again as badly off as ever, having had intercourse two days before — in spite of the urgent advice I had given him to abstain from all indulgence and to lead a regular life for three months at the shortest.

I thought it useless to attempt anything further with sounds, and saw no more of him until the following July, (1888). He then reported that he had been in his usual condition since his last visit in February, but that once or twice the discharge had been streaked with fresh blood. He was sure this blood was in the discharge and not in the urine, nor were there any symptoms pointing to the bladder as its source. I passed a No. 36 olive-pointed bougie. Its withdrawal was followed by bleeding, and upon the upper rounded surface of the bulb of the instrument, I noticed a small gelatinous mass, which a hasty examination under a low power showed to be a branching growth.

A later endoscopic examination showed that the mucous membrane of the urethra for nearly five inches was simply studded with similar growths of various sizes. The larger ones occurred singly, the smaller in groups, and in some places they were clustered together, making a considerable mass and looking like the outside of a raspberry (Fig. 1). They were grayish-white in color, branching, and evidently vascular, for slight pressure with the end of the endoscope caused bleeding. In short they were warty growths or condylomata, and their presence within the urethra accounted satisfactorily for all the symptoms.

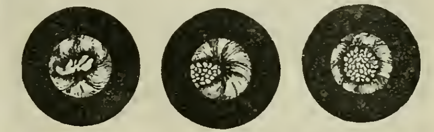

FIG. 1.

The growths as they appeared through a No. 34 endoscope.

I found it very difficult to decide upon the best method of removing these growths, and could get but little assistance on the subject from the various authorities on genito-urinary surgery.

Grünfeldt,[2] speaking of urethral *polypi*, advises their removal, through an endoscope, with a snare or with special endoscopic instruments of which he has three, namely, forceps, scissors, and a combined endoscope and guillotine. But the growths which he describes occurs either singly, or, at most there are two or three. His method of treatment would be efficient where a few isolated polypi are to be removed, but is useless where the urethra is the seat of such extensive distribution of growths as is the case in papillomatous urethritis.

In the *Annual of the Universal Medical Sciences* 1888, vol. ii, pp. 212-13, E. L. Keyes gives a brief *résumé* of an article by Oberländer of Dresden, and upon consulting the original[3] I found a most complete description of just such cases as the one in point.

Oberländer writes at length on the subject and goes very thoroughly into all its details. He discards all methods of treatment other than the one which he originated, and which, as I understand it, is as follows: He uses cotton tampons. The cotton is twisted firmly on the ends of tampon holders. Having introduced an endoscope to the seat of the growths, he passes down two tampons one after the other, partially withdraws the endoscope and presses the two tampon holders well against each other. The penis is stretched out, and the tampons, by an up-and-down, slightly twisting motion, ought to catch and pull off the growths. The tampons are withdrawn one after the other, and some papillomata will be found adhering to the cotton. Fresh cotton is re-introduced to the same spot to remove the growths still there, and this is repeated at the various diseased points of the urethra, until as many growths as possible have been removed.

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[1] Read before the Boston Society for Medical Observation, April 1, 1889.

[2] Endoscopie der Harnröhre und Blase. pp. 187-192.

[3] Vierteljahresschrift für Dermatologie und Syphilis, 1887, p. 1077, (4 Heft 2 Hälfte.)

One week later he examines again, and during this time many of the growths which were loosened by the tampons but were not removed, will have been carried out by the stream of urine. If any are left, he repeats his operation (which he calls "tampon ecrasement") and, if necessary, does so a third time. In regard to these cotton tampons, I translate his directions for making them as follows:[4] "In order to get a sure result, the tampons must have a definite size, and indeed such, that in the movements among the condylomatous masses they take hold, that is, they can be passed through only with distinct pressure. They ought not to go through too easily or one removes too little; nor should they pass through with too much difficulty, for then one has not room enough in the urethra for two tampons going side by side."

As regards after-treatment he says that if symptoms persist after all the growths are out, they are to be treated on the principles of treatment for chronic urethritis, by sounds or by topical applications.

This is Oberländer's treatment and I decided to adopt it; but if not successful with the method, to scrape the urethra with a small curette.

I operated on the 17th of August, 1888, Dr. G. W. Allen kindly assisting me.

Tampon ecrasement was a total failure in my hands. My experience with it was, that where the tampons were small enough to be freely moved about they had no effect on the warts. When I got them large enough to exert pressure, they were moved with great difficulty; so much so that I was afraid they would "bind" andtear the mucous membrane; and, although I made a number of attempts, I was unable to strike a happy medium.

I, therefore, determined to curette. My fear of this was hæmorrhage. The tendency to bleed upon passing sounds had been so marked, even with the most gentle manipulation, that I was doubtful as to the effect of scraping the urethra over the extent of surface that was necessary. But I could see no other rational method of treating the case, and thought that by scraping over a small surface first, and noting the result, I could decide as to whether further efforts in that direction were advisable or not.

I introduced a small sharp curette through an endoscope and scraped off an isolated growth. It came away easily and with only a trifling bleeding. I curetted farther without trouble of any kind. But I found that although the curette freed the growths from the walls of the urethra, it did not remove them from the canal; they were left behind when the curette was drawn out. Here I found the cotton tampons of great service; for the growths which had been previously detached by the curette, and were lying loose in the urethral canal, adhered to the cotton and were easily drawn out. (One medium-sized absorbent cotton tampon on the end of an ordinary wire tampon-holder is better for the purpose than two small ones.)

I worked in this way over the whole diseased area, going from before backwards, using first a curette and then a tampon, and clearing up about an inch of surface at a time. That is to say, I curetted about an inch of mucous membrane, removed the curette, and passing in a tampon, extracted the growths; then curetted another inch, and extracted with a fresh tampon, and continued this until I had reached the termination of the growths, a point about four and one-half inches from the meatus.

When I had finished, the endoscope showed the mucous membrane to be highly congested, bleeding moderately, with here and there a growth left hanging. I did not try to remove these, but left them, trusting that they would come away in urination; or if they did not, to remove them at a future date. As it proved they did come away with the stream of urine.

It is important to keep the penis well-stretched out while the curette is being used, for if this is not done a loose fold of mucous membrane can easily get caught between the edge of the endoscope and the curette, and a wound of the urethra follow.

This curetting was done very gently, and in the following way: An endoscope was inserted, and (after removing the obturator) was slowly withdrawn until some of the growths were in the field. The curette was then passed in through the endoscope to this point, and held there. The endoscope was partially drawn out leaving the curette among the vegetations. Then, after stretching the penis well out, and compressing it over the endoscope with one hand, with the other the curette was drawn lightly over all sides of the uretha for a short distance. I did not attempt to look through the endoscope while doing this. The mirror was used only in seeing that the curette was placed accurately. To remove each growth or collection of growths separately, by means of a mirror, would be extremely tedious and difficult, and is wholly unnecessary.

The operation was done with cocaine. I found about two drachms of a four per cent. solution sufficient to prevent pain; giving it in divided injections (that is from time to time. as necessary), with a deep urethral syringe. Antisepsis was, of course, carefully attended to, and at the end a thorough irrigation was given with 1 to 5000 corrosive solution. Bleeding, of which I had been afraid, proved trifling and caused no trouble.

The subsequent history was wholly satisfactory. I did not see the patient for a week, when he reported that there had been some oozing of blood for about twelve hours after the operation. The penis was sore for several days, and micturition painful, which was not surprising; but there had been no retention of urine or other accident, and he had kept about his business without inconvenience. A sharp urethritis started up the day following operation, and was still active; but a few injections of permanganate of potash quickly checked the discharge.

Two weeks later (three weeks after operation) I made an examination, and found the urethra wholly cleared up. It was slightly congested in places, but there were no growths and no discharge. The patient spoke particularly of a change in the character of the stream, which was much larger and came more freely than at any time since he could remember.

It is now seven and a half months since I operated, and he reports that he has been completely free from his former trouble, — coitus being no longer followed by a urethritis.

I have not been able to get another look through the endoscope; but, from the fact that for over seven months the symptoms of urethral irritation have completely disappeared (and that, too, for the first time in eight years), I think it can be safely said that the growths have not recurred, and the case can be fairly regarded as a cure.

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[4] Vierteljahresschrift für Dermatologie und Syphilis, 1888, p. 1096, (4 Heft 2 Hälfte.)

To sum up briefly: The symptoms are those of chronic irritation of the urethra. But an accurate diagnosis cannot be made by the symptoms alone. An endoscope must be used and the urethra thoroughly inspected. The prognosis is good; and, for treatment, the writer would recommend, as being both rapid and effective, the removal of the growths through an endoscope with a curette and cotton tampons, in the manner described above. If after-treatment is necessary, injections of permanganate of potash for several weeks. If this is not sufficient, then sounds or topical applications of nitrate of silver.

There has been very little written on the subject, especially as regards treatment, which is certainly an important point. The symptoms are a constant source of annoyance and discomfort, which can be quickly relieved by a safe and simple operative measure. Works on surgery, both general and genito-urinary, have little to say about it, and what they do say consists mainly in stating the fact that papillomata or condylomata sometimes occur within the urethra. Directions for removing them are either not given at all, or are not made sufficiently explicit. Oberländer's admirable article, previously spoken of, is the only one which I have found giving a careful and accurate description of the entire subject.

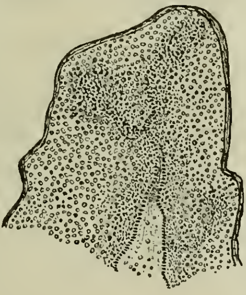

Fig. 2.

Dr. J. T. Bowen has very kindly made sections of some of the pieces which were scraped out, and the accompanying drawing which he has made shows the microscopic appearance of a single tuft (Fig. 2).

I think papillomatous urethritis must be an uncommon condition; but it may be found by a more general use of the endoscope in cases of chronic inflammation of the urethra especially where of long-standing, that in some of these the symptoms are in reality due to the presence of papillomatous growths.

SURGICAL OPERATIONS FOR THE RELIEF OF PRESSURE PARALYSIS IN CARIES OF THE SPINE.[1]

BY DRS. WILLIAM N. BULLARD AND HERBERT L. BURRELL.

The advances in surgery, which have been so rapid and so extensive within the last few years, have at length reached a point where operations of a serious nature upon the spinal column, involving the removal of portions of several vertebræ and the opening of the spinal canal, may be performed with success, so far as the operation itself is concerned, and it now becomes the duty of the physician to be able to give, so far as is consistent with our present knowledge, an intelligent opinion in regard to the benefit likely to be derived from such operation in any given case, and the risks which are to be encountered apart from those of a purely surgical character.

We wish then to point out as distinctly as possible what cases of spinal caries are, in our opinion, suitable cases for operation, and on what factors we depend to form an opinion in any special case.

The symptoms for which operations on spinal caries have been undertaken are those of compression with or without irritation of the spinal cord, and the direct object of these operations has been the relief of pressure on the spinal cord. This compression is usually produced in caries of the vertebræ either by the collection and accumulation of inflammatory products between the dura mater and the bone and by the thickening of this latter membrane with an increase of fibrous or connective tissue formation, or by the direct pressure of displaced bone. The first cause is by far the most common. In a very large proportion of cases, it is probable that compression once produced does not materially diminish and that the improvement in the symptoms, which so frequently occurs, is due principally to the adaptation of the cord itself to its surroundings; in a smaller number of cases the compression may be more or less acute, and may diminish or disappear spontaneously. These latter cases are usually connected with abscess formation. Apart from the general condition of the patient and the ordinary surgical considerations, there are three elements especially to be weighed in determining the advisability of an operative procedure on the spine. First, the actual condition of the spinal cord; secondly, its prospects of recovery (of function), if not operated upon, under rest and other suitable treatment; thirdly, its prospect of recovery (of function) if the pressure be removed.

ACTUAL CONDITION OF THE CORD.

The amount of injury suffered by the cord depends upon various factors, some more or less easily estimated, others extremely difficult to judge of. The principal ones are (1) the degree of pressure; (2) the time throughout which it has been exerted; (3) the liability of the cord to inflammation or degeneration.

Our means of determining the condition of the cord in general are well-known, and we will only say that the symptoms to be principally relied upon are the loss of motion and of sensation and the condition of the reflexes below the diseased area. It is evident that the greater the loss of motion and sensation below the diseased point, the greater must be the obstruction to, or the destruction of the cord conduction. If the inhibition or destruction of the conduction through the cord were proportional to the amount and duration of the compression, our problem would be much simplified. As it is, however, we have to deal with an indeterminate factor, the spreading of the disease in the cord. It is still a disputed question in what pathological form this extension of the disease ordinarily occurs, whether, as maintained by Strümpell, it is a degenerative process, or whether, as held by Gowers, it is inflammatory. However this may be, there is no doubt that, in addition to the ordinary spreading of the disease in certain cases, a spontaneous myelitis may occur, and the possibility of this must always be borne in mind.

PROSPECT OF RECOVERY WITHOUT AN OPERATION.

The prospect of, at least, a partial recovery is in the large majority of cases, especially in the earlier stage, a very good one. Even in cases of total loss of motion and sensation, recovery, at least partial, may occur. Incontinence of urine and fæces are very serious symptoms (Lauenstein's formula), yet we have seen both disappear after several months duration and the patient become practically well. The duration of the symptoms is a most important element in the prognosis, though even this is not so determining as might at first seem probable. We all know cases in which paralysis has existed for years and which finally commenced to improve and recover motion and sensation. The recuperative power of the spinal cord, at least as regards function, is much greater than would be supposed *à priori.* The cases of caries of the spine are comparatively few, in which, aside from causes dependent on the general health of the patient, it is not possible or even probable that some improvement in the symptoms, directly referable to the cord, will occur, if the active advance of the disease can be checked.

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[1] Read before the American Orthopedic Society, September 19, 1889.

So long as we have reasonable or even moderate chances of recovery without operation, we do not believe it advisable or justifiable, in the present condition of spinal surgery, to perform so serious an operation as resection of the laminæ of the spinal vertebræ. This consideration at once reduces the proportion of these cases, suitable for operation, to a very small one, as we all know how prone these cases are to at least a partial recovery; on the other hand, when spontaneous recovery has become otherwise well nigh hopeless, this procedure offers us a prospect of success which should not be neglected. At present, it seems probable that this prospect is greater in the case of children than of adults.

PROSPECT OF RECOVERY FROM PARAPLEGIA AND OTHER CORD SYMPTOMS BY MEANS OF OPERATIVE REMOVAL OF COMPRESSION.

We have thus far been able to collect only eleven published cases in which an operation for the removal of compression has been performed upon the spinal cord, omitting Abbe's case, which, though counted by White, seems doubtful. (These are Macewen, five; Horsley, Duncan, Lane, Dercum and White, Wright, Thompson, each one.) To these we add our own case, making twelve in all.

Three cases (Macewen's) were successful, four were much benefited, and some of these, notably Duncan's, should probably be classed as successful. One (Wright's) had recurrence of the former symptoms in two months. Four died, one in thirty hours, one in thirty-six hours, one in a week and one in a few months; the two latter of general tuberculosis.

Of these the age is given in only seven. Five were children under fourteen years of age. Two were adult males. Of the children one became well, three were at least much benefited, in one the symptoms recurred. Both the adults died of shock.

The results of these cases are, on the whole, favorable, and we are warranted in looking forward to much better ones as progress is made in surgical technique.

The principal contra-indication, besides the obvious ones existing in the general condition of the patient and his surroundings, is the presence of tuberculosis in some other portion of the body. In such cases the prognosis is necessarily serious, and the operation should not be attempted unless there exists some symptom thought to be due to pressure and immediately threatening life, as in the case of Thompson. Macewen's view that the presence of continued high temperature is of itself a contra-indication, aside from the possibility of its pointing to tubercular disease in other parts of the body, has not been borne out by later cases, notably by that of Lane, where, in spite of high temperature, the operation was successfully performed. The presence of an abscess is a contra-indication to resection if the pus can be evacuated in any other manner.

The occurrence of acute symptoms referable to the cord, other than those due to abscess is not an indication for operation unless they appear to threaten life through compression of the cord. On the other hand, in many cases where acute symptoms occur, we have to deal with processes in the cord which may not be specially aided by the removal of the compression, and where again there is a tendency to partial recovery. Thus a sudden paraplegia or increase of loss of motion or sensation is a contra-indication to immediate operation, though the time may come later when the operation will be desirable.

When, however, in any case the health of the patient is gradually failing, when cystitis is becoming chronic, and when obstinate bed-sores are beginning to form without obvious cause in a case of some standing, operation should be resorted to early in order that the chances may be in our favor.

To sum up in short:

Contra-indications: — (1) General health and general surgical considerations; (2) The presence of tuberculosis in other parts of the body; (3) The presence of an abscess connected with the caries which can be otherwise evacuated; (4) Acute exacerbation of symptoms referable to the cord, and not threatening life.

Indications in favor of an operation are: —(1) General good condition and favorable surroundings; (a) when the disease is gradually and slowly progressing to an unfavorable termination; (b) when the patient has more or less complete loss of motion and sensation in the portions of the body below the level of the lesion, and incontinence of urine and fæces, and where these conditions have lasted for a sufficient length of time to render spontaneous recovery improbable, and not so long as to have produced permanent destruction of all recuperative power in the cord. (2) Where acute symptoms threatening life appear, and where there is reasonable expectation that they may be relieved by the removal of compression.

We now come to the consideration of our own special case.

The patient, a strong butcher, forty-six years old, a native of Ireland, entered the Carney Hospital on the 29th of December, 1888, in the service of Dr. V. Y. Bowditch. His family history was good and he himself had never been ill previous to his present trouble. About three months ago, he began to suffer from pains in the back, sides and abdomen, and from a sensation of constriction around the body. Three weeks ago the pain extended to his lower extremities, they became weak and he was unable to walk without assistance.

December 30th. To-day an examination of the patient was made by Dr. Bullard at the request of Dr. Bowditch, as follows: Patient well developed and in excellent condition as regards general health.

Nothing abnormal detected about head, face, chest, upper extremities, or in any of the internal organs. Distinct prominence in the back, involving the fourth, fifth and sixth dorsal vertebræ, and over these there is some tenderness. There is a decided weakness of both lower extremities, but he can walk with the aid of a stick. Sensation is somewhat diminished everywhere in front below the seventh intercostal spaces; behind there is decided diminution below the level of the lower dorsal vertebra and slight diminution up to the level of the sixth dorsal. Thoracic reflexes normal as low as sixth or seventh ribs, below this and over the abdomen, the superficial reflexes are diminished. Over the back they are more marked in the upper portion than below, and are not marked over the glutei. Cremasteric reflexes slight; plantar cannot be obtained; triceps reflexes not remarkable. Knee-jerks much increased on both sides. Paradoxical contraction obtained on both sides, left more marked than right (this disappeared in a day or so).

February 1st. From change of service the patient enters to-day under the care of Dr. Bullard. Has grown steadily worse since entrance. Paraplegia increasing, some difficulty in micturition and considerable pain.

February 6th. Complete paraplegia. Sensation as before.

February 19th. The question of operation has been considered, but it has been decided to place the patient on a Bradford frame.

March 1st. Not comfortable on frame. Girdle pains very severe.

March 15th. Removed from frame. Very serious bed-sores. Has been in great pain most of the time, partially relieved by morphine.

May 13th. Patient growing rapidly worse, bed-sores increasing, and pain being intolerable. General condition has been rapidly failing, and is now poor. For the last fortnight every means has been used to improve his general condition.

Transferred to care of Dr. Burrell. (Patient was seen by Dr. Burrell, in consultation, for the first time in February, and several times later. For more than a fortnight before his actual transfer, he was practically under his care.)

On May 14, 1889, the condition of the patient was truly pitiable. He was suffering intense pain, which morphia could hardly make bearable; he had a large bed-sore, which exposed the sacrum and which extended onto either buttock. Sloughs had already occurred at various points on the heels and over the heads of the fibulæ. Cystitis existed in a marked form. The patient urgently begged for some relief to his condition, and the uncertainties of the success of the operative procedure having been explained to him, it was undertaken.

The patient was etherized and an incision was made in each vertebral groove extending from the second to the seventh dorsal vertebra; these incisions were carried down to the laminæ. Considerable oozing of blood ensued, which was arrested by sponge pressure. A transverse incision was made uniting these two incisions in the vertebral grooves, just below the spine of the fifth dorsal vertebra. This made an H incision. Two flaps were raised from the laminæ and the spinous processes by means of a heavy knife and scissors, and thus were made musculo-cutaneous flaps which were reflected upward and downward; then by means of a Bonwell surgical engine, which was run at a low rate of speed, the laminæ of the third, fourth, fifth and sixth dorsal vertebræ were divided. Unfortunately the engine, the saw of which was kept constantly wet by a stream of water broke down when the laminæ were two-thirds divided and the operation had to be completed by the aid of an osteotome. The osteotome was then driven in directly over the spinous process of the second dorsal vertebra, breaking off its overhanging point. A separation was accomplished between the spines of the sixth and seventh dorsal vertebræ by means of a knife and scissors; this allowed the block of the spines and laminæ of the third, fourth fifth and sixth dorsal vertebræ to be raised up, hingeing at the divided point of the spine of the second dorsal vertebra. The turning up of this block of spines and laminæ was not directly upward, but it was thrown a little to the right. This allowed a full, free exposure of the cord, which was seen in the bottom of the wound, seemingly normal in appearance, except opposite the fifth dorsal vertebra, where it was perceptibly flattened and did not pulsate. The veins of the cord were somewhat congested. The cavity was irrigated, and a small roughened portion of the lamina of the sixth dorsal vertebra was removed. The block of the spines and laminæ was turned down into position, and held by sutures to the adjacent muscular structure. Wound closed with catgut sutures, and dressed with baked gauze. Time of operation one hour and forty-five minutes.

The hæmorrhage which we expected would be quite severe was easily controlled; it was not greater in amount than usually occurs in a breast amputation and a clearing out of the axillary contents.

At the completion of the operation the patient was very cyanotic, and breathing was somewhat difficult. Stimulation was resorted to with partial success. The patient was put to bed reclining in prone position. Patient continued to improve very slowly throughout the day, and six hours after the operation took brandy per mouth, pulse very rapid and feeble. Eight hours after the operation patient was placed in a recumbent dorsal posture, and soon fell asleep. Respiration 36, pulse 144. Twenty-four hours after the operation it was noticed that he breathed with more difficulty and took less nourishment. Thirty-six hours after the operation the patient became cyanosed, his respiration became shallow, and he died of shock.

In commenting on this case we would say that it was undertaken as an experimental effort, with the distinct understanding with the patient that such was the case; and we both feel confident that had it been undertaken at an earlier period in the patient's illness, and at a time when his recuperative powers were stronger, it would not have ended fatally.

Dawbarn (*New York Medical Journal*, June 29) has reported a case where he resected for traumatic paraplegia. His operation occurred on December 20, 1888, and from his description we should judge that he attempted the same operative procedure that was undertaken in our case. His patient recovered, and some slight improvement in the symptoms ensued.

One of the advantages of the operation of "resection and reimplantation" is, that it lays bare a given portion of the spinal cord and restores the bony structures with a possibility, at least of their re-uniting; but at present, if we were asked to undertake this operation, we should decline, and should resort to the use of a trephine and bone-cutting forceps for the removal of the laminæ.

The key to the success of any operative procedure on the spine will be the securing of an efficient means for dividing the bony structures with ease, speed and accuracy.

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Hospital Practice.

CASES AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY H. H. A. BEACH, M.D., *Visiting Surgeon.*

LACERATION OF THE NECK OF THE UTERUS AND THE BASE OF THE BLADDER; VESICO-VAGINAL FISTULA; OPERATION.

THE patient was twenty-nine years old and had suffered from the annoyance and inconvenience of dribbling urine since the birth of her last child fourteen months ago. Upon examination a laceration was found dividing the anterior lip of the uterus and extending along the floor of the bladder for more than an inch and opening into that organ.

The borders of the laceration were freshened throughout their whole extent and then united by eleven silver sutures. Two weeks later all of the stitches were removed and the union found to be complete. Upon examination after two weeks more, hardly a trace of the laceration could be detected and there was no leaking from the bladder.

DISLOCATION OF THE SHOULDER–JOINT; SUBSPINOUS.[1]

The subject of this rare lesion was a middle-aged woman, who appeared at the out-patient department with the history of a fall, but could give no adequate description of the way in which she struck. Under ether the luxation was easily reduced by flexing the arm and rotating the head of the bone into the axilla; then extending the arm and applying moderate pressure with the hand in the axilla.

STRICTURE OF THE ŒSOPHAGUS; DILATION.

Two months ago, the patient, a woman of forty-three years, swallowed by mistake, a teaspoonful of undiluted nitro-muriatic acid. Profuse vomiting, and a burning sensation in the mouth, gullet and stomach followed. At the time of entrance to the hospital the inflammatory symptoms had subsided, but she was unable to swallow anything excepting liquids in small quantities. A No. 8 urethral bougie was with difficulty forced through a tight constriction below the level of the cricoid cartilage. This size was passed daily until it entered the œsophagus without difficulty. The size of the bougie was gradually increased until œsophageal bougies could be passed. They were also increased in diameter until one measuring thirteen-sixteenths of an inch entered easily. The patient was taught, and soon acquired, the knack of passing it herself. She improved much in health and strength with her increased capacity for taking nourishment of all kinds.

NECROSIS OF THE TIBIA INVOLVING THE KNEE–JOINT; OPERATION.

The patient was a man forty-three years old, who entered the hospital with his knee largely swollen, and presenting a number of fistulous openings apparently communicating with the interior of the joint. There had been a history of a fall five months before, striking the foot, but not the knee. Acute inflammation of the joint followed, pus formed and discharged spontaneously through the openings already described. This discharge continued up to the time when he entered the hospital. A number of small fragments of bone had been found on the poultices. A probe passed at the fistula on the inner side of the joint touched dead bone at a point about three inches below the patella over the centre of the tibia, but failed to reach the joint. A longitudinal incision of four inches was made from the spine of the tibia downward and the medullary cavity having been chiselled open, the disease was found to have involved more than one-third of the superior articulating surface of that bone. A large number of loose sequestra were removed and the carious bone curetted. The upper end of this bony canal now communicated directly with the knee-joint. The eroded cartilages of the femur and patella were carefully scraped away with the gouge and spherical rasp through an extension of the primary incision in the form of the branches of the letter Y along each side of the patella. The cavity was thoroughly drained, made aseptic, and, to ensure immobility, placed upon a bridged splint. The wound acted well from the first. A firm anchylosis gave all the advantages of an excision of the knee-joint without shortening.

TRAUMATIC ANEURISM OF THE ULNAR ARTERY; OPERATION.

Seven weeks before entering the hospital the patient had penetrated the ulnar side of the right wrist with a sharp fragment of glass from a broken tumbler. A sharp arterial hæmorrhage occurred, which was arrested by a handkerchief tourniquet and a bit of plaster. Upon examination the following day the puncture had closed. Some general swelling followed, and within a few days an abscess formed and opened spontaneously. As the swelling subsided, the patient observed a pulsating swelling at the seat of injury, which has slowly increased in size, without pain. There is a numbness of the little fingers and the ulnar side of the hand. The aneurism, of the size of a horse-chestnut, is in the line of the ulnar artery, and presents a red, shining surface, with visible pulsation, a distinct thrill and lateral expansion. Pulsation can be arrested by compression of the ulnar artery above the aneurism. A tourniquet was applied and the sac laid open disclosing a mass of soft red coagulum, this was turned out, the upper and lower ends of the artery leading to and from the aneurism were tied with stout catgut, and the wound made aseptic. After the application of the dressing the arm was bandaged and a splint applied, to ensure perfect rest. Complete union by first intention followed, with restoration of sensation to the little finger and ulnar side of the hand.

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[1] "This form of dislocation has been seldom met with. Only two cases, according to Sir Astley Cooper, occurred in Guy's Hospital in thirty-eight years; but in the last edition of Sir Astley Cooper's "Treatise on Fractures and Dislocations," edited by Bransby Cooper, nine cases are mentioned. Sedillot, Malgaigne, Desclaux, Van Buren, W. Parker, Lepelletier, Trowbridge, Physick, Snyder, Stephen Smith and myself have each seen one example Examples have also been seen by Dupuytren, Arnott, Best, Levacher, Berard, Fizeau, Velpeau, Fergusson, Kirkbridge and by Rogers." [Hamilton. Fractures and Dislocations.]

PERI-NEPHRITIS; ABSCESS; OPERATION.

Four years ago the patient, a girl of twenty, had inflammation of the bladder, but had enjoyed good health until eight months ago, when she became chilled, and after that had dyspepsia and lost her appetite. In the course of ten days pain and tenderness developed in the left lumbar region, which had continued with greater or less severity. Emaciation and loss of strength had been progressive. There was a history of fever and chills, with swelling in the lumbar region six months after, that "broke" internally two weeks before she entered the hospital; the "lump" disappearing, and from four to six ounces of pus appearing in the urine at the same time. An examination of the chest gave a negative result; likewise that of the abdomen, with the exception of some induration and deep-seated tenderness in the direction of the kidneys. The menses and dejections were normal and there had been no vesical symptoms. The urine had a specific gravity of 1,015, and contained much pus and albumen, but no blood.

It was clear that unless some relief was obtained from the continuous pain and local irritation going on in the vicinity of the kidneys, her case was growing more desperate every day. An exploratory incision of five inches in the colotomy line, with a careful dissection, layer by layer, finally disclosed what appeared to be the wall of an abscess. It was punctured and six ounces of pus evacuated. The opening was enlarged and upon passing the finger into the cavity which occupied the normal position of the kidney the chambered or pouch-like walls of the side suggested the feeling of the interior of the renal pelvis, which had been distended by the pus. I could not detect any granular condition of its investing membrane to suggest a deposition of tubercle, neither was there anything indicative of a calculus. The cavity was thoroughly washed out, a large drainage-tube stitched in place and an aseptic dressing applied.

Her progress was uninterruptedly good. Four days after the operation the urine showed very little pus. In twenty-three days the drainage-tube was removed and the pus had completely disappeared from her urine. In seventy-five days from the day of entrance she was discharged from the hospital well and strong, with the sinus perfectly healed, having gained much in weight and strength.

— A sad comment on medical non-success comes from Chicago in the shape of the suicide of Dr. Edward Deans at the age of seventy-one. He had been county physician of Cook County from 1860 to 1863, but decreasing practice and lack of means and old age induced the suicidal act. A previous attempt in the same direction had failed.

Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION.

THIRD Annual Meeting, held in Boston, Mass., September 17th, 18th, and 19th.

FIRST DAY. — TUESDAY, SEPTEMBER 17.

MORNING SESSION.

The Association met in the hall of the Building of Natural History, and was called to order at 10.30 A. M. by the President, DR. E. H. BRADFORD, of Boston, who spoke of the recent growth of orthopedic surgery, and of the illustrious efforts and achievements of Sayre, Stromeyer, Langenbeck, Bigelow, and many others.[1]

DR. V. P. GIBNEY, of New York, read a paper on

THE TYPHOID SPINE,

in which he first drew attention to a group of symptoms pertaining to the spinal column as sequelæ to this fever, and when pressed for an anatomical diagnosis, he used the term *perispondylitis*, meaning an acute inflammation of the periosteum and the fibrous structure which hold the spinal column together. His reason for the use of this term was the production of acute pain on the slightest movement, whether lateral or forward, and the absence of any marked febrile disturbance or neuralgia. He reported three cases. Careful search of text-books failed to reveal any cases of like nature. He then alluded to a similar condition in which the hip was affected.

DR. L. A. WEIGEL, of Rochester, N. Y. (by invitation), read a paper on

THE RELATION OF THE THORACIC AND ABDOMINAL WALLS TO THE SPINAL COLUMN CONSIDERED WITH REFERENCE TO THE TREATMENT OF ANTERO-POSTERIOR CURVATURE.

He reviewed in a very succinct manner the relation which the thoracic and abdominal walls bear to the spinal column, and endeavored to show that they assist materially in maintaining the upright position of the body, and must therefore be considered in the study of spinal curvatures. He drew the following conclusions:

(1) The spinal column in its general upright position is supported by the abdominal viscera, or rather by the resistance of the abdominal walls. Following the force of gravity the spinal column sinks downward until a resistance is met with. This resistance may be produced either by direct support on the viscera, or indirectly by pressure exerted through the elastic thorax and diaphragm upon the abdominal organs, which are thus forced against the muscular walls until an equilibrium of force is established.

(2) By the support which the abdominal viscera give to the spinal column and thorax, the abdominal muscles very materially supplement the action of the erector spinæ muscles by increasing the resistance which the viscera offer to the forward inclination of the spine and thorax.

(3) A backward inclination of the spine is limited by the tense abdominal muscles, and the firm linea alba to which they are attached.

A contribution entitled

PSOAS CONTRACTION AS A SYMPTOM,

was presented by DR. DILLON BROWN, of New York.

He alluded to the various diseases in which this condition may be found and gave their diagnostic points, emphasizing the phenomena by means of which each disease could be excluded.

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[1] See page 299 of the Journal.

Dr. A. B. Judson, of New York, read a paper on

THE PREVENTION OF THE SHORT LEG OF HIP DISEASE,

in which he said the deformities of hip disease are caused by the patient's efforts to so place the limb that it shall be the least disturbed by, and afford him the most convenience in, his customary attitudes and movements. They are (1) abduction; (2) adduction; and (3) extreme adduction and flexion. The second position is practically by far the most important. It is caused by the patient's elevating that side of the pelvis in order to take the limb off the ground, and to keep the affected limb out of the way of the well one, which is on the ground a longer time than the affected limb, and does most of the work of progression. The limb is maintained in the chosen position by reflex muscular contraction, which does not immobilize the joint, but fixes it in such a manner that changes in its position are readily made by the application of gentle but persistent force. It is proposed, therefore, to induce the patient, wearing a hip splint, which protects the joint from the violence of walking, to divide the time on the ground between the two feet, or rather between the foot of the sound side and the ischiatic crutch on the affected side, with the expectation that adduction and flexion will be wholly or in part reduced, when the affected limb makes repeated efforts to reach the ground and does its share in locomotion. It is believed that the patient can be induced by precept and drill to adopt this change in the manner of locomotion, with the result indicated, a belief which is sustained by the observation that patients led by accident to walk in this way, have recovered with a good position of the limb and by the results of the adoption in practice of this method of preventing deformity.

AFTERNOON SESSION.

Dr. C. C. Foster, of Cambridge, Mass., read a paper entitled

A CASE OF CARIES OF THE ANKLE TREATED CONSERVATIVELY,

in which he gave a detailed account of the case and its treatment, showing the plaster casts of the foot before and after treatment. He did not claim that all cases should be treated conservatively. He knew that often, especially in hospital practice, resection was the only satisfactory treatment.

Dr. Charles L. Scudder, of Boston (by invitation), read a paper on

REPORT OF CASES OF CARIES OF THE ANKLE TREATED BY EXCISION,

after which patients were exhibited.

He drew the following conclusions: (1) Excision is safe, and the mortality is not great. (2) The convalescence and time of after-treatment are short. (3) The disease in the foot is ended; and the prognosis is sure. (4) Profuse suppuration and its consequences are avoided. (5) The likelihood of septic infection is at a minimum. (6) The partial operation of curetting is of very little value. (7) There is no mutilation of the foot. (8) Its usefulness is very great after excision. (9) The question of tubercular infection from operative interference is yet unsettled. (10) Excision of all the diseased bone should be resorted to earlier in the treatment of chronic ankle-joint and tarsal disease.

Dr. DeF. Willard, of Philadelphia, presented a paper entitled

REST AND FIXATION IN HIP DISEASE.

Dr. Willard advocated the employment of rest as an essential element in the abortion and arrest of the osteitic inflammation. This rest should be produced by removing the weight of the body from the affected limb. The more thorough the rest, and the more perfect the fixation, the less will be the resultant inflammation. Persistent and long-continued rest of the joint prevents rather than produces anchylosis. Fixation may be accomplished by traction in the horizontal position, with the addition of sand bags or side splints, with counter extension, or it may be employed in the upright position by traction splints. In either case, it is an assistant in overcoming muscular spasm. Fixation may be accomplished by splints of leather, wood, wire, plaster-of-Paris, or any other material, the essential condition being that the splint shall encircle the thorax so as to support the hip. Any splint, fixation or traction, which has simply a pelvic or waistband does not prevent motion at the hip-joint, and this thoracic addition should be the essential element in every apparatus.

Axillary crutches are far superior to perineal or ischiatic crutches, from the fact that they remove traumatism from the diseased joint, prevent the jar of walking, and permit the limb simply to swing during locomotion, thus exerting a far greater amount of traction than is possible in any walking splint when the foot is placed upon the ground.

A paper on

ABSCESSES IN HIP DISEASE, THEIR PREVENTION, SIGNIFICANCE AND TREATMENT,

by Drs. R. W. Lovett and J. E. Goldthwaite, of Boston, was read by the latter.

The treatment of abscesses of hip disease is a question which has been widely discussed, and one upon which diametrically opposed views have been held. No figures bearing upon the relative value of the treatment have yet been brought forward. The large number of cases reported by the essayists were treated at the Boston Children's Hospital. Of 288 cases reported by Dr. Gibney, the mortality per cent. was only 12 1-2. Billroth following cases after they had left his clinic found a mortality of 31 3-4 per cent. Henter in 86 cases found a mortality of only 27 per cent. In Gazin's series of 80 cases of suppurative hip disease (sent to Berck after they had ceased to improve in Paris Hospitals), only 12 1-2 per cent died.

The operation for abscesses in hip disease is not attended with the risk of septicæmia which is sometimes attributed to it, and it does not prevent amyloid degeneration from taking place. In 43 cases where the present condition of the patient is accurately known, the abscess wound is closed in 20, and one or more sinuses are still open in 23. Of the cases where the sinuses are still open, in five a year has passed since operation, ten are open at the end of two years, seven at the end of three years, and one at the end of four years. In the 20 cases, ten sinuses closed within a year after operation, and six between one and two years. Finally, it may be said that thorough operation is followed in a fair proportion of cases by the speedy closure of the abscesses.

SECOND DAY. — WEDNESDAY, SEPTEMBER 18TH.
MORNING SESSION.

This session was devoted to the reading of short papers upon

THE TREATMENT OF HIP DISEASE,

and papers were read as follows: The Principles of Treatment, by **Dr. N. M. Shaffer**, of New York; The Early Local Treatment, by **Dr. A. Steele**, of St. Louis; The Operative Treatment, by **Dr. De F. Willard**, of Philadelphia.

Dr. John Ridlon, of New York, reported a case of

CONGENITAL DISLOCATION AT THE HIP.

The patient, a female, aged ten and one half years came under his observation February 16, 1888. The right great trochanter was two and one-half inches above Nélaton's line, and it required a blocking under the foot of three inches to make her stand fairly erect, The old pattern of the Taylor extension hip splint was applied, and the leg elevated on an inclined plane. For one year the child did not leave her bed, and no relaxation of the contraction was once permitted; at the end of this time it was possible to locate the head of the femur, which was found to be displaced upwards and forwards, lying almost directly below the anterior iliac spine, and the difference in length of the legs was found to be reduced to one-half inch. A jointed splint was applied February 1, 1889, and the patient was allowed up. The case was interesting on account of the direction of the dislocation. He had been unable to find another such case recorded.

Dr. Bernard Bartow, of Buffalo, contributed a paper on

THE IMMEDIATE DISREGARD TO MALPOSITION OF THE THIGH IN THE TREATMENT OF HIP DISEASE,

in which he called attention to a plan of treatment purely fixative in character which he had employed in the earlier stages of hip-joint disease. This plan consists essentially in having the patient suspend himself by the head in the manner required for the application of the plaster-of-Paris jacket in spondylitis. During this operation the foot of the well limb is made to rest on a block from four to six inches in height, so that the affected limb will by its own weight exert traction upon the muscles about the hip-joint.

The trunk and limb having been encased in stockinet, should then be wrapped in cotton wadding bandages to protect the surface from the sixth or seventh rib to the middle of the leg; over this dressing plaster-of-Paris bandages should be applied in a manner to include the trunk, hip and limp within the limits indicated. Then strips of thin malleable steel should be bent to conform to the contour of the body and limb, and inserted between the bandages on the anterior, lateral and posterior parts of the dressing. As soon as the dressing has become hard, it should be trimmed out on the inner side of the thigh where it passes under the perineum, and all of the edges smoothed to prevent chaffing of the skin. A high shoe and crutches having been provided, the patient may be taught their use with the least possible delay. A splint thus formed will hold the hip-joint in an immovable manner. It will possess sufficient strength to permit of the patient being lifted or carried without causing pain or the fear of painful movements of the joint.

In every instance in which the writer had used this dressing the patient had expressed feelings of relief as soon as the splint had been completed.

AFTERNOON SESSION.

The Association met in the lecture-room of the out-patient building of the Children's Hospital.

Dr. E. G. Brackett, of Boston, read a paper on

AN EXPERIMENTAL STUDY OF DISTRACTION OF THE HIP-JOINT,

in which he said the treatment of this subject consists in the consideration of the anatomical possibility of a distraction, influenced by the counteracting forces met in the living subject. The points involved are the resistance of the bony formation, the influence of atmospheric pressure, and the resistance from ligaments and muscles. In the adult the prominent part of the lower portion of the head of the femur rests in the bottom of the acetabulum which affords a surface nearly horizontal for its support; and traction is therefore mainly suspended in pulling the head down on the surface. When a separation occurs it is shown by a widening at the hips as well as by an elongation of the limb. In children, there is no such interlocking of these two bones, but the axis of the joint is more nearly parallel to the line of the leg, and a separation is indicated by an increase in length of the limb and but slightly by an increase in width between the trochantêrs. The influence of atmospheric pressure was studied on cadaver, but the conclusions were that this force was very slight and unimportant, and the effect of traction on the child's joint was studied experimentally on the cadaver, and it was found that there resulted an increase in length of between 2 and 3.5 millimetres in ordinary positions, and 1.5 millimetres and less in width.

The conclusions are that anatomically distraction is an evident fact. When clinically considered these results are applicable only with the influence of the muscular force in view. Such could come only from tonicity or contraction. The former is not a working force, but rather a condition of repose. A long continued state of the latter is physiologically impossible, for by our repeated and constant stimulation, the muscles become exhausted, and finally remain in a state of quiet, and in this condition allow as much elongation as would be necessitated by the anatomically possible separation. This behavior of the muscles was demonstrated on a case of congenital dislocation. Two subjects under treatment for hip disease, who were favorable for an accurate measurement, were examined for any change in this bony relation, and in both a change of three millimetres was found. The claim was not made for the occurrence of distraction whenever traction was used, nor that it is possible in every case of disease, but it was claimed for a breach of contact of the two surfaces when traction is properly applied under favorable conditions.

Mr. John H. Huddleston, of Boston, read a paper entitled

AN ANALYSIS OF TWENTY-ONE CASES OF HIP DISEASE TREATED BY THE THOMAS SPLINT.

He said the splint had been applied in the Boston Children's Hospital by men, some of whom had seen

Mr. Thomas's clinics, and others who had carefully studied the directions given by Thomas on the hip, knee and ankle. Special malleable iron for the material of the splint had been obtained, and great pains taken to make the appliance really a Thomas splint. On examining the records of both the hospital and the out-patient department, it was found that since 1881, twenty-one cases of hip disease had been treated with this splint. No attempt had been made to choose the cases for the splint, but it had been put on in all stages of the disease and kept on, in some cases, throughout the course of the affection, and in other cases till the interest of the patient demanded a change. Moreover, it had been used not only as a treatment for the disease, but also as a special remedy for some temporary condition of deformity. Cases were seen once a month or oftener and were taken from the ordinary class of out-patient cases. Of the twenty-one cases, satisfactory notes have been obtained in fourteen, and notes sufficient to explain the use and the result of the splint in five more. One patient died shortly after the application of the splint, and one has not been heard from.

Before summing up the results, it may be added that it has been found difficult to fit the splint, and more difficult to keep it in place after fitted. Of the fourteen patients whose histories are long enough to be valuable in estimation of the splint, nine had abscesses; at least nine had elevation of the trochanter above Nélaton's line; eleven had shortening of an inch or more; eight had atrophy of the thigh of more than two inches; five had five degrees or more of adduction; eight had some flexion; six had no motion at the joint; four had motion of only a few degrees; three had a good amount of motion; one had perfect motion; six were brought into the hospital for correction of deformity or relief of pain.

Finally, the character of the results obtained is shown by the table to be in a broad way: good position with little flexion and adduction, but great shortening, great atrophy, and very constant elevation of the trochanter above Nélaton's line, with a remarkable percentage of abscesses.

Following the reading of these papers a large number of orthopedic cases were shown, after which the members of the Association visited the hospital wards.

EVENING SESSION.

The Association met at the Tavern Club, No. 4 Boylston Place, at 8.50 P. M.

Dr. John Ridlon, read a paper on

FIXATION AND TRACTION IN THE TREATMENT OF HIP-JOINT DISEASE.

He said the treatment of inflammation in and about the hip-joint should, in a general way, be governed by the same principles that govern the treatment of inflammation of like character in other portions of the body, and that physiological rest of the inflamed structures is the chief end to be sought. By *physiological rest* he meant relief from the performance of the normal functions. The functions of the hip-joint are motion and the sustaining of weight. Involuntary spasm may give pressure in the same way as does superimposed weight until convalescence is well established, and to counteract the muscular spasm so long as that spasm is in any way harmful. To remove the superincumbent weight, he places the patient in the horizontal position (not necessarily confining him to bed) on a patten with crutches, and a long extension splint. The most effective is obviously the horizontal position; next to this stands the high patten (four to six inches) and crutches, while the most convenient is the long extension splint.

Dr. R. H. Sayre, of New York, read a paper on

EXCISION OF THE HIP-JOINT,

in which he said the *first* question that presented itself, is, whether it is proper to excise this joint under any circumstances, and, *second*, if it is a proper operation, at what time is it best done, and in what manner? He believed ordinary cases of hip-joint disease to be tubercular, that is, tuberculosis is acquired, not inherited; that some additional local influence, such as injury, is necessary to determine the part of the body which is attacked, and that under appropriate mechanical treatment, commenced early in the disease, with good hygienic surroundings, nature in the vast majority of cases is able to effect a cure without excision of the joint. Much valuable time had been lost in the past while hesitating to excise. With the present improved methods of wound-treatment there undoubtedly was a tendency to operate too early, and sometimes too often. In the operation pains should be taken to remove all the diseased tissue, provided the patient is not too weak to endure a prolonged operation, and care should be taken to wound as few vessels as possible, and do the least possible damage to surrounding healthy structures, as the chances of general systemic infection are thus much lessened.

THIRD DAY. — THURSDAY, SEPTEMBER 19TH.
MORNING SESSION.

Dr. G. W. Ryan, of Cincinnati, read a paper entitled

WHEN SHALL TREATMENT BE DISPENSED WITH IN SPONDYLITIS?

The writer believed that much might be said on this point. It was a matter which had a wide interest to every orthopedic surgeon, and was never an easy matter to determine. Little is said about it in orthopedic literature, for the reason probably, that every surgeon believes that each case must be judged individually. He believed also that, as a rule, the orthopedic surgeon kept an apparatus on too long, and that the general surgeon took it off too soon. He had seen many cases of spondylitis in which the appliance had been removed too early, and many others in which he was satisfied that it was kept on too long. He stated that a slight increase in a kyphosis, which is already well-marked, makes a very great change in the gait, the appearance and the growth. The speaker believed that the atrophy was in a measure a test of the efficiency of the treatment. The nearer perfect the treatment the greater the atrophy. He believes that when disease is no longer present, an appliance was a foreign body, and retarded muscular growth and exercise. No general rule could be laid down concerning the time treatment should be dispensed with, but some indications might be pointed out. Spondylitis may be found in two classes of cases. Those who are essentially tuberculous, and those who are not, the disease of course being tuberculous in all. He thought that the type of the patient largely influenced the course of the disease. The general health of the patient reflects in a great degree the stage of the disease. Absence of pain was of little value as efficient support always relieved that. He had often found a compensatory depression beneath the kyphosis indicative of cure, as pointed out by the older surgeons. Time determines little or nothing. Many cases of cervical and lumbar diseases got well without treatment, and with fairly good results. Where the surgeon is satisfied that treatment can be done away with, the case must be carefully handled. The matter requires a great deal of care, and the appliance should be slowly dispensed with. Massage, cold baths, and faradism are of great service at this time.

Dr. A. J. Steele, of St. Louis, read a paper on

A NEW EXERCISE IN THE TREATMENT OF LATERAL CURVATURE OF THE SPINE.

AFTERNOON SESSION.

Dr. W. R. Townsend, of New York, read a paper on

ACUTE ARTHRITIS OF INFANTS,

in which he said that this is essentially an osteomyelitis in infant life, the difference in pathological conditions being largely due to difference in anatomical conditions and relations of the epiphysis to the joint. Various forms of staphylococci have been found in some cases, notably staphylococcus aureus and albus. The symptoms are quite constant; flexion of joint, the production of abscesses involving the joint and constitutional symptoms of pyæmia. In the treatment early and complete evacuation of the inflammatory products is necessary, and heart stimulants and tonics should be given. Most cases occur under one year of age, and in about fifty per centum of cases fatal results occur. He reported seventeen cases, and from his examination of others finds that the joints most affected are the hip, knee, and shoulder.

The following papers were read:

THE TREATMENT BY PORTATIVE APPLIANCES OF UN-UNITED FRACTURE OF THE THIGH,

by **Newton M. Shaffer**, of New York;

OPERATIONS UPON THE SPINE FOR THE RELIEF OF PRESSURE PARALYSIS, WITH REPORT OF A CASE,[2]

by **Drs. Herbert L. Burrell** and **W. N. Bullard**, of Boston;

A CASE OF FUNCTIONAL TORTICOLLIS. PROBABLY DUE TO DEFECTIVE EYESIGHT,

(with exhibition of patient), by **Dr. R. W. Lovett**, of Boston, and

A CASE OF CONGENITAL ABSENCE OF FIVE RIBS WITH RESULTING DEFORMITIES,

by **Dr. Homer Gage**, of Worcester, Mass.

Officers for 1890: *President*, Dr. De F. Willard, of Philadelphia; *Vice-Presidents*, Drs. A. J. Steele, of St. Louis, and A. B. Judson, of New York; *Recording Secretary* and *Treasurer*, Dr. G. W. Ryan, of Cincinnati; *Corresponding Secretary*, Dr. Samuel Ketch, of New York.

On motion the Association adjourned to meet in Philadelphia, third Tuesday in September, 1890.

— "Gum-chewer's cramp" is the latest discovered form of professional neurosis.

THE AMERICAN PEDIATRIC SOCIETY.[1]

The next paper was by **Dr. Dillon Brown**, New York, on

NOISY RESPIRATION,

enumerating the different causes which may give rise to it.

TUBERCULOSIS OF THE TESTIS IN CHILDHOOD,

by **Dr. H. Koplik**, New York.

The case now reported is largely on account of the extreme rarity of the affection. The child was twenty-two months old, and was seen February 14, 1889. Mother was healthy, but the father had died with symptoms indicating phthisis. Two months before coming under observation, swelling of the calf of the left leg occurred. This had opened and the discharge continued. Later the left testicle became enlarged to the size of a hen's egg, not painful. Right testicle normal. The swelling of the left testicle had ruptured and was discharging a liquid looking like pus. Scrappings from the sinus in the testicle showed the tubercle bacillus. There were lymph nodes in both groins and in the neck. The enlarged organ was removed as thoroughly as possible. There was, however, a return of the disease in the cicatrix of the operation wound. This was removed by a second operation. The patient rapidly recovered from the second operation, and there is nothing to warrant a clinical diagnosis of tuberculosis of any other part of the body.

ACUTE SUPPURATIVE PERITONITIS FOLLOWING VULVO-VAGINAL CATARRH,

by **Dr. Francis Huber**, New York.

The patient, seven years of age, had vulvo-vaginal discharge, but did not seem to be very sick. She was suddenly seized with collapse with subnormal temperature. This was followed by pain in the right iliac fossa and vomiting. It was thought that there had been a rupture of the vermiform appendix. The next day the patient seemed better. The pain increased, the pulse became more rapid, and the temperature went up to 100°. The patient was seen by other gentlemen who agreed with the diagnosis. Operation was determined on, and performed June 4. Considerable sero-purulent fluid was found. The appendix, however, was normal. The right fallopian tube was inflamed and thickened, and it had evidently formed the channel by which the infecting substance had gained access to the peritoneal cavity. The abdomen was washed out, and an antiseptic dressing applied. Death occurred twenty hours later from heart failure. The vulvo-vaginal catarrh was supposed to be of specific origin.

SCLEREMA NEONATORUM,

by **Dr. W. P. Northup**, New York.

The case reported was the only one that had been met with in the 7,000 children received at the New York Foundling Institution. February, 1885, two children, twins, five days old, were received at the institution. Both were girls. One was apparently healthy, but the other was extremely weak. The surface of its body was cold and the rectal temperature 96°. The surface of the body was hard, swollen and cold. There was no pitting. Two days after admission, when the thermometer was left in the rectum for five minutes, the index failed to reach the lowest degree marked on the instrument by three-quarters of an inch. The child remained in this condition until the ninth day, when it was pronounced dead. Every organ of the body was thoroughly examined after death, but nothing abnormal could be found. The vessels of the skin were perfectly normal. This affection, although rare in this country, is quite common in Germany and in France. Most of the cases reported have these points in common. The child is one of twins; it is born in mid-winter; it comes from some corner of squallor; it should be jaundiced; it should begin to be hard on the sixth day; and die on the ninth or tenth day. As regards the pathology of the affection, it has been suggested that it is connected with the fat-forming function of the body; stearine and palmatine being formed instead of olein. The former becomes hard at a higher temperature than does the latter.

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[2] See page 405 of the Journal.

[1] Concluded from page 394 of the Journal.

EVENING SESSION.

THE ARTIFICIAL FEEDING OF INFANTS,

by **Dr. Arthur V. Meigs**, Philadelphia.

Cow's milk forms the basis of most of the artificial foods used in civilized countries. While most analyses of cow's milk practically agree, different analyses of human milk differ greatly in regard to the amount of casein and of sugar present. These differences he considered to be due to faulty analyses. Pure cow's milk contains three per cent. or more of casein, while human milk never contains more than one per cent. of casein. He advocated a mixture of diluted milk, cream, sugar of milk and lime water. The method of preparation is as follows: one quart of milk is allowed to stand in a high pitcher for three hours, one pint of this is then slowly poured into another vessel, thus obtaining the upper, rich layer. When the child is to be fed take of this milk, three tablespoonfuls; lime water, two tablespoonfuls; and sugar water, three tablespoonfuls. The sugar water is made by dissolving eighteen drachms of milk sugar in one pint of water. He had used this preparation in private practice and in hospital practice among foundlings.

DISCUSSION.

Dr. L. Emmett Holt, New York, had used this formula with good results. He insisted, however, that attention should be paid, not only to the article fed, but also to the quantity given and the frequency of feeding.

Dr. J. Henry Fruitnight spoke of the dangers attending the use of the nursing-bottle with the long tube, and thought that the nipple should alone be used.

Dr. A. Caille, New York, had been surprised to hear no reference to the importance of sterilizing the milk.

Dr. John A. Jeffries, Boston, said that it was important to recognize the fact that if the milk is to be sterilized it should be done early. Often the milk is sterilized after decomposition has begun and the chemical products are already formed.

Dr. A. V. Meigs, Philadelphia, while he recognized the value of sterilization, did not consider it necessary where the best kind of milk could be secured and among poor people it would be difficult to have it carried out.

A CONTRIBUTION TO THE SUMMER DIARRHŒA OF CHILDREN,

by **Dr. John A. Jeffries**, Boston (by invitation).

The speaker had made cultures from a large number of stools of children with summer diarrhœa, had separated the various bacteria found, and then experimented with these cultures on young kittens kept under the best hygienic conditions. The animals were experimented with in many ways, some were given sterilized milk, some ordinary milk, some the bacteria from solid cultures mixed with minced meat. These latter showed no effect. It was found that a good many of these bacteria produced diseases seemingly identical with the diarrhœa of children. Again, cultures in milk were allowed to grow two days, then the milk was re-steamed on three successive days, so that nothing was present but the products of the growth of the bacteria. This milk was then fed and produced diarrhœa, sometimes running on to a fatal result. The symptoms produced and the post-mortem appearance found seemed to be identical with those of the disease in children. These experiments led him to believe that the summer diarrhœas of children were due to the ingestion of the products of bacterial growth with the food.

CASE OF DIAPHRAGMATIC HERNIA WITH OPERATION,

by **Dr. J. O'Dwyer**, New York.

The patient, A. B., three and one-half years of age, was taken sick November 20, 1888. No previous history could be obtained. There was dyspnœa, temperature of 105° and no movement of the bowel for ten days. There was flatness on percussion over the left chest with absence of the respiratory sounds. The case was considered to be one of empyema and a needle was introduced but no fluid escaped. Eight days later the bowels having been freely moved, the temperature fell to normal. From this time until January 15, 1889, when he was first seen by the speaker, he had several similar attacks, the temperature ranging from 102° to 106°. Each of these attacks corresponded with an attack of constipation and relief was afforded by a cathartic. The case was still considered to be one of empyema and a needle was again introduced. Nothing being obtained a long trocar was inserted with the same result. The distal end entered at least three inches and could be moved freely. An opening was then made in the sixth interspace and the finger inserted. The patient gave a slight cough and forced out six inches of small intestine through the opening. This was replaced with difficulty and the wound closed.

It was concluded that an opening lower down to determine the position of the hernia would not increase the danger. The following day an incision was made in the tenth intercostal space and a portion of the ninth and tenth ribs excised. This gave ample room. The rent in the diaphragm was at once apparent. The intestines were returned to the abdomen with difficulty as there did not appear to be room for them. The opening in the diaphragm was closed with six strong sutures. When the operation was completed the force below was so great that the diaphragm was forced high into the chest. The wound in the chest wall was then closed. Death occurred suddenly six hours after the operation. At the autopsy the edges of the wound were found separated. The specimens were exhibited, the hernia was in all probability congenital.

PROLAPSUS RECTI, DUE TO A LARGE STONE IN THE BLADDER,

by **Dr. A. Caille**, New York.

The child, a girl three years of age, had for a long time suffered with prolapse of the rectum. At the time of the examination, there was a prolapse of two inches of the bowel. At times, seven inches protruded. Careful examination showed a large stone in the bladder. This was removed by the supra-pubic operation. During convalescence, the rectum came down once, but not since.

SOME PRACTICAL POINTS IN THE DIAGNOSIS OF MALARIA IN CHILDREN,

by Dr. H. N. Vineberg, New York.

The paper was based upon a study of eighty cases of malaria occurring in early life. The symptoms of the affection are, chill, fever, sweating, enlargement of the spleen, and the presence of hæmatozoa.

Chill is rare in young children, and may be replaced by convulsions, which may be repeated several times in a few hours. There is one disease, in particular, which makes a child very prone to convulsions, that is, rickets. This is true of the mild as well as of the severe forms of the affection.

Fever is a most constant symptom. It is said to be distinguished from the fever of other affections by its violence and rapid disappearance. Sudden onset of high temperature may also occur in other affections.

The *sweating* stage in children is usually imperfect, both in degree and duration.

The *spleen* enlarges more rapidly and to a greater degree in children than in adults. In early life, even small doses of the poison are sufficient to cause an increase in the size. While, at first, it decreases in size with the subsidence of the paroxysm, yet after two or three paroxysms, it remains enlarged in the intermission. Splenic enlargement is, however, not a pathognomonic sign of malaria. All of the acute infectious diseases are attended with swelling of the spleen.

Hæmatozoa. The diagnostic importance of this sign is still in doubt, although the weight of evidence is in favor of their pathognomonic value. They appear to be present only in the grave types. The author had sought for them in fifteen cases of acute malarial poisoning, but had not found them.

The diseases most likely to be mistaken for malaria are acute gastritis and typhoid fever. Swelling of the spleen is, however, absent in acute gastritis, although present in typhoid fever. Some lay great store on the negative value of herpes labialis. While common in acute malaria, it is said to be absent in typhoid fever. The temperature range in typhoid fever is different from that of malaria. The appearance of a roseola rash in typhoid fever is pathognomonic; but for this we have to wait twelve days. If still in doubt, the blood should be examined. In such cases, quinine is of value as a therapeutic test.

In the cases of chronic malaria, enlargement of the spleen becomes of great importance as a diagnostic sign.

DISCUSSION.

Dr. Charles Warrington Earle, Chicago, asked what was the best method of giving quinine to children. His own habit is to give the whole daily amount needed in one dose, or two doses given close together.

Dr. A. Seibert, New York, referred to the value of a greenish hue of the coating of the tongue in the diagnosis of malaria.

SPASTIC PARAPLEGIA.

by Dr. Thomas S. Latimer, Baltimore.

He reported two cases of this affection occurring in a brother and sister; the former was twenty years old, the latter eighteen. In both cases the disease was noted at an early age. There are three other children in the family who show no signs of the disease. So far as known this is the only instance of the disease affecting two members of the same family. In the case of the girl, some benefit in the gait had been affected by division of the adductor muscles.

A STUDY OF SOME OF THE BACTERIA FOUND IN THE DEJECTA OF INFANTS AFFECTED WITH SUMMER DIARRHŒA

(second communication), by William D. Booker, M.D., Baltimore, Md.

The first communication upon this subject was read before the Section of Diseases of Children of the ninth International Medical Congress, and contained a description of eighteen varieties of bacteria isolated from the fæces of sixteen children affected with summer diarrhœa.

This article is a continuation of the first and embraces subsequent work, containing a description of seventeen varieties of bacteria isolated from the fæces of fourteen children affected with summer diarrhœa. Bacteria have thus been isolated from the fæces of thirty infants affected with summer diarrhœa, eleven of whom had cholera infantum, fourteen catarrhal enteritis and five dysentery. With the exception of bacterium lactis ærogenes and bacterium coli commune, the two constant milk-fæces bacteria, no species appears with much constancy taking the cases as a whole.

If the different forms of diarrhœa are considered separately, in the cases classed under the head of cholera infantum, one group of bacteria, the proteus group, has been found in seven of the eleven cases examined. In the four cases in which no member of this group was found agar was used exclusively as the separating medium in three cases and in the other case a number of cultures were lost before being identified.

During the past summer, 1889, bacteria were isolated from the fæces of thirteen children, eight of whom had cholera infantum and five catarrhal enteritis. While the differentiation of all the cultures in these cases has not been sufficiently worked out to incorporate in this report, the proteus bacteria have been identified with certainty in the eight cases of cholera infantum.

The addition of these eight cases makes a total of nineteen cases of cholera infantum in which bacteria have been isolated from the fæces, and in fifteen of the cases one or more members of the proteus group of bacteria have been found.

The prominent symptoms of the cases of cholera infantum in which the proteus bacteria were found, were drowsiness, stupor, emaciation or great reduction in flesh, more or less collapse, frequent vomiting and purging, with watery and generally offensive stools.

No variety of bacteria appeared to be especially associated with the cases of catarrhal enteritis or dysentery. The fæces in catarrhal enteritis often contained an enormous quantity of bacteria, chiefly varieties of colon bacteria and bacterium lactis ærogenes with a number of inconstant varieties.

In conclusion, it must be understood that this work is too incomplete to admit of positive conclusions, and as referring to the examination of but a limited number of cases, in which not even all the varieties of bacteria contained in the fæces that can be cultivated on our present nutritive media are supposed to have been separated, and those separated have been but imperfectly studied.

TWO YEARS' EXPERIENCE IN THE MECHANICAL TREATMENT OF THE GASTRO–INTESTINAL DISORDERS IN INFANTS,

by Dr. A. Seibert, New York.

By the term mechanical treatment he had reference to the washing out of the stomach and the large bowel. After the cause giving rise to these disorders has entered the bowel the first thing to do is to get rid of it as soon as possible. In many cases if the stomach and bowels are emptied the case is cured. Since September, 1887, he had treated all cases of gastro-intestinal troubles in children by these measures. In no case has the child been made worse by this treatment and even in those cases ending fatally, the children were relieved temporarily. In all cases of diarrhœa whether moderate or severe the bowel was washed out two or three times a day. The youngest patient thus treated was a baby one and one-half days old, which vomited everything put into its stomach. One washing out was followed by complete relief. Collapse is one of the strongest indications for stomach washing. The apparatus used consists simply of a soft rubber catheter attached to a rubber tube by a glass connection. In most of the cases no medicament was added to the water.

The following officers were elected:

President, Dr. J. Lewis Smith, New York; *First Vice-President*, Dr. A. V. Meigs, Philadelphia; *Second Vice-President*, Dr. F. Forcheimer, Cincinnati; *Secretary*, Dr. W. D. Booker, Baltimore; *Recorder*, Dr. Wm. Perry Watson, Jersey City; *Treasurer*, Dr. Charles Warrington Earle, Chicago; *Additional Member of Council*, Dr. L. Emmet Holt, New York.

The following new members were elected: Drs. J. A. Jeffries, Boston, H. Jackson, Boston, C. Townsend, Boston and Henri LaFleur, Baltimore.

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BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

Annual Meeting, Monday, April 1st, at the Medical Library, 19 Boylston Place. Dr. E. D. Spear in the chair.

Dr. Hasket Derby read a paper on

SOME CAUSES OF PREVENTABLE BLINDNESS.[1]

Dr. Ayer asked what the dangers were, if any, in the use of the two per cent. solution of nitrate of silver, and if the reader would advise its use as a routine treatment.

Dr. Derby replied that there was no danger in the use of the silver solution — it might cause a slight irritation, but would not injure the cornea. He would not advise its use in every case, but should use it whenever there were any suspicions in regard to the matter.

Dr. Ayer asked what precautions the reader would take in a case of ophthalmia appearing in one eye to prevent it spreading to the other.

Dr. Derby: I rarely take any except to enjoin strict cleanliness. The treatment by occlusion, as advised by some, is very difficult to carry out; if ophthalmia occurs in one eye it usually will in the other.

Dr. F. M. Briggs reported

A CASE OF PAPILLOMATOUS URETHRITIS.[2]

Dr. Green asked what the reader would advise in case of persistent recurrence of the growth.

Dr. Briggs replied that he would use a solution of nitrate of silver, ten grains to the ounce, increasing to forty or fifty grains to the ounce if required, but said that it had been stated that when these growths are well removed they do not tend to recur.

Dr. Fitz asked if the reader found any record of these papillomatous growths occurring without any urethritis.

Dr. Briggs replied that Oberläuder, of Dresden, says that they may occur without any previous history of gonorrhœa, although as a rule they follow a case of gonorrhœa which has continued for some time.

Dr. Fitz said that they practically belonged to the same class as anal papillomata.

Dr. Spear asked if the operation of removal was painful.

Dr. Briggs replied that he previously injected a four per cent. solution of cocaine and the operation was not at all painful.

Recent Literature.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-Book Specially Adapted for Students of Pharmacy and Medicine. By W. Simon, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons; Professor of Chemistry and Analytical Chemistry in the Maryland College of Pharmacy, Baltimore, Md. Second edition. Philadelphia: Lea Brothers & Co. 1888.

Dr. Simon has, we think, made a great mistake in trying to crowd so many subjects into an octavo of 460 pages. He has included in this volume the principles of theoretical chemistry, the descriptive chemistry of the elements, organic, analytical and physiological chemistry. It is a natural result that some parts of the book are very unsatisfactory. The section on physiological chemistry, especially, is far from meeting the requirements of the medical student. The rest of the book is better; still, it is evident throughout that the author has been obliged to omit much that is important in order to include analytical and physiological chemistry, each of which demand a separate volume. For example, drinking water and disinfection are topics which very properly find a place in a work on chemistry which has been prepared for the use of students of medicine. Dr. Simon has given less than a page to each. Many other similar examples might be given.

So far as it goes, however, the text is accurate and, doubtless, many will find the book to be just what they want for use in connection with a more extended lecture and laboratory course. The paper and printing are good, while the colored plates illustrating precipitates in various reactions form a novel feature which will doubtless be appreciated by the student.

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[1] See page 401 of the Journal.

[2] See page 403 of the Journal.

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THE RECIPROCAL RELATIONS OF THE NURSE AND THE PHYSICIAN.

The nurse has a sphere of responsibility no less important than the doctor. Of course, the interests of the two are identical. The nurse is largely dependent for her success on the intelligent help of the doctor, and the latter is no less dependent on his nurse. Blundering and incompetence on the part of the one are as disastrous as blundering and incompetence on the part of the other. The efforts of the best physician will be likely to be thwarted if he has a careless and unfaithful nurse who neglects to feed the patient at the proper times, or give the medicines as prescribed; on the other hand, the most skilful nurse will be hampered and handicapped if the physician's diagnosis and treatment are wrong.

In many respects the nurse's lot is harder than that of the doctor. He makes his daily visit to the bed of suffering, but that visit may be a short one, and he is soon out again in the open air; has solace and diversion in the variety of his cases; can enter his study and contemplate with some satisfaction the scientific aspect of a very trying and painful case. The nurse (this is especially applicable to private practice) is obliged to be with the patient constantly, and this may be, to a sensitive, sympathizing nature, the greatest strain conceivable. There is nothing more admirable than the fortitude, devotion, patience and endurance manifested by many nurses under such circumstances.

The nurse should be loyal to the attending physician (if indeed he be worthy of her confidence), and not allow herself, by word or look, to impair the confidence of others in him, though he be not her favorite physician; he is there not by her choice, but by that of the family, and any attempt to excite prejudice against him in favor of another (who may really be far less worthy) must be characterized as mean and mischievous meddling, if not dishonorable intriguing.

There should be earnest coöperation between the physician and the nurse. As far as the latter, by her better opportunities to become acquainted with the idiosyncrasies of the patient and the peculiarities of the case, can give the physician light on the case, she will not hesitate to do so, and the physician will deem himself fortunate in obtaining such help in the management of the patient. Thus the physician may have to depend on the nurse for information as to the likes and dislikes of the patient for articles of food, and as to the state of the bowels, the quality of the stools, the quantity and general character of the urine, the amount of sleep, etc.

It is needless to say that a nurse is not fitted for her place who has not had some preliminary instruction and training in those branches which qualify the physician for *his* career. While nurses do not need the extensive knowledge of anatomy, physiology and pathology which the physician requires, some general knowledge of those subjects they certainly need. Their occupation compels them to be constantly hearing medical terms, and, although they do not expect to be doctors, they cannot help a growing sympathy with the practical details of a physician's life, and their ambition to achieve a genuine success, as well as their interest in medical subjects, will continually prompt them to consult medical books, and even read with avidity the medical journals.

Though surgery can never be their province, yet that part of minor surgery which pertains to surgical dressings and bandaging does belong to them, and must be diligently cultivated. Some knowledge of obstetrics and materia medica is equally necessary. With regard to drugs, the nurse needs some acquaintance with their actions and uses. Without such knowledge she cannot intelligently coöperate with the physician. The day has gone by when physicians could afford to keep their nurses in utter ignorance of what medicines they were administering, and what effect they desired to obtain from such medicines. And now, the physician who seeks the intelligent coöperation of the educated nurse (of course, there are nurses who are too ignorant to be any thing but machines, destined automatically to carry out directions) will be the most successful in his practice. We do not mean that he should *consult* with his nurse; we only insist that the latter should know the nature of the drugs which she is administering, what they are designed to effect, and how to meet any untoward and unexpected, though possible symptoms which may arise in consequence of possible idiosyncrasies. Thus, the watchful and instructed nurse, seeing collapse and cyanosis attending the administration of that now common antipyretic, acetanilide, knows that this is a rare but possible result, and will at once suspend the treatment and notify the physician. Instances of a similar nature might easily be multiplied.

In their relations to their patients, both nurse and physician will do their utmost to relieve them and help them to get well, whether they be rich or poor. They may decline the service, but if they undertake the responsibility of caring for the poor man, they must feel that he has the same claim on them, to the extent of their ability, as the rich man. This is a truth which is applicable to both hospital and private practice.

There is another point concerning which enough has not been said in text-books of nursing; it has an application to the physician as well as the nurse. Both should acquire, and the sooner the better, a delicacy and a tact both in addressing and in handling, lifting and moving patients, which are especially appreciated by those that are excessively nervous, or are suffering from fractured limbs, or rheumatic affections which make every movement painful. A brusk manner repels and depresses the nervous invalid, and carelessness and roughness of manipulation when handling broken limbs or rheumatic joints gives the impression that the doctor or nurse is unfeeling, or else clumsy, awkward and incompetent.

In hip-joint disease and in fracture of the neck of the thigh in old people, often the least movement of the trunk, as well as of the fractured or diseased bone, is torture. And yet, it may be necessary many times a day to change the position of these patients to prevent bed-sores, or to place them on the bed-pan. The doctor or nurse that shows the most tact and gentleness in the management of these truly trying cases will be likely to be most successful in the care of patients generally.

To some readers some of these statements may seem trite or mere truisms, but they are truths which will bear repetition, and they are not too trite to be dwelt on afresh from time to time.

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THE SYSTEM OF CORONERS IN NEW YORK.

AT a meeting of the Society of Medical Jurisprudence and State Medicine held in New York October 15, Charles Kitchell, Esq., read a paper entitled "Observations on the Law Relating to Coroners," in which he made some very severe but entirely just strictures on the present system of coroners in the State, and particularly the City of New York. He gave a sketch of the history of the laws and the evils incident to them; the present system having been brought to this country almost intact from England where it had been in operation since before the days of Queen Elizabeth. He then cited various cases many of which had come directly under his notice, where coroners had overstepped the bounds of propriety and law alike and had inquired into and taken charge of cases entirely beyond their jurisdiction. In conclusion he strongly advocated a complete revolutionizing of the system.

Those present were in entire sympathy with the reader of the paper, and, in the discussion which followed it, many important cases were cited in which the inability of this class of politicians to properly perform the duties of their position was shown in the clearest manner.

One of the most flagrant of these was that of a man, who, on the 6th of the present month, was taken to Bellevue Hospital with a fractured skull. He was properly treated by the surgeons in charge but died the following day. The coroner and his deputy then made an autopsy, with the astonishing result that a death certificate was filed to the effect that the man came to his death from carbolic acid poisoning. Another post-mortem examination was requested and held at the instance of Dr. Dunham, house-surgeon at Bellevue, at which it was conclusively shown that the cause of death was fracture of the skull. Yet at the inquest a few days afterwards the intelligent jury, in opposition to the testimony of several surgeons, decided that the man died from the effects of a dose of carbolic acid.

As an instance of the sensible questions sometimes asked by coroners, the following were stated to have been actually put to witnesses by Coroner Levy at the inquest on Bishop, the mind-reader: "How can any one tell that a post-mortem examination has been made before death?" and "Is *rigor mortis* a sure sign of death?"

As a result of the discussion, the President, Dr. Landon Carter Gray, was empowered to appoint a committee of nine, consisting of five physicians and four lawyers, to draft a bill which, after approval by the Society, shall be introduced at the next session of the Legislature. The object is to secure the repeal of the present laws relating to the subject, and substitute for them an act similar to that which has proved so efficient in Massachusetts; but the attainment of this object has been defeated in the past and is likely to meet with serious impediments in the future.

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MEDICAL NOTES.

— President Ferdinand Levy, of the Board of Coroners, of New York, whose relations with the medical profession have been at times a bit strained, has expressed himself with some heat, because of the action of the Society of Medical Jurisprudence on October 15th in appointing a committee to draft a law regulating the duties of coroners. The real object of the Society of Medical Jurisprudence, he is reported as saying, is to abolish the coroner's office in order to provide some of the physicians belonging to it with places as medical examiners under the proposed new law.

— Pittsburgh, Pa , is to have a United States Marine Hospital. The plans have already been mapped out and a site is to be secured in a short time in the suburbs, most likely in the East End. The Government at present holds the deed for a plot of ground on Ellsworth Avenue, near Bellefonte Street, and this property will be sold to provide funds. It consists of a lot 300 by 400 feet, which is worth, at a low estimate, $30,000. It is proposed to sell this ground, and with the proceeds purchase two or three acres of ground worth about half the sum. The remaining $15,000, together with $7,000 lying in the Treasury at Washington, being part of the proceeds of the old Marine Hospital sale, will be used on the building.

— Dr. Lauder Brunton is about to pay a three months' visit to India, as the guest of the Nizam's Government, for the purpose of testing the results of the Hyderabad Chloroform Commission.

— The Trustees of the Jefferson Medical College, Philadelphia, Pa., have purchased four properties on Walnut Street above Tenth, and intend erecting thereon an addition to the college and hospital.

— The Supreme Court of Iowa has just rendered an important decision in the case of the State of Iowa *vs.* Sidney Mosher, appellant, from the Cherokee District Court, sustaining in the most sweeping manner the Medical Practice Act passed by the Twenty-first General Assembly; affirming the decision of Judge C. H. Lewis of the lower court. Mosher is an itinerant physician, who failed to secure from the State Board of Medical Examiners a certificate of fitness to practice, and who attempted to practice without such warrant.

— The Union Pacific hospital fund is not in a healthy condition. When the hospital was established the assessment was placed at forty cents per month for each employee. This resulted in a surplus, and in 1884 the assessment was reduced to twenty-five cents, which has been retained up to the present time. The change has not only wiped out the surplus, according to the statements of the officials, but has also incurred an additional indebtedness of $35,000. In view of this, General Manager Kimball has issued a circular announcing the restoration of the forty cent assessment.

— The Council of the University of the City of New York recently discussed the law passed last June by the Legislature providing for the preliminary education of medical students. The council were unanimously of the opinion that the law, though being right in spirit, was a blundering one for actual working, as it made a decided hardship to be encountered by many students coming to the university from foreign countries and from other States.

The council finally unanimously requested the law committee, consisting of William Allen Butler, Judge Van Brunt, and John E. Parsons, to consider the question and to formulate suggestions of such amendments as were necessary to obviate the difficulty and to report at the next meeting.

— A rather unusual bill in equity was filed in the Court of Common Pleas in Harrisburg, Penn., recently. Dr. W. M. Frost, the complainant, sets forth in the bill that he was a physician in good standing in Baltimore, where he had a good practice, and held also the chair of diseases of children in the Baltimore Polyclinic and Post-Graduate Medical College; that during last May he came to Harrisburg on a visit to his parents, and while here met Dr. John L. Seitz, of Ridge Avenue; that the latter stated he was going to remove permanently to Columbus, O., and would not return to Harrisburg to practice medicine; that the complainant entered into an agreement for the purchase of Dr. Seitz's practice; that the consideration was $50, half of which was paid in cash and the other half by a note payable in ninety days.

Dr. Frost further states that he abandoned his practice in Baltimore and came to Harrisburg in June and immediately began practicing medicine in the families that Dr. Seitz had introduced and transferred to him. Dr. Seitz returned from Columbus in August and again began the practice of his profession in the vicinity of his former office. Dr. Frost says he would not have abandoned his Baltimore practice if Seitz had not made the agreement in question and that he had suffered loss. October 14 is fixed by the court as the time for hearing the motion to continue the preliminary injunction.

BOSTON AND NEW ENGLAND.

— Several cases of small-pox have recently occurred in an Italian family at the North End, and early this week another case was discovered in the same locality. All the patients were removed to the hospital on Canterbury Street.

— Dr. Eli L. Chase, of Brockton, was assaulted recently by a Nova Scotia woman whose child he had attended for empyema. An operation which he had performed had failed to cure the child, and the mother was apparently rendered insane by her loss. Dr. Chase's injuries, though severe, are said not to be dangerous.

— It is said that the action of the Fall River Hospital trustees, in deciding to contest the will of Mrs. Sarah D. Harris, has given offence to some benevolently inclined persons, and in two instances, at least, the matter has been the cause of clauses being eliminated from wills, which provided for legacies of several thousand dollars to that institution.

— The Massachusetts State Board of Health gave a hearing recently in regard to the plan offered by the town of Marlboro for disposing of its sewage. Dr. Walcott presided; the town of Marlboro was represented by the Board of Selectmen; Commissioners Robert Grant and Thomas F. Doherty of the Boston Water Board, and City Engineer Jackson were present in the interest of Boston. The Selectmen presented a plan for disposing of the town's sewage, and City Engineer Jackson thought it would not affect Boston's water supply; but after some consideration it was decided to have the engineer make a thorough investigation.

— Dr. Bancroft, senior, of Concord, N. H., formerly superintendent of the State Insane Asylum, was recently stricken with paralysis while conducting the meeting, in Boston, of the New England Psychological Society, of which he is president; towards its close he noticed that his left side was becoming gradually disabled. With a singular fortitude under the circumstances, he continued his duties as presiding officer, rising to make some concluding remarks, though leaning heavily against the table for support, and even putting the motion to adjourn after some of his associates had assisted him into his chair. It will be seen from this that he retained his consciousness, and, indeed, there has been no lapse of mental clearness from the beginning. We are happy to note that Dr. Bancroft has been steadily improving, and the anxiety of his friends is becoming relieved.

— The New Haven Board of Health at a recent meeting listened to the charges made by Health Officer Wright, that three physicians had failed to notify the Board of Health of cases of contagious diseases that had come under their charge. Dr. Hunt and Dr. Rawling had attended at different times the children of Joseph Capuro, who had died of diphtheria. Dr. Skiff had attended a Crosby child sick with diphtheritic croup. Dr. Lindsley of the State Board of Health, in speaking for an enforcement of the ordinance that was violated, said that for more than a year he has been working to establish proper health regulations in the towns and cities throughout the State. He had just come from Stratford. Diphtheria had raged in the Home for Children, fifteen out of thirty had been afflicted, but by isolation the spread had been prevented. The larger towns well observe the regulations. In contagious diseases three things are necessary to prevent spread of the disease, notification, isolation and disinfection. Notification should be as prompt as a fire alarm. He had called at the meeting for the express purpose of urging the enforcement of the law. Physicians should be prosecuted for violating the ordinances.

A motion was passed to report the violations of the ordinance by Dr. Amos Hunt and Dr. Charles Rawling in the case of the Capuro children, and by Dr. Paul Skiff in the case at Union Street.

NEW YORK.

ELECTRICAL WIRES.

— The city has been in darkness at night for the past week, so far as the electric street lights were concerned. Immediately after the order for the removal of all dangerous wires was issued by the Board of Electrical Control, at the instance of the Mayor, the companies supplying these lights secured injunctions preventing any interference with their wires, and since then they have been engaged in making a thorough overhauling of the latter, so as to make them as safe as possible; all currents in the meanwhile being shut off. Under these circumstances it was supposed that the Board of Health might perhaps have the power to remove any wires dangerous to life; but the corporation counsel, being consulted on this point, announced it as his opinion that the Board of Electrical Control has exclusive power in the premises. At the same time, the Health Board has sent a report to Mayor Grant recommending that continuous currents above 700 volts, and alternating currents above 250 volts, be forbidden until better means of safety have been provided. The Park Commissioners have also passed a resolution which will have the effect of banishing the high-tension wires if the injunctions now in force are dissolved.

Miscellany.

WAKEFULNESS IN NEURASTHENIA.

A wide range of opinion on the management of this condition found expression at a recent meeting of the Epidemiological Association; and the *New York Medical Journal* thus sums up the evidence:

"The use of drugs, with the exception of sulphonal, perhaps, did not find much favor with the members. Some of them had found that their patients of this class slept when they were at the seaside, while others recommended the Colorado atmosphere. Some patients had been found to be able to sleep at sea, but not on land. The weight of evidence seemed to favor the resort to mountain air for patients who were anæmic, with a presumption in favor of sea air for those who were plethoric. Dr. Solly, of Colorado Springs, has found that a large proportion of anæmic neurasthenics find sleep on the mountain heights, but this cannot be said of the entire class. It is not improbable that other conditions besides those of climate enter into the account where the patient travels from our Eastern cities to the Rocky Mountains in pursuit of sleep. The jaded matron leaves the worries of the household, and the business man, broken down by the rush of daily cares, finds many things changed besides the atmosphere among the far Western altitudes. Still, as a rule, the climate gets all the praise, when an improvement takes place. Business men from the East report a larger percentage of recoveries than the matrons, however, probably because fewer of their anxieties can follow them. Improvement in the assimilation of food, it should not be forgotten, goes a great way toward sleep-production in those who are affected with derangement of the nervous system; and this is one of the frequent accompaniments of any change of scene and environment. Not that there is always any marked increase of appetite or in the amount of food taken, but there is an appropriation of the food by the nervous centres, to their consequent strengthening. It is often a prominent feature in neurasthenia that the food may be taken in and digested fairly well, but stops short somewhere in its distribution to the tissues and is largely wasted. Ordinarily, when this waste ceases there is a corresponding abatement of wakefulness and other neurotic symptoms."

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MEDICAL RESPONSIBILITY.

Big Bob Sattoo, the "tenanimous" or medicine man of the Swinomish Indians in Washington Ter., was lately killed by four Indians, a committee of the tribe appointed for that purpose. His offense was that, while responsible, by virtue of his office, for the health of the tribe, he had permitted, or had not prevented, an epidemic which had prevailed among them for some time. The agent had notice of the purpose to dispatch Big Bob for his delinquency, but, not believing that the intention would be carried into effect, took no measures to protect him. The men who killed the tenanimous have been arrested and will be tried for murder at Seattle. This affair recalls to the *Worcester Spy* an earlier case like it in some respects, in which Judge Roger S. Greene, then a justice of the Supreme Court of the territory, made a precedent, which may be of some service to the homicides now awaiting trial. In that case a medicine man, who had a grudge against a member of his tribe, openly boasted that he had made this man's wife sick and would cause her death. The woman was very ill and seemed likely to die. The husband begged the medicine man to spare her, but he was obdurate and exulted in his revenge, declaring that the woman must die, and that nothing could induce him to relinquish his purpose of putting her to death. The husband then killed the medicine man and was tried for murder by Judge Greene and a jury. The facts were easily proved, and Judge Greene charged the jury in effect that if the husband believed that the medicine man could and did cause his wife's sickness, and could and would cause her death, and that the only way to save her life was to kill the man who was killing her, and if the evidence proved this belief to the satisfaction of the jury, and if the jury were further convinced that this belief was reasonable for the defendant, in view of his condition and associations, and the common opinion of his people, then the homicide was justifiable, as done in defense of his wife, whom he was bound to protect, and the verdict must be "not guilty." Under these instructions the man was acquitted. In the present case it does not appear that the medicine man avowed his responsibility for the epidemic prevailing among his people, or that he was even suspected of malice, so that the precedent does not precisely apply. Big Bob indeed seems to have been killed not in defence, but as a punishment for neglect of duty, and if it should so appear on the trial, the case would be clearly distinguishable in principle from the former. Our contemporary thinks that if doctors in civilized communities were held to so strict responsibility as these Indians exact of their medicine man, their profession would not probably be crowded.

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IS FRUIT A MEDIUM FOR CARRYING INFECTION?

This interesting and important question came up before one of the English courts recently, according to a report in the *Lancet*. It involved the proper interpretation of Section 126 of the Public Health Act (1875). The section imposes a penalty on exposure of infected persons and things, such penalty being incurred by any person who "gives, lends, sells, transmits, or exposes, without previous disinfection, any bedding, clothing, rags, or other things which have been exposed to infection"; and in pursuance of this provision the rural sanitary authority of Maidstone summoned a parent whose children were alleged, whilst affected with scarlet fever in its desquamative stage, to have been engaged in an orchard gathering currants, which were subsequently transmitted to London. Mr. Butterfield was present as medical witness on behalf of the authority, but the details of the case were not gone into, on the ground, taken by the magistrates, that it was very doubtful whether fruit was so far *ejusdem generis* with the other articles named in the section as to be properly included in the term "other things." On behalf of the sanitary authority it was contended that this term included everything in the "wide, wide world" that could be shown to be capable of conveying the infection; but the magistrates evidently felt that, even with the aid of expert medical evidence, they could not undertake to decide whether fruit carries infection or not; and although they showed their sympathy with the sanitary authority by refusing to allow the defendant's costs and by stating that cases of this kind should be brought under the notice of the Legislature, yet they decided that they had no jurisdiction.

The point deserves to be carefully borne in mind by medical officers of health and others in cases of scarlatina or other diseases having an obscure origin. The *Lancet* recalls one instance in which the matter has come under any detailed investigation, and in the brief account of it given in the *Practitioner* (July, 1883), it is admitted that whilst "the employment as strawberry gatherers of persons in the desquamative stage of scarlet fever" came under suspicion, yet the case was complicated by the circumstance that those who consumed the strawberries and who subsequently contracted scarlatina had mixed the fruit with a cream which could not be exonerated from a share in the suspicion as to the source of the infection.

It is well-known that Italian fruit peddlers in our large cities on this side of the water are in the habit of storing fruit, for instance, hanging bunches of bananas to ripen in the small rooms occupied by them as domiciles, and cases have been known when such fruit has been peddled direct from a room in which were lying one or more persons, dead or dying from diphtheria. The subject is one deserving investigation and action by health authorities.

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SALOL IN GASTRO-INTESTINAL DERANGEMENTS OF CHILDHOOD.

Dr. Carr writes on the above subject in the *Archives of Pediatrics*, for September. In his own experience the drug was used in all the disorders of the stomach and intestine common to children, but with the most success in the cases of acute gastroenteritis caused by improper diet or from temperature changes.

The dose and the mode of administration vary somewhat in different cases; the preference being to give the salol alone unless there is some particular reason for combining it with another agent. If the symptoms are those of acute gastro-enteritis with the vomiting of milk, or of other food, and the movements from the bowels are ill-smelling, loose, and quite frequent, the administration of salol, while maintaining perfect rest of the stomach and bowels, will be all that is required. Should the vomited material contain bile and the stools have a lumpy, clay-like appearance or be streaked with bile, the addition of a small quantity of calomel or of mercury and chalk will bring about a quicker relief. This may be explained, partially, by the effect of the mercurial on the obstructed ducts of the liver and pancreas.

When the movements of the bowels become frequent and the discharges serous, the effect of the salol, besides the neutralization of the disagreeable odor, seems to be almost negative. It is seldom that the watery motions are lessened by the salol unless given in combination with opium or bismuth.

In dysentery and severe colitis salol exerts very little control on the tenesmus and bloody passages.

The dose of salol will depend much upon the requirements of the case.

For children under six months one-half grain every two hours for three or four doses will be found sufficient; between the ages of six and eighteen months half a grain to a grain and a half; at two years a grain and a half to two grains will usually be efficacious. The drug is best dispensed combined with some inert powder. Children take it readily if it is placed on the tongue or in a spoon. It never, so far as the writer is aware, causes toxic symptoms or any of the irritation of salicylic acid.

Abstinence from food that would continue the irritation of the stomach is of the same importance in the employment of salol as in the treatment of all disorders of digestion in children.

The conclusions drawn after the use of salol indicate that it is an easily administered, safe drug in the first stage of acute gastro-enteritis in children, and in the more chronic forms of entero-colitis, accompanied by slimy, bad-smelling evacuations. In the acute condition it is necessary to keep the stomach at rest and administer two or three doses of salol within five or six hours. For the more chronic state of catarrh, it is best given in somewhat larger doses before meals. In frequent serous discharges and in colitis the salol does not produce the same good results as in the cases mentioned above, and its effect is uncertain, not being so rapid or so sure as an opiate.

In dysenteric disorders it cannot be relied on.

It seems, then, that salol acts best in morbid conditions due to fermentation and decomposition in the stomach and upper bowel, and that it diminishes in power as it passes through the large intestine.

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MEDICAL SUCCESS IN THE FACE OF DIFFICULTIES.

Sir Andrew Clark, from the summit of English professional success, has been reviewing the way which led him; and his reflections, as contained in an address made by him on the occasion of the presentation to him of his portrait by the medical and surgical staff of the London Hospital a few weeks since, cannot fail of interest for all medical readers.

He was born in Scotland, and received his early education at Aberdeen. He went to London at the end of the year 1853 to study pathology, but with no intention whatever of engaging in the practice of medicine. He says he had never seen his parents, for they died in his infancy; he had never lived under the roof of a relative; he had only one acquaintance; he had no introductions, and he was in such poor health that, according to a physician whom he consulted at the time, his expectation of life was only one year. On the other hand, he tells us that he had some advantages by way of counterbalance. These were a small patrimony, large love of work, and perfect self-dependence, which prevented him from ever asking favors of any man. "I had the habit of dealing with every day of my life as if it were my whole life," he says. "I was contented and happy over what the day brought me. I had no ambition of any kind, and I hated schemes and intrigues."

His first employment at the London Hospital was in the museum of that institution. After he had been there a while a vacancy occurred on the staff, and he became a candidate for the appointment, being warmly supported by his colleagues and the medical students. There were other candidates for the place and the contest was a severe one. "It was the greatest fight," says Sir Andrew Clark, "that had ever been fought at a London hospital, and I well remember when the fight was over how one of the opposing parties said: 'Poor Scotch beggar, let him have it; he cannot by any possibility have six months to live.' But the race is not to the swift, nor the battle to the strong; I am still living and working among you to-day, the sole representative of the staff of thirty-five years ago."

After frankly saying that he never expected to achieve the material success he has met with, Sir Andrew Clark said he presumed some of the students present would like to know from him what conditions he thought were essential to make a man a successful physician. These he gave as follows:

"Firstly, I believe that every man's success is within himself, and must come out of himself. No true, abiding, and just success can come to any man in any other way. Secondly, a man must be seriously in earnest. He must act with singleness of heart and purpose; he must do with all his might and with all his concentration of thought the one thing at the one time which he is called upon to do. And if some of my young friends should say here, 'I cannot do that — I cannot love work,' then I answer that there is a certain remedy, and it is work. Work in spite of yourself, and make the habit of work, and when the habit of work is formed it will be transfigured into the love of work; and at last you will not only abhor idleness but you will have no happiness out of the work which then you are constrained from love to do. Thirdly, the man must be charitable, not censorious — self-effacing, not self-seeking; and he must try at once to think and to do the best for his rivals and antagonists that can be done. Fourthly, the man must believe that labor is life, that successful labor is life and gladness, and that successful labor, with high aims and just objects, will bring to him the fullest, truest, and happiest life that can be lived upon the earth."

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Correspondence.

NON-ANTISEPTIC SURGERY.

Boston, October 14, 1889.

Mr. Editor, — The *Journal de Médecine et de Chirurgie Pratiques*, for September, has an abstract of a full Statistical Report to the Surgical Society at Paris of the surgical operations performed at the hospital St. Louis during the two years, from May, 1887, to May, 1889, by Dr. Lucas Championnière, surgeon in charge for that time.

Omitting laparotomies for abdominal tumors, Dr. Championnière found and gave complete analyses of 463 important cases (*les plus grosses opérations*), 321 in men, 142 in women. There were no deaths, except of two women, clearly due to causes other than the operations.

All these operations were performed in sheds (*baraques*) which had been used for the previous seven years for small-pox cases, and were fit only to be burned, as eminent hygienic colleagues declared to him.

Dr. Championnière, italicizing his words, says (literally translated) Thus have I given again a demonstration of this truth that, *splendor of means and luxury of antiseptic material signify little, while experience and the surgeon's faith in the antiseptic method are the whole of it.*

This, he adds, is a fact of first importance, for we are constrained more than ever to a squandering waste in constructions and hospital arrangements that undermines resources which more wisely employed would avail much.

"All my operations," he says, "laparotomies as well as others, were performed in the same room, heated by a stove, not having any apparatus for sterilization or for irrigation, and without glazed shelves or tablets. The operating table was of wood, with a hair mattress. No matter what the operation, the public entered the room at will, even to crowding it."

In spite of these unfavorable appearances, not only was there no mortality, but, what is vastly more to the point, there was a complete absence of any suppuration. This may be an easy thing to say, but it can be imagined also that in a service of 68 beds there would have been a practicable impossibility in performing so many capital operations had there been suppuration.

After elaborate analyses and tables, and an explanation of the deaths from laparotomy, due apparently in the main to the hopeless nature of the cases at the start, Dr. Championnière concludes his paper with the statement that, "in this space of two years, in my service mortality has been absolutely nothing (*absolument nulle*), and that, too, in a service of extreme activity during the time, and the performance of 595 operations mostly severe or capital in character."

This report, with its statistics, merits, it has been well said, attention in many points of view, offering, as it does, proportionate success that no other surgeon has ever surpassed. And it may be added further that it thus appears evident that a septicæmic wave or a suppurative cycle has not prevailed at Paris of late; as it has not been present in other regions now boastful of success, and an ability to stay the plague, — after the epidemic influence has reached its height or has effectively passed away. When, however, such or a similar morbid tendency returns, as it will at some future time in the order of things here below, human inventive powers will be put again once more to a new trial. Meanwhile, a careful consideration of Dr. Championnière's report and his cases is respectfully recommended to the readers of papers on antiseptic surgery at the last annual meeting of the Massachusetts Medical Society.

Very truly yours,
Ivan.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 12, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	573	197	17.82	18.36	7.74	1.44	4.68
Philadelphia	1,040,245	331	105	14 20	11.40	2.10	—	4.80
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	141	49	11.30	18.46	3.55	.71	4.26
St. Louis	450,000	146	59	17.00	10.20	3.40	2.12	6.80
Boston	413,567	205	71	12 25	7.35	5.88	2.45	5.39
New Orleans	250,000	113	28	11.57	21.36	6.23	—	.89
Cincinnati	225,000	89	—	23.52	11.20	2.24	4.48	15.68
Washington	225,000	90	24	23.32	13.32	4.44	5.55	13.32
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	16	5	12.50	12.50	12.50	—	—
Charleston	60,145	28	7	14.28	14.28	—	7.14	3.57
Portland	40,000	2	0	—	—	—	—	—
Worcester	78,292	25	12	20.00	8.00	4.00	4.00	8.00
Lowell	71,518	35	16	25.74	17.16	17.16	—	8.58
Cambridge	65,552	29	5	17.25	17.25	3.45	6.90	6.90
Fall River	62,647	—	—	—	—	—	—	—
Lynn	53,334	11	—	9.09	9.09	9.09	—	—
Springfield	40,731	11	4	18 18	—	—	9.09	9.09
Lawrence	40,619	21	12	14.28	—	4.76	4.76	4.76
New Bedford	37,253	17	5	17.64	11.76	5.88	11.76	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	11	4	18.18	—	9.09	—	—
Salem	29,011	13	7	23.07	15.38	7.69	—	15.38
Brockton	28,813	7	3	14.28	14.28	—	—	—
Chelsea	28,167	7	2	—	28.56	—	—	—
Haverhill	26,058	8	2	—	—	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	9	6	11.11	—	—	—	—
Newton	21,553	8	3	25.00	12.50	12.50	—	12.50
Malden	19,774	8	4	—	—	—	—	—
Fitchburg	17,534	5	0	—	20.00	—	—	—
Waltham	17,332	8	2	12.50	—	—	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	6	1	—	—	—	—	—
Quincy	13,728	7	2	14.28	—	—	14.28	—

Deaths reported 1,980: under five years of age 635; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 316, acute lung diseases 194, consumption 284, diphtheria and croup 110, diarrhœal diseases 101, typhoid fever 36, scarlet fever 26, malarial fever 22, whooping-cough 13, cerebro-spinal meningitis 6, measles 1.

From scarlet fever, Philadelphia 12, St. Louis 6, New York 4, Baltimore 2, Boston and Cincinnati 1 each. From malarial fevers, New York 9, Philadelphia and New Orleans 5 each. Baltimore 2, Charleston 1. From whooping-cough, New York 7, Philadelphia and Boston 3 each. From cerebro-spinal meningitis, Philadelphia, Worcester, Somerville, Brockton, Gloucester and Waltham 1 each. From measles, New York 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending September 28th, the death-rate was 17.2: deaths reported 3,285: infants under one year of age 1,029; acute diseases of the respiratory organs (London) 189, diarrhœa 258, scarlet fever 67, diphtheria 60, whooping-cough 60, fever 56, measles 28.

The death-rates ranged from 7.9 in Huddersfield to 32.7 in Plymouth: Birmingham 15.8, Bradford 15.3, Hull 20.1, Leeds 18.5, Leicester 15.9, Liverpool 18.7, London 16.3, Manchester 24.5. Nottingham 12.5, Sheffield 19.5, Sunderland 27.6.

In Edinburgh 16.6, Glasgow 20.7, Dublin 31.5.

The meteorological record for the week ending Oct. 12, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Oct. 12, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.		8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 6	29.98	56.0	61.0	50.0	88		91	90.0	S.E.		S.	24		6	O.		O.	0.40	T.
Monday,.. 7	29.75	62.0	58.0	47.0	94		79	86.0	N.W.		W.	12		12	O.		C.	7.45	.63
Tuesday,.. 8	29.97	46 0	52.0	39.0	70		64	67.0	W.		W.	10		12	C.		C.	.0	.0
Wednes... 9	29.94	50 0	59.0	40.0	61		63	62.0	S.W.		S.W.	16		6	C.		O.	.0	.0
Thursday,.10	29.86	50.0	53.0	47.0	66		59	62.0	S.W.		N.W.	13		9	O.		C.	0.20	T.
Friday,....11	29.99	48.0	58.0	38.0	67		60	64.0	S.W,		S.	14		5	C.		C.	.0	.0
Saturday,.12	30.05	48.0	53.	42.0	79		84	82.0	0.		N.E.	0		9	C.		R.	1.00	T.
Mean for Week.																			

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 12, 1889, TO OCTOBER 18, 1889.

Steinmetz, Wm. R., captain and assistant surgeon U. S. Army. Ordered for examination for promotion. Par. 3, S. O. 236, A. G. O., October 10, 1889.

Brechemin, Louis, captain and assistant surgeon U. S. Army. Granted leave of absence for one month. Par. 1, S. O. 98, Headquarters Department of the Platte, October 12, 1889.

Adair, George W., captain and assistant surgeon U. S. Army. Leave of absence extended for fifteen days. Par. 15, S. O. 238, A. G. O., October 12, 1889.

Havard, Valery, captain and assistant surgeon U. S. Army. Leave of absence extended one month. Par. 3, S. O. No. 240, A. G. O., October 15, 1889.

Brechemin, Louis, captain and assistant surgeon U. S. Army. Relieved from duty at Fort Laramie, Wyoming Ty., and ordered to Fort Apache, Arizona Ty. Par. 2, S. O. 241, A. G. O., October 16, 1889.

Bradley, Alfred E., first lieutenant and assistant surgeon U. S. Army. Relieved from duty at David's Island, N. Y. H., and ordered to Fort Omaha, Neb. Par. 2, S. O. 241, A. G. O., October 16, 1889.

Harris, H. S. T., first lieutenant and assistant surgeon of U. S. Army. Relieved from duty at San Antonio, Texas, and ordered to Fort Keogh, Montana. Par. 2, S. O. 241, A. G. O., October 16, 1889.

Everts, Edward, captain and assistant surgeon U. S. Army. Relieved from duty at Fort Apache, Arizona, and ordered to David's Island, N. Y. H. Par. 2, S. O. 241, A. G. O., October 16, 1889.

Loring, L. Y., major and surgeon U. S Army. Sick leave extended two months on surgeon's certificate of disability. Par. 16, S. O. 241, A. G. O., October 16, 1889.

Heger, Anthony, lieutenant colonel and surgeon U. S. Army. Relieved from duty in Division of the Atlantic, and ordered for duty as attending surgeon, Washington, D. C. Par. 2, S. O. No. 241, A. G. O., October 16, 1889.

O'Reilly, Robert M., major and surgeon U. S. Army. Granted leave of absence for six months with permission to leave the United States. Par. 3, S. O. 241, A. G. O., October 16, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 19, 1889.

Bertolette, D. W., surgeon, detached from the "Franklin," and ordered to duty at Naval Hospital, Philadelphia.

Bush, N. H., passed assistant surgeon, detached from Naval Hospital, Philadelphia, and ordered to the "Saratoga."

Hibbett, C. T, passed assistant surgeon, ordered to the "Franklin."

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A Regular Meeting of the Society will be held Monday, October 28, 1889, at 8 P. M., at 19 Boylston Place. Reader, Dr. W. F. Whitney. Subject: Fatty Degeneration of the Diaphragm; a Neglected Death-Factor. Dr. J. J. Putnam will read: Remarks on the Frequency with which Lead is found in the Urine, with statistics; and on the Occurrence of Lead in the Drinking-water.

F. B. Harrington, M.D., *Secretary*.

Norfolk District Medical Society. — A Stated Meeting will be held at Rockland Hall, 2343 Washington Street, Roxbury, Tuesday. October 29th, at 2 P. M. The Board of Censors will meet at the same time and place. The examination of candidates will occur one week afterward, on Tuesday. November 5th, at 7 P. M., at 254 Warren Street. Order of Business: Reading of Records, Report of Committees, Election of Nominating Committee, Election of Secretary, Incidental Business, Communications: Some Notes upon the Final Stages of Diabetes, by D. D. Gilbert, M.D.

S. Allen Potter, M.D., *Secretary*.

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene will meet at Huntington Hall, Massachusetts Institute of Technology, on Wednesday, October 30th, at 7.30 o'clock. Prof. F. W. Putnam, of Harvard University, will give a *resumé* of his researches in the Archæology of America, which will be illustrated by lantern pictures, and by specimens from the Peabody Museum of American Archæology and Ethnology at Cambridge. You are cordially invited to be present.

Albert N. Blodgett, 138 Boylston Street, *Secretary*.
A. L. Mason, M.D., *Chairman*.

Suffolk District Medical Society. — There will be a Stated Meeting on Saturday, October 26, 1889, at 8 P. M, at 19 Boylston Place. Papers: Dr. C. F. Folsom, The Treatment of Typhoid Fever; Dr. A. Post, Cases of Popliteal Aneurism; Dr. G. W. Gay, A Case of Gastrostomy. Choice of a committee of five to prepare a list of candidates for officers of the Society. Supper after the meeting. Members are requested to notify the Secretary of any change of address.

Herman F. Vickery, M.D., *Secretary*.

CORRECTION. — BOSTON DISPENSARY.

The names of Drs. Thomas F. Sherman, and James S. Howe, were omitted in the notice of this institution. They should have appeared in the list of the medical staff at the central office.

OBITUARY. LEMUEL W. BRIGGS, M.D.

Dr. Lemuel Williams Briggs of Bristol, R. I., one of Bristol's oldest citizens, died October 16th. He was born in Bristol May 21, 1811. After completing his medical studies he practiced in Middleboro, Mass., and returned to Bristol on the death of his father, and succeeded to his practice nearly fifty years ago. Fifty-six years ago he was married to Miss Elizabeth Wordsworth of Castleton, Vt., who survives him. For some little time past Dr. Briggs has attended mostly to office practice making only occasional visits to his old patients. He was a valued member of the Rhode Island State Medical Society, and a communicant of St. Michael's Church for many years. As a citizen, Dr. Briggs did not aspire to any office in the gift of the people. He was upright and honest in all his dealings, and always took a lively interest in all that pertained to the improvement and the adornment of his native town.

OBITUARY. PHILIPPE RICORD, M.D.

This prominent physician and syphilographer died in Paris, October 22d, at a great age. He was of American birth, having been born in Baltimore December 23, 1800. He was a physician to Napoleon III., and held many positions of professional honor.

Original Articles.

ANTIPYRETICS.[1]

BY EDWARD N. WHITTIER, M.D., OF BOSTON.
Visiting Physician to the Massachusetts General Hospital.

The mean bodily temperature of warm-blooded animals results from the correllation of three factors, heat production, heat dissipation and heat regulation. It is an expression of the balance maintained between the heat produced in the body and the heat lost from the body, through the influence of a regulative process; it is an equilibrium of temperature, or state, in which the heat produced by chemical changes chiefly in the muscular envelopes of the skeleton and in grandular structures, has a counterpoise in the heat discharged by the skin and respiratory organs, in the process of evaporation, conduction and radiation.

The "constant bodily temperature" of health is the marvellous maintenance of an almost uniform temperature by the mechanisms which coördinate the loss with the production of heat.

Temperature regulation by variations in heat loss, and temperature regulation by variations in heat production have a common source, in a thermo-taxic mechanism which not only controls normal temperature, but also explains the processes by which abnormal temperatures prevail in disease, for fever of necessity implies a disorder of the thermo-taxic mechanism.

What is fever? How defined, what its nature, its pathology, its mechanism, its etiology; what are the various theories bearing upon this subject, and where are the clinical aspects of the fever question to-day?

These and other topics of kindred significance have recently formed the subjects of papers of great value, representing the most advanced opinions and the best conclusions based upon original research and recent literature.

Kindly permit me to preface the subject assigned me with a synopsis of the views relative to fever which are entitled to representation here; for there can be no intelligent and profitable discussion of the subject of Antipyresis which is not based upon a fair understanding and agreement as to the significance of the term Pyresis.

No one to-day rests his definition of fever on the single symptom of elevation of temperature, nor does any one fail to recognize fever as a symptom complex or group of symptoms, in which disordered heat occupies the dominant position and is necessarily the essential feature; but associated with this and so intimately blended with it as to be deservedly regarded as part and parcel of the process known as fever are the other symptoms of the group — disordered circulatory and respiratory functions, loss of muscular power, digestive derangements, changes in glandular secretions, notably of the kidneys, impaired nutrition, tissue changes, loss in weight, and symptoms referable to the nervous system.

Elevation of temperature is the essential and predominating factor in fever, and the questions as to the cause of this abnormal rise are various and vexing, and are by no manner of means as yet adjusted, although during the past two or three years greater advances have been made than ever before towards the solution of the problem.

The combustion theory, the hæmic, the zymotic, the traumatic, the chemical, the nervous theory — each has its advocates and its zealous defenders; but the weight of evidence and of influence, the teachings of physiology and of pathology, influences powerful in moulding opinion, are in the direction of assigning to the nervous theory the highest position as an exponent of the method by which increased production of heat becomes the dominant element or symptom in fever.

It has been said, and well said, that the nervous theory of fever rests upon the tripod of heat regulation, heat discharge and heat production, and that the normal as well as abnormal temperatures can be explained by the predominance in varying degree of each of these processes.

Dr. McAlister, in his lectures on the nature of fever, argues that the doctrine of evolution as applied by Hughlings Jackson to the motor functions can be applied with equal directness and force to the heat producing functions, that the element in thermal mechanism which is lowest, the heat discharging, is the earliest and best organized; this is the vaso-motor apparatus long since demonstrated to control the circulation of blood in the superficial part of the body, thereby in great measure controlling the discharge of heat; the other factors in the process of heat discharging, respiratory and sudorific, are equally well under the control of the nervous system.

Heat producing, the element of thermal mechanism which is second in the order of development, is in fair way of definite localization. This is certainly an inhibitory centre which depresses or controls the production of heat, probably by acting on the trophic cells of the gray matter of the spinal cord (H. C. Wood). It is also part of the logistics of heat mechanism that there are cerebro-spinal centres which when stimulated excite heat production.

The third element, the most sensitive, the most unstable and the last in the life of the individual to reach its point of adjustment, is thermo-taxis, or heat regulation. No one has yet localized it, no one has more than described it as least organized, least automatic, least and last developed. It coördinates heat dissipation with heat production. Thermal ataxia implies irregularity of temperature and that alone.

Thermotaxic and thermogenic disorders when coexisting, imply ordinary fever, while disorder of all, heat regulation, heat production and heat dissipation, implies a dangerous increase of heat, a steadily rising temperature, a general hyperpyrexia of extreme gravity.[2]

Puncture of the caudate nucleus and injury to the spinal cord in the upper cervical region have each been conclusively demonstrated to be causative of increased heat production and elevation of temperature and these experiments on animals have induced all the essential conditions of fever, namely, increased heat production, increased heat loss, increased absorption of oxygen, increased formation of water and carbonic acid and large increase in formation and elimination of urea, with corresponding changes in pulse and temperature curves. McAlister and Welch, McAlister propounding, Welch seconding, discuss the question of the origin of the heat producing phenomena in the

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[1] Read at the annual meeting of the Massachusetts Medical Society, June 11, 1889.

The author desires to acknowledge the valuable assistance rendered in the preparation of this paper by Dr. E. M. Greene, Pathologist Boston Dispensary and Carney Hospital.

[2] J. C. Wilson: General Pathology of Fever.

existence of nerves whose chief function is on the one hand the disintegration, on the other hand the restoration of muscles, basing these conclusions largely on the results of the researches of Gaskell, whose conclusions were that inhibition, for instance, of the heart's muscle, is restorative through the influence of the pneumogastric, and that the accelerator nerves of the heart induce opposite or destructive changes, and that the muscular substance when disintegrated gives rise to heat and mechanical work.

"If it be found (Welch) that similar inhibitory and accelerator nerves preside over the chemical changes in voluntary muscles and other tissues of the body, then Gaskell's induction as to the existence of thermo-excitory and thermo-inhibitory nerves ranks as one of the most profound and important in modern physiology."

According to Maclagan, the thermal nervous apparatus consists of: — (1) tissues in which heat is formed; (2) heat eliminating surface; (3) a thermic centre, controlling heat; (4) nerves from the central controlling power to the heat forming parts of the body; (5) nerves connecting the heat controlling centre with the parts involved in heat elimination.

So long as all these parts of the thermal apparatus are in harmonious operation, normal temperature prevails, but interruption of this harmony causes the temperature to rise or fall.

Maclagan does not regard as antagonistic the two theories of fever which have secured the strongest foot-hold, namely, the combustion, and the nervous, theories; he regards each complete in itself, that the combustion theory, "according to which the rise of temperature results from increased activity of the processes by which heat is naturally formed in the body," is no way inconsistent with the neurotic theory, according to which the rise in temperature is due to impairment of that inhibitory force by which heat production is restrained and kept within normal limits.

Austin Flint embodies his views in three propositions: —

(1) It is probable that the original cause of most if not of all the essential fever is a micro-organism, different in character in different forms of fever.

(This conclusion is based upon recent advances in bacteriology.)

(2) Restricting the definition of fever to the expression, "an abnormal elevation in the general temperature of the body," he regards the pyrexia as due to oxidation of certain constituents of the tissues, due to micro-organisms in the blood; that this oxidation results in increased waste of tissue and is represented by an excess of carbonic acid and urea excreted.

The part which the formation of water within the body plays in the production of heat, is either suppressed or is greatly diminished in prominence.

(3) Fever produces abnormal consumption of fat with parenchymatous degenerations; and finally he defines an essential fever "as an excessive production of heat in the body induced by a special morbific agent or agents and due to excessive oxidation, with destruction of the tissues of the body and either a suppression or a considerable diminution in the production of water."

Prof. H. C. Wood summarizes our knowledge of fever in three propositions:

(1) Fever is a disturbance of calorification in which through the nervous system heat dissipation and heat production are both affected. If there be a fever which is produced by the direct action of a poison independently of the nervous system, we have at present no proof of its existence.

(2) Heat production is regulated by a nervous apparatus of which our knowledge is still imperfect. There is certainly an inhibitory centre which depresses or controls the production of heat. It does this probably by acting on the trophic cells of the gray matter of the spinal cord. It is also probable that there is a centre which, when excited, increases tissue change, but its existence has not been absolutely proven.

(3) Heat dissipation is regulated through the nervous system, so that vaso-motor paralysis is followed by an enormous loss of animal heat, and under unfavorable conditions by death from cold.

The views of the German school are thus defined in a paper recently published:

Bacteriological investigations have resulted in great advances in our knowledge of the etiological factors of disease. Ziemssen states that we now believe that the effects of the action of harmful agents on an organ or group of organs or on the entire body, are the necessary consequences of action on the cell, and the consequent changes in the physiological function of the tissues.

The bacteriological theory of the need and usefulness, in all infectious diseases, of a high temperature, has had many and able advocates, who have argued that the febrile movement was a proper expression of the resistance developed in the patient, reactionary in its influence and results, and destructive to the micro-organisms productive of the fever.

Welch, in his "Lectures on the Pathology of Fever," says: — "There is so much which speaks in favor of this doctrine. The real enemy in most fevers is the noxious substance which invades the body, and there is nothing to prevent us from believing that fever is the weapon employed by nature to combat the assaults of this enemy. The doctrine of evolution indicates that a process which characterizes the reaction of all warm-blooded animals against the invasion of a host of harmful substances, has not been developed to such an extent, and is not retained with such pertinacity without subserving some useful purpose. The supposition seems more probable that the increased oxidation of fever aids in the destruction of the injurious substance. According to this the fever-producing agents light the fire which consumes them. It is not incompatible with this conception of fever to suppose that the fire may be injurious to the patient and require the controlling hand of the physician."

In opposition to this view of the salutary influence of fever, are the results in febrile infectious diseases, wherein treatment not only abates the fever but also the infection. Mention may be made of the periodical fevers, of rheumatism, etc.; in these diseases specific remedies induce desired results by reduction of temperature and diminution of infectious material. And by analogy and in those infectious diseases wherein there are no specific remedies, experience guides us in the employment of methods by which fever and the morbid processes due to infection are reduced to the minimum of harmful influence.

It is upon this broad platform of clinical experience, upon this firm and enduring basis, that the doctrine of antipyresis rests, and the questions propounded in the laboratory of experimental pathology and bacteriology find their answers in the results of observations at the bedside.

The change to the present and prevailing opinion concerning the nature of fever (for the neurotic theory is the prevailing doctrine) finds its parallel in the change of opinion in relation to the harmful effects of high temperature.

Careful analysis of the transactions of the first and fourth German Congresses of Internal Medicine cannot fail to impress one with the strength of the position occupied by German clinicians and physicians, in the opinion, that high temperature and that alone cannot longer be considered the dangerous element in fever. The recent review of the pathology of fever by Professor Welch of Johns Hopkins University, leads up to the conclusion, confessedly an advanced position, "that even in fevers, such as typhoid and pneumonia, when the height of the temperature is undoubtedly a most important index of the severity of the disease, there exists no such parallelism between the temperature and the nature and severity of the other symptoms as we should expect if these symptoms were caused by the increased heat of the body, and both clinical and experimental observations strongly support the view, now widely accepted, that the disturbances of the sensorium which constitute so prominent a part of the group of so-called typhoid symptoms, are dependent upon infection," or upon the poisonous substances produced in the body by the pathogenic micro-organisms rather than by high temperature.

The various opinions expressed are well condensed by Baruch, in his admirable article on the treatment of typhoid fever: — "Since it may now be regarded as an established fact that high temperature, minus infection, does not produce those serious degenerations formerly ascribed to it, we must seek in the infection process and the ptomaine intoxication those deleterious effects upon the vital organs which undermine the system and eventually cause death."

I recognize distinctly, and all the more forcibly from a somewhat extended examination of the literature of the subject, the great obstacles in the way of a satisfactory exposition of the present status of antipyresis and antipyretics. I have endeavored to place before you briefly, necessarily so, by reason of the limitations placed by custom upon papers prepared for these occasions, some essential facts; but without much greater elaboration of the subject I cannot otherwise than rest here in my definition of fever, and ask your attention in the remaining portion of this paper to the practical application of the subject assigned me.

Antipyresis includes all measures designed to reduce temperature and to resist the noxious influences of the various infections and toxic fever-producing agents. Classification of the means employed is not simple; for the therapeusis of antipyresis is a complex subject, and whatever of confusion may seem to exist, can only be explained by the lack of harmony in the various and varying views still entertained as to the nature of fever and the methods to be employed for its control. Those who believe the harmfulness of high temperature rely upon antithermic medication, while those who regard high temperature as relatively harmless and assign to micro-organisms and chemical changes the most important position, causative of the complex process known as fever, rely upon measures to increase the dissipation of heat, and through the influence of the nervous system to improve individual powers of resistance.

Antithermic remedies of recent date include all of the so-called aromatic series, the modern synthetical compounds. The true antithermics act absolutely (according to Wood) on heat production and heat discharge (thermolysis and thermogenesis) through the inhibitory nerve apparatus, diminishing in similar manner, though not in equal degree, heat production and heat dissipation; heat production falling decidedly more, as a rule, than does heat dissipation. This effect has been proven to be independent of any influence on the circulation, and in all probability the result is produced through the nervous system directly upon the chemical movements of the organism.[3]

Antifebrile remedies include the "false antipyretics," which increase heat dissipation by acting upon the vaso-motor system and inducing vaso-motor paralysis, of necessity producing the discharge of animal heat in large volume. Prominent in this class we recognize aconite and veratrum viride, and it is not altogether improbable that in a limited degree by a similar effect on the vaso-motor apparatus some of the so-called antithermics exert an influence on cutaneous and respiratory discharges of heat.

Both the false and the true antipyretics (and this latter class is made up of those drugs which diminish heat production primarily, and only secondarily and in an unimportant sense promote heat dissipation) have of late fallen into disfavor as means to control the course of disease, to lessen complications or to reduce the mortality rate. Glénard closes the discussion before the Society of Medical Sciences at Lyons by stating that the law once more verifies itself, that the obituary curve oscillates in direct ratio with the consumption of antithermic remedies, and inverse ratio to the number of cold baths administered.

Abstraction of heat by cold baths is far less important in its effects than the vitalizing of nerve centres through the reflex stimulus aroused by low temperature applied to the peripheral nerves, and by a reduction of the temperature of the blood circulating in the internal organs.

It is considered that the result of this lowered temperature of the blood is a grateful stimulation to the nervous system, and that the reflex stimulus of nerve centres by cold bathing of the surface of the body induces an innervation for circulation, digestion, respiration, tissue formation and excretion, so that the rapid heart is slowed, the hurried respirations are checked, the failing digestive powers are quickened, and muscular irritability is allayed. Quiet takes the place of restlessness, wandering and delirium disappear, anorexia gives place to desire for food, and more than this the digestive powers are strengthened, nutrition improves, and the waste of tissue is lessened.

The advocates of the antithermic, internal antipyretic and expectant method in antipyresis, have placed much reliance on the experimental and physiological action of cold applied to the surface of the body, as determined by the researches of Frédéricq of Liege, and others, by means of the well-known apparatus of Regnault and Reisset.

The conclusions that "we are warranted in affirming as a physiological law, that under the influence of cold baths, organic combustions are energized and augumented," would appear to be well drawn, and would appear to afford to many a fairly reasonable excuse for not entering upon a course of treatment which might be accompanied by danger greater than that which was hoped would be neutralized; and the teachings of experimental physiology would seem to justify us in regarding the method of cold baths, considered as antipyretic and applied to the treatment of febrile phenomena, as an irrational practice; but we find in the abstraction of heat, in the tonic effects of cold water, in the sedation effected in the nervous phenomena induced by the febrile process; above all in the results of saving human life, an answer to all objections, a refutation of all opposing theories, and a justification of the method.

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[3] Wood. Trans. Am. Assoc. Physicians, vol. ii.

And this brings full before us for consideration the wonderful, the phenomenal, the almost miraculous control exerted over the death-rate in our chief infectious disease typhoid fever, by the use of cold baths as an antifebrile agent. And permit me here to remind you that the febrile movement is to be regarded as a symptom complex, in which high temperature no longer occupies the chief place, the prominent position formerly assigned to it, but is secondary in its influence to that exerted by the more important group of fever-producing agents formed by the pathogenic micro-organisms, the chemical changes set up in the tissues and the intoxication developed in nerve centres by the ptomaines, the alkaloids of decay. Let me here repeat an axiom in antipyresis. "Abstraction of heat by cold baths is far less important in its effect than the energizing of nerve centres through the reflex stimulus aroused by the shock to the extensive pheripheral nerve endings, whereby innervation is furnished for circulation, respiration, digestive tissue formation and excretion, so that the system is enabled to tide over the dangers which would ensue from failure of these functions." "This," writes Baruch, in this admirable article on the treatment of typhoid fever,[4] "is the effect of cold bathing in a nutshell, — the simple cooling of the blood occupies a secondary though not unimportant office."

Permit me to spread before you, and here I again avail myself of a recent paper on the treatment of typhoid fever, "Statistical Evidence in Support of the Claims of the Advanced School of Hydrotherapy"; and you will doubtless concede that never in the history of medicine have statistics of such magnitude, from such reliable and diversified sources, been brought to bear upon a question of therapeutics.

Baruch states that he had gathered from the New York City Board of Health Reports, from 1876–1888, 7,712 cases of typhoid fever, with a mortality of 41.28 per cent. Dr. Delafield, in 1885, states that the mortality of typhoid in the New York Hospital was 24.66 per cent. The mortality rate in the Boston City Hospital has been 13 per cent. The mortality rate in the Massachusetts General Hospital has been 16 per cent. Brand collected 11,124 cases, treated under the expectant plan, with a mortality rate of 21.7 per cent., and with infinite labor and pains, the record of 19,017 cases, to show that "under the general influence of all kinds of cold bath treatment, without, however, its strict enforcement, the mortality had been reduced from 21.8 to 7.8 per cent."

Brand also obtained from twenty-three sources, German and French, of undoubted authenticity, reports of 5,573 cases treated by the cold bath, as advised and urged by him, with a mortality rate of 3.9 per cent.

In the Second Prussian Army Corps, between the years 1849–1866, there were 1,970 cases, with a mortality rate of 26.3 per cent. Later, and under the cold bath treatment, in 2,711 cases the mortality rate was reduced to 4.30 per cent. This contrast is all the more striking when it is considered that at the same time the mortality rate among French soldiers was 32.2; among Italian, 28.6; among Austrian, 27.4; and in the English service, 23.8. Vogel quotes 713 cases, with a mortality rate of 3.40 per cent. Uaunyn, 145 cases, with a mortality rate of 6.9 per cent. Brand, an additional series of 2,198 cases, with a mortality rate of 1.7 per cent. Juergensen, Vogel, Brand, and some others furnish reports of 1,223 cases, treated strictly and rigorously in accordance with the plan devised by Brand, with a mortality rate of 1 per cent.

From the latter part of the last century, when Currie published his work on the treatment of acute diseases by cold, up to the present time, but particularly between the years 1861 and 1877, many and important as well as authoritative works have been published bearing upon the treatment of febrile diseases, especially the acute infectious diseases, by cold baths.

Currie, in 1797; Giannini, in 1805; in 1812 the results of Recamier's labors; in 1822, Hufeland; Scouttetin in 1843; Jacquez in 1847; and in 1852 the classical work of Leroy. But it remained for Brand, as early as 1861, and in the succeeding years up to 1877, to accomplish the wonderful results described by Ziemssen, as "the work of one who by the precision and rigorousness which he has put into his method of refrigeration, has merited the right of associating his name with this work of treatment of typhoid fever," the disease, in which above all others, antipyresis exerts the largest and best influence.

I introduce at this point, in order that I may reinforce the statement relating to difficulties in the classification of the means employed in antipyresis, the division made by Ziemssen in his recent lecture on antipyresis and antipyretics.

Ziemssen groups authorities according to their opinions of the value and form of antipyretic treatment into six divisions: —

(1) Of those who use the cold bath and do not employ internal antipyretics.

(2) Of those who employ luke-warm baths, but do not use internal antipyretics.

(3) Of those who, governed by symptoms, make use of either the cold or the luke-warm bath, and internal antipyretics.

(4) Of those who regard high temperature needful and advantageous, employing baths and internal antipyretics only in the presence of symptoms or complications dangerous to life.

(5) Of those who regard high temperature as necessary and refuse all measures leading to its reduction, confining their attention to the diet.

(6) Of those who deny the influence of treatment in the reduction of the rate of mortality.

From this it may be seen that even in Germany, where the study of antipyresis and of antipyretics has been most profound, and the conclusions have been most carefully scrutinized and the effects of treatment, in one direction at least, have exceeded in the positive results of saving human life, all previous efforts, as yet there remains a very large, and it would appear an unaccountable lack of harmony, in views expressed, in conclusions maintained, and in methods governing treatment.

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[4] The Medical Record, February 16, 1889.

(To be continued.)

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THE TREATMENT OF LOCOMOTOR ATAXIA BY SUSPENSION.

BY CHARLES L. DANA, M.D., NEW YORK.
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In a letter to the *Medical Record* of April 13, 1889, I reported the results of my experience in the treatment of locomotor ataxia by suspension in six cases. Since that time this treatment has been extensively tried in this country and Europe; and I have myself continued the work upon other patients; so that now one can, I think, form a pretty definite opinion of the value of the method. My cases treated by suspension now number twenty-one, and they have received altogether over seven hundred suspensions. I append a tabulated list, showing the character and stage of the disease, the number of suspensions in each case, and the results. It will be seen that among the twenty-one there was

Very marked improvement in	4
Much improvement in	3
Slight improvement in	7
No improvement in	4
Discontinued in	3
	21

The nature of the improvement was oftenest in the gait, strength and capacity for locomotion generally, and in a subjective sense of better physical health. Next to this there was improvement in regularity of the movements of the bowels, in control of the bladder, in sexual power and in the pains. In one case vision was improved. In no case did the knee-jerk or the light-reflex return. The improvement in a few cases was most striking and remarkable. This remarkable improvement occurred always in walking cases, though one case that came into the hospital bedridden was able to walk with help after suspensions. The paralytic cases, as a rule, improved but little. The cases nearly all had been suffering from the disease for six to ten years. I have treated but one in the initial or pre-ataxic stage.

My results agree in the main with the reports of others, namely, that in fifteen to twenty per cent. very great improvement, and in about the same proportion a moderate improvement, occurs. In the light of my experience all the *à priori* condemnations of the method seem to me very absurd. Suspension is an undoubted acquisition to the therapy of tabes. In the second stage, it is remarkably helpful in a good percentage of cases; in the third stage patients are often improved in bladder, rectal symptoms, and the pains are sometimes relieved.

I have had no accidents worth mentioning, but have had two patients nearly faint while in the apparatus. I several times suspended one man seventy years old for six to nine minutes, not only without harm, but to his great comfort and relief. Still, three fatal cases are on record; a good many syncopal attacks have been observed; and the suspensions must always be made in a systematic way, and with great care and attention to detail. The effect upon the heart, in several cases in which I tested it, was to slow the beat. Usually it is slightly accelerated, and arterial tension raised.

No.	Sex.	Age.	History of Syphilis.	Duration. Years.	Locomotion.	Muscular power.	Amount of pain.	Condition of Bladder.	Sexual function.	Number of Suspensions.	Result.
1	Male.	60	Yes.	10	Very poor.	Good.	None.	Good.	Absent.	4	Discontinued. No improvement.
2	Male.	50	Yes.	8	Poor.	Mod.	Severe.	Good.	Absent.	30+	Very great improvement in gait, strength, and freedom from pain and tremor.
3	Male.	48	Yes.	5	Good.	Mod.	None.	Good.	Absent.	35+	Much improved in gait and strength.
4	Male.	42	?	3	Poor.	Mod.	Severe.	Good.	Absent.	25+	Very much improved in gait and strength and freedom from pain.
5	Male.	37	?	4	Very poor.	Very poor.	Severe.	Inc.	Absent,	6+	Discontinued.
6	Male.	40	..	8	Very poor.	Mod.	Mod.	..	Absent.	30	Much improvement in gait.
7	Male.	47	Yes.	6	Poor.	Mod.	Mod.	Poor.	Very weak.	26+	Very great improvement in gait, bladder, sexual function and strength, and bowels.
8	Male.	43	Yes.	9	Very poor.	Good.	Mod.	Poor.	Absent.	40+	Very great improvement in gait, coördination, and general strength, bowels, and in vision.
9	Male.	55	No.	7½	Absent.	Very poor.	Mod.	Ret.	Absent.	16	Very slight, if any, improvement. Treatment not completed.
10	Male.	50	?	8	Poor.	Poor.	Mod.	Good.	Absent.	24	Great improvement in gait and sexual power.
11	Male.	34	Yes.	10	Good.	Good.	Severe.	Good.	?	32	No improvement.
12	Male.	68	No.	10	Good.	Mod.	Severe.	Ret.	Absent.	29	Considerable improvement in strength, none in bladder.
13	Male.	50	Yes.	10	Poor.	Poor.	Mod.	Good.	?	15	No improvement.
14	Male.	44	No.	1½	Absent.	Poor.	None.	Good.	?	70+	No improvement.
15	Male.	62	No.	3	Poor.	Poor.	Mod.	Poor.	Absent.	30+	Considerable improvement in gait and strength. Return of sexual power. Bladder better.
16	Male.	50	..	5	Good.	Good.	Mod.	Poor.	..	60+	Somewhat better.
17	Male.	61	No.	3	Poor.	Poor.	Severe.	..	..	..	Discontinued.
18	Male.	53	?	8	Absent.	Poor.	Mod.	Poor.	..	25	Improved in bladder and coördination.
19	Male.	57	No.	10	Absent.	Poor.	..	..	..	50+	Slightly improved in bladder, general strength, and coördination.
20	Fem.	50	Yes.	20	Poor.	Poor.	Mod.	Poor.	..	60+ 70	Moderate improvement in gait. Pains relieved.
21	Male.	40	Yes.	2	Good.	Good.	Mod.	Good.	Good.	15	Considerable improvement in ataxia.

The number of suspensions necessary to secure the best results is not known, and seems to vary in different cases. One of my patients was suspended over ninety times, sometimes twice daily. Motchoukowsky kept up suspensions for nearly a year, giving eighty or ninety. Usually improvement occurs within a fortnight. I have used both the chin-support alone with a spring-balance, and the chin and arm supports. I am not able to say whether one method is superior to the other.

I have used the suspension treatment in a good many spinal troubles other than tabes, and sometimes with surprisingly good results. It does no good in paralysis agitans, however, and only rarely in the various forms of chronic myelitis. In certain functional spinal maladies it is very helpful.

The modifications in technique by Pochery and others may extend its usefulness somewhat. In Motchoukowsky's original descriptions it will be seen that in some bad cases he kept patients on an inclined plane, and that he kept up suspensions nearly a year.

Of the recent contributions to the literature of this subject, the most interesting are those of Eulenberg and Mendel, of Bernhardt, and of Dujardin-Beaumetz. These represent results of treatment upon nearly a hundred cases, and contain conclusions substantially in agreement with those given here.

Four of the cases reported here were in my service at the Montefiori Home, and were also suspended during the service and under the direction of Dr. B. Sachs and Dr. Seesel. One patient was seen in consultation with Dr. F. T. Kidder of Woodstock, Vt. One patient was sent to my clinic by Dr. Wm. M. Leszyisky.

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THE SEDATIVE ACTION OF ELECTRICITY.[1]

BY GEORGE H. WASHBURN, M.D.

WHEN we wish to ascertain the nature of an object that is in the dark, we do not consider the best method to be that of groping about in a hit-or-miss way. Neither would it be proper to accept as accurate, the testimony of those who had explored(?) the object in that way. Lights should be brought, and the object illuminated by the brighest rays, that should penetrate to every crack and corner.

There are some things in medicine that have been surrounded with too much of an air of mystery. It has been the custom to close the blinds, and shut out the full light, before approaching them.

I am happy to say that one subject is now coming into fuller study and appreciation. The extensive use of electricity in the mechanic arts, has given an impetus to its fuller study in its relation to medicine. Electricity is becoming a well-recognized and appreciated therapeutic agent.

There is a danger, however, which is showing itself in this way; the air of mystery and indefiniteness which has surrounded this *force*, has given many an exaggerated idea of its power and capabilities. They are disappointed because they cannot accomplish everything with it, and so condemn it unreservedly. Many do not understand the methods of its use, and naturally do not get much result from its employment, but to their condemnation more weight is given, than to the records of success, from those who know how to use this powerful agent.

All subjects should be approached calmly, with judgments unbiassed. The full light of observation and investigation should be let in, that the good and useful points may be brought to view as well as the defects.

There is no better way to arrive at the value of therapeutic agents, than to study them clinically, compare results, and have these discussed.

This paper to-night, is not intended to bring out any new facts, but to record some observations about old facts, and perhaps emphasize the value of electricity in a line in which it is not generally appreciated. It will not have failed in its object if it elicits a free discussion of the subject.

At this time of intense application to pursuits of every kind, when so many become nervously exhausted, sedatives are a very important class of remedies. Sufficient importance has not been given to electricity for this purpose, by most physicians, it seems to me.

I shall briefly introduce a number of cases to illustrate the various sedative effects of electricity.

The following reports, are mostly of cases that I have treated for Dr. W. H. Baker, and which he has very kindly allowed me to make use of.

Mrs. S. was a neurasthenic, complaining of headache, irritability, inability to apply herself to any one thing for more than a few minutes at a time. Galvanism was applied twice a week to the spine for fifteen minutes at each sitting. During the latter part of the treatment, the patient would become quite drowsy, the tired restless feelings would leave her. This feeling would last for some hours, and the following night too, she would rest much more refreshingly.

The electricity in this case, and indeed in most of the cases of this class, was applied with the negative pole at the nape of the neck, and the positive at the base of the spine; the battery used was a McIntosh, and the strength of current varied somewhat in each case, but averaged about seven milliampères probably, though it was not always measured, but it was strong enough to produce a distinct burning feeling under the negative electrode. The length of time of application, as has been said, was fifteen minutes.

Another case of much the same kind, but more hysterical. Here the applications were made every other day. The patient could perceive the characteristic metallic taste in the mouth, almost before feeling the burning sensation at the point of contact of the electrode. This was not imaginary either, for she knew nothing about the possibility of tasting electricity, nor of course of how it should taste. If the current was purposely made weak, she would recognize the fact at once. Here too, there was the quieting, soothing effect, and succeeding this a refreshing feeling. She could do more the next day without feeling fatigue. Her sleep refreshed her more the following night.

In this case, quite a strong current was required to produce the customary sensation of heat at the point of contact of the negative electrode. As it was at the patient's house that this was applied there was no galvanometer, but twelve cells of the battery were required.

In these cases there is not only the immediate sedative effect of which mention has been made, but also a general tonic effect, from the continued use of the galvanism, improving nutrition, and helping to build up the general tone of the body. The electricity alone would probably not be sufficient, but it has proved its value in *conjunction with* general nervous tonics, where the use of these latter alone had failed to accomplish anything, until electricity was used. But this is digressing a little.

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[1] Read by invitation before the Obstetrical Society of Boston, June 8, 1889.

The use of electricity as a hypnotic of course suggests itself at once.

One case illustrates this action so well that it must be mentioned, although the galvanism was not applied for that purpose. The patient is suffering from a multiple fibroid of the uterus, for which she is receiving electrolytic treatment, after Apostoli's method. The current used is a strong one, running up to about one hundred milliampères. She goes to sleep during the treatment, and is so sleepy for thirty-six hours after that she cannot accomplish much.

Miss M. is a frail-looking young lady, nervously worn out, but not specially hysterical. One great difficulty is her inability to sleep. Almost the whole list of hypnotics has been tried without success. Galvanism was tried, beginning with quite a mild current. She slept better that night. A treatment of galvanism to the spine was given for fifteen minutes every night, at about eight o'clock, for some weeks. Her sleeping was very much improved. During the earlier part of the time, if she missed a night, she did not sleep so well. There was the same result if the current was too weak.

Imagination might have had something to do with the result, but it was very little if any. She was an intelligent, common-sense girl, and then, too, I tested her in various ways. Several nights I used a battery, the fluid of which had become exhausted. She at once recognized the absence of current, and I could not make her imagine that it was present, or that she was deriving benefit from it. On those nights she did not sleep as well.

Many more cases might be noted to show the hypnotic effect of galvanism, but for the most part they are essentially the same as the case just described.

Sometimes as an adjuvant, a warm sponge bath may be given, bathing especially the back of neck and spine with quite hot water. I have recently seen a report of the use of this method with good success, in an English insane asylum.

In most of these cases I have applied the negative pole to the nape of the neck, and the positive to the base of the spine; but some cases seemed to do better with the positive at the back of the neck and the negative at the base of the spine. I cannot explain this difference of action, I have not seen it explained. In a recent discussion at the Academy of Medicine in New York, Dr. Gray noted the same fact, but no satisfactory explanation was elicited. The only rule to be given is, if it does not work in the first way, try the other.

This is certainly unsatisfactory scientifically, but an explanation is still awaited.

Electricity may act as a local sedative as well as a general one. Some localized hyperæsthesias may be much benefited by galvanism.

Mrs. M., is at times troubled with hyperæsthesia of the vagina, making it almost impossible to wear a pessary to keep up a retroverted uterus. The appearance of the vagina is perfectly normal but this sensitiveness is very considerable. A weak current was used. She could not bear more than three or four cells. The negative pole is applied to the vagina by means of a flat "spoon electrode," and the positive to the lower part of the abdomen. Only a few treatments were necessary to relieve the trouble, and this not because it was relieved of itself, for all previous applications has failed entirely to relieve it.

Miss G. is another similar case. The anode is supposed to be the sedative pole, but in these cases the negative was the one used most satisfactorily.

Headaches are as varied in their causation and character as they are frequent in occurrence. As might be expected, the results from electrization are also varied. Some forms of headache seem to be unaffected by either the galvanic or faradic currents, others are made worse, but there is one class of headaches which seem to be quite uniformly cured, or at least benefited by the use of one or the other current and this class is the one of neuralgic headaches or what are sometimes called nervous headaches, such as are often seen in cases of neurasthenia. This class generally respond to the galvanic current, but in a few cases the faradic is found most efficacious.

Miss G. is subject to occasional violent headaches which nearly drive her wild. She suffers so that she hardly knows what she is doing. The pain seems to be "right in the brain," to use her own words. Remedies of all kinds had been tried without any special result. Morphine in good sized dose had been the only thing that had relieved her. The galvanic current was used, the positive pole being placed at the back of the neck and the negative on the forehead, the current being allowed to pass through my hand. Only a moderate current was used. There was no special improvement during the treatment which lasted fifteen minutes, but about twenty minutes later the head began to feel relieved and the pain gradually passed off. Whether there will be any permanent benefit to the headache in this case I cannot tell, as the applications have been made only a few times. But a general toning-up of the system by means of electricity and general tonics will probably permanently relieve the head. This patient was much run down and of rather a neuralgic tendency.

In some cases the head is relieved while the electricity is being applied.

Miss V. is another similar case, but here there does not seem to be a uniform response to the galvanism. Generally, however, the faradic current will relieve her if the other fails.

Another class of headache that can be benefited by electricity, in a secondary way, is the one that comes from delayed or absent menstruation. This is relieved by employing the electricity to bring on the flow. For this purpose the faradic current is the one I have employed, though the galvanic is said to accomplish the same result and is the one mentioned for that purpose in Beard and Rockwell's book on "Medical Electricity." The same authors, I may say, quote some interesting cases of headache cured by the use of galvanism to the central nervous system.

The nervous headaches are not only benefited at the time, but by the persistent use of the galvanism they are rendered more infrequent.

"In cases of dyspepsia, neurasthenia, anæmia and hysteria, headache was a prominent symptom, which was not only temporarily but permanently relieved by this (electric) treatment," say Beard and Rockwell.

Ranney, Birdsall, Rockwell and others report cases where the severe pains of locomotor ataxia have been much mitigated by the application of electricity.

Most forms of neuralgia are much benefited by the electric treatment, so much so that some have almost entirely discarded internal medication in this affection. Either a strong faradic or a moderate galvanic current may be used; the galvanic is the one generally preferred. Where painful points are to be felt, the electrodes are to be placed successively on each of these for a minute or so. Generally the positive pole is the proper one to apply to these painful spots: but as has already been mentioned, it is sometimes found that the other pole does more good.

Mrs. K., suffering from coccygeal neuralgia had galvanic treatment every other day for about a dozen applications. The current used was moderately strong, one pole was applied over the coccyx, the other about a foot farther up the spine. After several treatments there was considerable improvement but the pain was not entirely dissipated.

She was much run down nervously and is now improving much in her general condition under a course of central galvanic and general tonic treatment.

Mr. B. was suffering from an acute attack of sciatica. There were a number of especially painful points along the course of the nerve. He was put onto a general course of medication but not improving much, a strong faradic current was applied along the course of the nerve. The pain was increased during the treatment but afterwards it was considerably relieved, and after several applications he was so much improved that he thought he could go out of the city to attend to some business, though he was not well yet.

Some pelvic neuralgias seem to yield to the faradic current rather more readily than to the galvanic.

There are certain painful morbid conditions in the pelvic organs and tissues which show much improvement under electrical treatment, so that in this way a secondary or mediate sedative effect is produced.

Some of these conditions may be just named here but it is beyond the province of this paper to enlarge upon them. Fibroids in many cases may be dissipated or at least rendered much less troublesome by electrolysis. Some old chronic exudations may be absorbed owing to the galvanic treatment. Some forms of endometritis can be relieved or cured and strictures of the uterine canal are said to be dissipated.

In order to be successful with electricity, it is essential that the physician understand the working of his battery, that he keep it thoroughly clean, as he would his surgical instruments, and that he test it each time before using it, to be sure that everything is in order. A galvanometer is now an absolute necessity to one using electricity much, though where weak currents are used it is not essential, if you know your battery well and can rely upon it.

Sometimes the physician has to educate his patient up to the use of electricity. An illustration will show my meaning.

A young lady had received electrical treatment at the hands of a distinguished physician in another city. The results were anything but satisfactory. The physician whom she consulted subsequently deemed that electricity was needed. She was very nervous about it, remembering her former experience. For over a week the whole form of giving electricity was gone through with, but no current was used. She became reassured. The current was now used very weak and gradually increased. It was well tolerated and moreover, much benefit was derived from its use.

Other factors, too, play an important part in the successful use of electricity, namely, the size of the electrodes; their saturation; their being wet with a salt solution, when a weak current is to be made more perceptible; the amount of pressure exerted upon them and the placing of them according to the different results which it is desired to attain.

A CASE OF DELIVERY OF THE BREECH BY THE FORCEPS.[1]

BY CHARLES W. TOWNSEND, M.D.

MRS. B., twenty-one years old, primipara, an out-patient of the Boston Lying-in-Hospital, was taken in labor February 22, 1889, at 6.30 P. M. Pains continued at frequent intervals during that night and the next day, when at midnight Mr. C. A. Pratt, externe of the hospital, reported that there had been no advance in the last three or four hours, and that the woman's pulse had gone up to 128, and the fœtal pulse from 144 to 160. On my arrival an hour later, examination showed a fairly developed woman, the pelvic measurements showing nothing abnormal. She was beginning to show signs of exhaustion, the pulse being 128, and the pains were approaching the tetanic type, the contractions being so nearly continuous that external examination was unsatisfactory. The back of the child was on the left, the fœtal heart 160, regular and heard loudest two inches below and to the left of the umbilicus. On vaginal examination the breech was found presenting at the brim; sacrum left anterior; the buttocks greatly swollen. The os was two and a half inches in diameter.

Under ether at 1.30 A. M., February 24th, the os was manually dilated, and a firm constriction ring was felt encircling the child just above the crest of the ilium, the lower segment of the uterus being closely applied to the child and somewhat thinned. Immediate interference was, therefore, strongly indicated. Successful traction by the finger hooked into the groin being impossible on account of the high position and the close apposition of the soft parts, the use of the blunt hook or fillet being deemed inadvisable for the same reasons, and the pulling down of a leg dangerous on account of the constriction ring, the thinning and close apposition of the lower segment of the uterus, Simpson's forceps were applied. One blade was placed over the sacrum, the other over the posterior surface of the anterior thigh. Axis traction-rods were added, and with two or three strong tractions the breech was brought down into the pelvis. The forceps were then removed; but it was found impossible to deliver the breech by traction with the fingers, and they were reapplied without the rods. With strong traction the breech was brought to the vulva, and held from receding by Dr. Edw. Reynolds, while I removed the forceps. The perineum was remarkably resistant and elastic, and was pulled back by Dr. Reynolds while I delivered the breech. An examination after the birth of the child showed only a very slight abrasion on the mucous membrane inside the perineum. The arms, although extended above the head, were easily delivered, and the head came out without any difficulty. The child was born asphyxiated, but after mouth-to-mouth insufflation and artificial respiration it gasped, and in the course of half an hour respiration was regular and the color good, but the child did not cry.

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[1] Read before the Obstetrical Society of Boston, June 8, 1889.

The use of the ordinary Simpson forceps in this case was certainly very satisfactory. They were easily applied and locked, and showed no tendency to slip, as in a case previously reported[2] by me to this Society, where the Miles forceps, especially intended for the breech, were used. The use of the axis traction-rods in the present case partly explained the success. Without the forceps, delivery of the child could only have been effected by the drawing down of a leg, a proceeding, which owing to the beginning thinning of the lower segment of the uterus, would have involved some danger of rupture of the uterus.

The child, a male, showed not the slightest mark of the forceps. It weighed seven and one-half pounds, was feeble, but on the third day took nourishment well, and the breathing became more vigorous. On the morning of the fourth day, however, two large cephalhæmatomata appeared, one on each parietal bone. The child had a convulsion at 3 A. M., and at 11 A. M. died. The autopsy showed, besides the two large hæmorrhages beneath the pericranium covering the parietal bones, a hæmorrhage at the base of the brain. The lower lobes of both lungs were in a partial atalectatic condition. A careful examination of the abdominal viscera was made in order to learn if there had been any lesions there caused by the use of the forceps, but everything was found to be perfectly normal. As the head had been subjected to but little pressure during the labor, there having been no delay in the pelvis, it is difficult to understand why these hæmorrhages occurred, unless the child had a tendency to hæmorrhage. That the cephalhæmatomata were not due to pressure in labor is probable from the fact that they did not begin to appear till the morning of the fourth day.

The mother made an excellent recovery, her temperature remaining below 99°, except on the day the baby died and on the day following, when it reached 100° in the morning. She was discharged well on the tenth day.

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Clinical Department.

A CASE OF FRACTURE OF THE SPINE.[1]

BY A. J. ABBE, A.M., M.D.
Visiting Surgeon to the Fall River Hospital.

On February 16, 1889, D. H., forty-eight years old, of Irish nativity, was driving into a barn upon a load of baled hay. In order to avoid the beams on the ceiling, he bent forward as far as possible, putting his head down between his knees. In this doubled-up position a beam struck him on the back of the neck and shoulders, and crushed his body still farther together. He was picked up in a condition of extreme shock. The next day he was admitted to the Fall River Hospital, service of Dr. Thompson, and was seen by the consulting surgeons and many of the staff. He had rallied from the shock, but complained of extreme pain in the legs when they were moved. Complete paraplegia existed with retention of urine and fæces. The patient was etherized, and there was found a fracture and dislocation of the spine, with separation of the processes by a finger's breadth just above the twelfth dorsal vertebra, fracture and displacement of seventh, eighth and ninth ribs on left side in axillary line, large contusions over and below left scapula and left hip. On account of these latter lesions it was deemed best not to put on a plaster jacket or anything of that nature, but extension was made manually from axillæ and legs, with the man in a horizontal position, and a six-pound weight was applied to each foot, counter-extension being secured by raising the foot of the bed. Adhesive plaster bandage to whole chest. Patient was placed on a fracture-bed, and morphia, one-eighth of a grain, given subcutaneously.

February 18th. Great pain in legs all day. Weights removed at night, and not again used. Pulse 80, temperature 100.2°.

February 19–21st. Delirious and screaming with pain in legs. Morphia, one-quarter of a grain every three hours by mouth. Hyperæsthesia throughout legs. Alcohol lotions on back and buttocks. Pulse 72, temperature 98.6° to 99.8°.

February 22d. Abrasions appeared on back, and bed-sores on buttocks. Great pain produced by any attempt to change position of body to get at back. Impossible to keep him on his side on account of pain. Morphia one-half of a grain every three hours. Bismuth subnitrate as dressing for sores.

February 25th. Less pain in legs. No dejection procured by laxatives or enemata. Fæces removed with the fingers. Heretofore has been catheterized twice daily; now urine has become alkaline, and must be drawn four times a day.

February 26th. Temperature has been gradually rising for a week; now 102°. Pulse 90, weak. Constantly delirious and moving about in bed by means of his hands. Less pain in legs, but great pain if attempts are made to move them.

February 27th. Increased pain and great delirium.

February 28th. A little worse. Pulse 100. Temperature 101.8°.

On March 1st, I came on duty and the case was transferred to me. Urine alkaline, and double the former quantity, about two quarts. Bladder washed with bichloride 1 to 1500, followed by warm water. Soft rubber catheter tied in.

March 2d. Condition not so good. Pulse 110 and weak. Spiritus frumenti, one ounce, every three hours, and all the liquid nourishment possible.

March 5th. Impacted fæces removed digitally.

March 10th. Has improved considerably. Temperature has reached normal. Pulse fairly strong at 90. Catheter has remained in, a slight urethritis not troubling him. Bladder washed out every few days. Impacted fæces removed as often as he feels them. Diet stronger.

March 12th. Delirium gone. Whiskey stopped.

March 23d. General condition about the same. Spends his time reading. Bed-sores on both ischia in good condition. Can slightly move toes of right foot.

April 1st. Greatly improved. Catheter removed, and he is taught to use it on himself.

April 15th. Very slight motion in both feet. After several attempts, enemata of glycerine one drachm, succeed with a little digital aid on his part in producing evacuations.

April 25th. Is twisted around in bed and legs allowed to hang. Considerable discomfort.

April 26th. Is put into a chair. During the past month the daily range of temperature has been between 98.4° and 100°.

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[1] Part of a paper read before the Fall River Medical Society.

[2] Boston Medical and Surgical Journal, January 3, 1889.

May 1st. Dr. Dolan takes charge. Pain on bending legs. Bed-sores healed.

May 4th. Supported in the upright position and as much weight as possible allowed to come on his feet.

May 10th. Assisted to stand on crutches every day. Bowels will move with the aid of aloin and podophylin tablet. A Faradic battery used on spine and legs.

June 1st. Is able to go about on crutches by himself. More power in the left leg than in the right.

July 15th. Has continued to improve. Can walk with one crutch and a cane.

August 28th. Has succeeded in voiding urine. which has become normal, without using his catheter. Discharged.

His present condition (October 15th), is as follows: At the twelfth dorsal vertebra there is a knuckle about quarter of an inch in elevation. He walks without a cane slowly and carefully, swinging his right leg outward. Has very little power in the flexors of the right thigh, and in going up or down stairs can use the left leg only. Bladder normal. Uses laxative pills. No pain. "Knee-jerk" absent. Right thigh measures 13½ inches, calf 11½; left thigh 14¾, calf 11.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

Fourteenth Annual Meeting, held in the Hall of the Massachusetts Institute of Technology, Boston, September 17, 18 and 19, 1889, the President, Dr. H. P. C. Wilson, in the chair.

FIRST DAY. — MORNING SESSION.

THE ADDRESS OF WELCOME

was delivered by Dr. J. P. Reynolds, of Boston.

THE USE AND ABUSE OF ANTISEPTIC INJECTIONS IN OBSTETRIC PRACTICE,

by Dr. H. J. Garrigues, New York.

When one was satisfied that puerperal fever, in any given case, was the result of infection, the use of antiseptic injections was indicated. At the Maternity Hospital, New York, from 1874 to 1884, the mortality had been 4.17 per cent. From 1884 to 1888, during which time the author's method of treatment had been employed, there had been a mortality of only a fraction of one per cent. Vaginal injections before delivery were useful, though they were objected to by many authors on the ground that they were dangerous, that the lubricating mucus of the vagina was removed, etc. While the bacteria on the surface of the vaginal mucous membrane are innocuous, they are not harmless when they penetrate the underlying tissue. They also constitute an element of danger when carried from the vagina into the uterus. A vaginal injection, repeated every three hours during labor, renders the canal aseptic enough for practical purposes. The external parts should be disinfected by rubbing with cotton soaked in the antiseptic used. In normal cases the vagina should not be touched, but only protected by the application of the antiseptic occlusion dressing. Intra-uterine injections should be given when it has been necessary to enter the uterus or vagina by the hands or instruments, or when the fœtus is macerated. A vaginal injection should be used as a therapeutic measure when the lochia are fetid. Vaginal or intra-uterine injections are used in puerperal diphtheria before and after cauterization of the affected locality with zinc chloride. Curetting should be preceded by a vaginal and followed by an intra-uterine injection. In abortions, a vaginal injection should be given before removal of the remains of the ovum, and a uterine injection after removal. He has collected twenty-two cases of death from mercurial poison in obstetric cases; in some of which the mercurial had been employed by men of the highest professional standing and skill. He, therefore, prefers less dangerous agents. Recently he has used a two per cent. emulsion of creolin and is pleased with it, except where he wishes to judge of the condition of the uterus by the condition of the returning fluid, and where it might mask offensive odors. It had valuable lubricating and hæmostatic properties. He prefers for injection a fountain syringe with a glass single-current tube, the patient being always on her back. The bag should be suspended not more than two feet above the body. The tube must not be forced into the uterus, but introduced with great care. Failure to preserve this precaution has resulted in perforation of the uterine wall. Not more than two or three pints of fluid should be used, and if the fluid ceases to return from the uterus, the bag of the syringe should be brought down below the level of the bed, so as to reverse the current by siphonic action. The fluid should ordinarily be lukewarm, except when used as a hæmostatic, when it should be as hot as can be borne. Injections properly administered are a most valuable means of prophylaxis and cure, and are not so difficult to handle but that every intelligent practitioner may employ them.

DISCUSSION.

Dr. Lusk, New York, agreed wholly with the fundamental principles of the paper. He believes that all cases of puerperal septicæmia, where the poison has entered through the vagina, are caused by neglect of ordinary antiseptic precautions by the attendant. Cases resulting from putrid infection, from decomposing organic material, in the interior of the uterus are those most successfully treated by the douche. They are not true septicæmia. In true septicæmia the douche can only benefit before the infecting germs have gained access to the general lymphatic system. Do not interfere with uterus without reason. With repeated douching a portion of the injected fluid will remain behind each time and may cause symptoms of poisoning by the antiseptic used. A slight elevation of temperature or moderately rapid pulse are not symptoms calling for repeated douching. A fetid odor is not necessarily an indication for an injection, for quite commonly it is caused by an ordinary catarrhal endometritis. When the douche is indicated, use it once thoroughly, introduce an iodoform pencil, and let the uterus alone. Do not attend infectious fevers and obstetrical cases at the same time, for in spite of antiseptic precautions you will have cases of puerperal sepsis. Remember that certain other fevers, as typhoid, may resemble true puerperal septicæmia.

Dr. H. C. Coe, New York, said that it was often by no means easy to determine the point of septic infection. Douching should be limited to once or twice in all cases. He had used creolin and thought it was a reliable antiseptic. The great objection was the masking quality of its odor. He considered prophylaxis most important.

Dr. Wm. M. Polk, New York, employed a method differing in details from that of Garrigues. He cleansed the genital tract much as he would the skin: first washing off the mucous surfaces with potash soap and water, and then using a 1 : 5000 bichloride solution or creolin. He would treat the uterus in puerperal sepsis as he would any external suppurating cavity. The vagina being cleansed, the uterine cavity is to be thoroughly cleaned with a cotton swab or curette, washed with bichloride solution and dried with cotton. The cavity is then packed with iodoform or creolin gauze. This is his routine treatment after abortion, and gives him the very best results. It may be necessary to repeat the procedure on the second day.

Dr. P. F. Mundé, New York, said it was absolutely necessary to ascertain the precise source of infection before proceeding blindly to work. One nearly always found blood clots, deciduous shreds, placental tissue, a villous or an inflammatory hypertrophy of the placental site. The cavity of the uterus should be carefully cleared out. He had long advocated the use of the curette. After curetting, use the douche once or twice, then stop. After the douche he employed the antiseptic pad, cold coil and ergot, and cases taken in time did well. The most fatal cases were those of pure septicæmia, where there was no pain, no inflammatory exudation and no fetor. A patient may have a chill and rise of temperature soon after the use of the douche. This chill need cause no alarm, as it is traumatic and convalescence will go on undisturbed. He agrees with Lusk that septic fever is usually the fault of the accoucheur, and that after a normal confinement the use of the douche is unnecessary.

Dr. A. Palmer Dudley, New York, believed that certain cases of puerperal fever were due to infection from a unilateral pyosalpinx. A careful examination of the uterine appendages might reveal the necessity for laparotomy.

Dr. Howard Kelly, Philadelphia, would always wash out the vagina where there was any suspicion of infection. The use of his obstetric cushion was of great value where the surroundings were dirty and poor, in keeping the patient and the bedding dry and clean.

Dd. E. C. Gehrung, St. Louis, thought an injection might carry debris further into the uterus or force fluid into the tubes. He would rather employ an aspirating force, such as is made use of in a double-current catheter he had devised.

Dr. W. Gill Wylie, New York, said that in many cases of puerperal fever the source of the trouble was not in the uterus, but in the tissues of the broad ligaments. In these cases it was necessary to use the knife or aspirator, and evacuate the pus through the vagina. In certain cases, even laparotomy, with removal of the tubes, or washing of the peritoneal cavity might become necessary. He believes in frequent washing out of the uterus, even as often as once an hour. Sepsis he believed to be a more frequent cause of salpingitis than gonorrhœa.

Dr. Garrigues, in closing the discussion, warned against depending solely upon temperature as an indication for uterine irrigation. When there is fever, search over the entire body and find the cause. If about the womb, then use the douche. The distinction between the various forms of septic infection is not practical at the bedside. He approved of the preliminary use of soap and water, recommended by Dr. Polke, but saw no necessity for gauze or other means of drainage. Chills are not common when hot water is employed; but when they occur, the irrigation must not be repeated. Laparotomy after confinement can seldom be appropriate as the patients or their friends will not allow it, and as at most it must be merely exploratory. Frequent irrigation might not be harmful when skilfully employed, but he would prefer an intra-uterine suppository.

A DIGEST OF TWENTY YEARS' EXPERIENCE IN THE TREATMENT OF CANCER OF THE UTERUS BY GALVANO-CAUTERY.

by Dr. John Byrne, Brooklyn.

He had tried to demonstrate as early as 1872 that this means of treatment was less dangerous than any other and that it gave better results than any other means employed. One reason of the slight knowledge of galvano-cautery among the majority of gynecologists was due to the general use of the Paquelin instrument. This he considered an ingenious philosophical toy, but of little use, and dangerous on account of the great amount of radiated heat. The facts and suggestions he now offers are based solely on personal experience. During the last twenty years, he has operated on 367 cases of uterine cancer. Of these 121 were lost to observation before the end of the first year. In fifty-nine cases, the vaginal portion of the cervix was alone involved. The average period of exemption of the cases which were kept under observation being eight years and seven months. In eighty-one where the entire cervix was affected the period of exemption averaged five-and-one-half years. In eight where the disease was confined to the body of the uterus the average period of relief was two years. In all cases of carcinoma we must include all of the cervical tissues no matter how small the growth may be. The cauterization must be thorough, and the patient carefully watched afterward, so that it may be repeated on the slightest suspicion of a recurrence. His usual method is to remove the cervix as completely as possible by the galvano-caustic loop, than to thoroughly cauterize the mucous membrane of the uterus by an instrument passed into the uterine cavity, and a final thorough recauterization of the cervical stump. In advanced cases, temporary relief is all that can be hoped for, but this is great, as after the operation cachexia and anæmia will often temporarily disappear. Recurrence is usually in the lymphatics of the ovary or broad ligament and is attended by much less pain, odor or hæmorrhage. The parts must be quite dry before the cautery is used. Moisture must be repeatedly wiped away and the cautery reapplied until all the tissues within reach are thoroughly seared. The deeper lying cancer cells are destroyed by less heat than will injure normal tissue. The cautery must always be introduced cold and the circuit not completed until it is in contact with the tissues to be destroyed. No medication is usually needed after the operation, except after a few days cleansing douches. He deprecates the heroic surgery now so often advocated, when his method gives better and safer results.

DISCUSSION.

Dr. A. Reeves Jackson, Chicago, said that the careful records of twenty years set forth in this elaborate paper lead to conclusions that cannot have been superficially or hastily reached. They form a striking contrast to most of the recent contributions to the treatment of cancer, which advocated serious cutting operations and showed results which were far inferior to those published by Pawlik and Byrne. Of the three competing methods, hysterectomy, amputation or the cautery, we must adopt that which is best and of the least danger in any particular case.

Dr. Thaddeus A. Reamy, Cincinnati, said that galvano-cautery is subject to the same disadvantages as other means and will not save the patient when the disease is beyond the internal os. In his own series of fifty-seven operations for cervical cancer, twenty-two patients were apparently cured, and he did not think that the results would have been better had the cautery been employed. He thought it was the extent which the disease had reached that determined the limit of successful treatment rather than the particular method employed. Vaginal hysterectomy was sometimes advisable, and would undoubtedly save a few cases where the fundal endometrium was involved. He thought the author of the paper too sanguine in regard to the possible result of his method and too indefinite in stating both the limits of the disease and treatment.

Dr. Byrne said Dr. Reamy somewhat misunderstood his views. It was impossible to define the limits of cancer in any given case. The cautery was of particular value, because, even after the use of the knife, it would reach diseased tissues otherwise inaccessible. He only claimed long-continued relief from symptoms, and not absolute cure. He was entirely opposed to hysterectomy and was sure that the statistics were much less favorable than had been reported.

A MEMORIAL TO THE LATE DR. JAMES B. HUNTER was read by Dr. H. C. Coe.

NATURE AND LIMITATION OF OPERATIVE TREATMENT FOR UTERINE FIBROIDS,

by Dr. Paul F. Mundé, New York.

There was a tendency among the profession at large to look upon all uterine fibroids as requiring some kind of treatment, and the laity in general believed that any tumor was likely to kill, so that there was often difficulty in convincing the patient that her fibroid was comparatively harmless. He questions whether the pathological importance and injurious influence of these tumors warranted the extravagant enthusiasm accorded to their conservative treatment by galvanism. While not wishing to detract from the credit due the originator of the method, he thought the relative value of the treatment exaggerated and its indications extended beyond absolute necessity. He mentioned several cases where heroic operations had been done for innocuous fibroids.

His own observations during the last three years included 2,974 cases of pelvic disease. Of these, 123 were instances of uterine fibroid; 61 of these gave so little trouble that not even medical treatment was thought necessary. In the 62 remaining cases the treatment called for depended upon the location of the tumor and the symptoms produced. Subperitoneal tumors seldom call for treatment, except for pressure symptoms. Interstitial or submucous for pressure or menorrhagia. Cervical for interference with defecation, micturition, parturition, coition or for the bloody discharge to which they may give rise. The author warns against the premature operative removal of sessile fibroids per vaginam, when a few months' oxytocic treatment will often render them easily accessible through the dilated cervix. From a study of the treatment adopted in the 62 cases mentioned, he reaches the following conclusions:

(1) Fibroid growths of the uterus situated near the fundus uteri and showing no tendency to downward development, if requiring active treatment, are best reached from the abdominal cavity.

(2) Tumors situated near the internal os and under the influence of oxytocic measures, or of their own accord showing an inclination to dilate that orifice and encroach upon the cervical canal, can almost always, after due preparation, be removed safely per vaginam.

(3) About one-half of all fibroid tumors, which come under the observation of the physician, require no active treatment of any kind.

(4) Only rapidly growing subperitoneal or interstitial tumors call for or are benefited by galvanic treatment.

(5) The removal by the sharp curette of the hypertrophied mucous membrane of the uterine cavity will often, at least temporarily, relieve the menorrhagia which is the chief symptom caused by the interstitial variety.

(6) Enucleation, after splitting the capsule by means of traction by the finger and some blunt instrument, offers a safe means of cure in cases of interstitial, cervical and submucous corporeal tumors. Certain interstitial tumors, which are so situated as not to be affected by the pressing influence of ergot and influencing the general health by profose uncontrollable hæmorrhages, and certain cases of rapidly growing subperitoneal tumors, in which a thin pedicle cannot readily be formed, may require the removal of the ovaries to check the hæmorrhage and the growth of the tumor.

(7) Laparo-hysterectomy should never be performed merely to relieve the patient of a fibroid tumor, which does not affect her general health and is merely inconvenient or unsightly.

(8) The nearer the menopause the less likely is the fibroid to grow or cause trouble, and, therefore, other things being equal, less likely to call for active operative measures.

OBSERVATIONS ON THE NATURE AND TREATMENT OF FIBROID TUMORS,

by Dr. W. Gill Wylie, New York.

In tumors that are slow in growth, uterine symptoms are usually absent. If pain and general discomfort are present, the endometrium or the uterine appendages are usually involved. In women over forty years of age small uterine tumors may delay the menopause, but otherwise are not usually significant. Pain and failing health at the time of the menopause is usually an indication that degeneration is taking place and hysterectomy may be indicated. Fibroid tumors, like all organic structures, have their periods of growth and decay. The life of a fibroid is usually from two to eight years. A tumor may be quite large, but give rise to no symptoms. Should it, after a period of quietude, begin to grow again, it may then require removal. Severe symptoms of pressure, degeneration or suppuration were indications for operative treatment. Hæmorrhage, if due only to disease of the lining membrane of the uterus, might be controlled for a year or two by curetting. In case it was not, the tubes and ovaries should be thoroughly removed. Hysterectomy could now be done with comparative safety. His own mortality was but ten per cent., and he thought it could be lowered. He had employed Apostoli's method for two years, and believed that its value had been overestimated. Even if it did no harm, it caused delay, and thus might remove a patient's chance of relief by operation. He did not think strong currents of electricity were advisable during the child-bearing period. While electricity would, undoubtedly, stop bleeding from a hyperplastic endometritis, it might cause damage, and was no more efficient or safe than the curette. His opinion as to the value of electricity was admittedly provisional, as his experience had not been very large.

DISCUSSION.

Dr. Reamy approved the conservatism shown in both papers. There was too much disposition to resort to surgical procedure in every case of uterine fibroid. There were very many small tumors which never gave symptoms and the existence of which was not even suspected during life. This fact was of great importance in the consideration of any method of treatment. Martin had recently stated that in thirty per cent. of uterine myomata removed by him, fatty or other degenerative changes were found. As fatty degeneration is the first step in the process of absorption, the inference is, that many of these cases would have gone on to spontaneous cure. These tumors often have a very feeble vascular and nerve supply, so that very little will suffice to interfere with their nutrition. Many may be cured by the use of ergot without the aid of the knife or electricity. He admired Apostoli and his method, but believed he claimed too much. He considered gentle positive galvano-cauterization efficient and perfectly safe. The moderate stenosis which follows is not necessarily bad and may even be beneficial. It does not destroy the possibility of pregnancy. Electro-puncture is dangerous and but rarely to be employed. He had not always succeeded in arresting the growth of hæmorrhage by removal of the tubes. Rapidly growing fibro-cysts in particular he thought always required radical removal. The use of the sharp curette had not been absolutely safe in his hands, as septic symptoms sometimes followed.

Dr. George J. Engelmann, St. Louis, said his results did not come up to his expectations, though in many cases they were satisfactory. Excellent results were obtained in cases where the uterus was surrounded by hard inflammatory masses. He had had favorable results in hæmorrhagic cases. In cases where he had used electricity, the patients were not cured, but were rendered comfortable and able to attend to their duties. We should be satisfied with these results from so safe a method. The treatment should be adapted to the individual case and symptoms. There was use for ergot, for the knife, and for electricity. Electro-puncture he thought apt to produce cystic growth and rapid development.

Dr. James R. Chadwick, Boston, has had fatal results in spite of careful following of Apostoli's rules and without puncture. He has employed this method in 24 cases and has seen improvement in but one. He has never seen any marked diminution in the size of the tumor. He has found difficulty in persuading patients to continue the treatment. He has now given the method up. He does not agree with the views of Dr. Reamy and thinks that as Apostoli claims to have discovered a panacea, he could fairly be subjected to severe criticism.

Dr. Van De Warker, Syracuse, objected to such sweeping denunciation and said that Apostoli's method had a positive scientific value in the treatment of fibroids. Electricity can promote or even initiate cystic degeneration, even when puncture is not used. A high temperature may follow and persist for months. This he believes may be caused by a ptomaine developed by electrical action. He never would employ a current strength of over 200 milliampères.

Dr. M. D. Mann, Buffalo, has used the method for two years, and during this time has only operated twice. He employs the intra-uterine sound and obtains marked improvement in the way of diminished size and lessened hæmorrhage.

Dr. Mundé had noted favorable results from several cases of electro-puncture where the tumor has disappeared, but twice the patients were rather seriously ill after it. He had seen peritonitis develop once after puncture, but, nevertheless, he would use it with antiseptic precautions in certain cases. He believes in Apostoli's method to a limited degree.

(*To be continued.*)

NEW YORK ACADEMY OF MEDICINE. SECTION ON THEORY AND PRACTICE OF MEDICINE.

Stated meeting, October 15, 1889. **Dr. R. C. M. Page**, Chairman.

Dr. A. Jacobi read a paper on

CHRONIC PERITONITIS WITH SPECIAL REFERENCE TO THE DIFFERENTIAL DIAGNOSIS OF SOME OF ITS VARIETIES.

He stated that most of the cases were of a secondary nature, and having referred to a number of the causes that have been found operative in its production, went on to say that perhaps the most frequent cause of peritonitis is a preceding peritonitis. Indeed, in most cases examined after death, the positive proofs of one or more attacks previous to the fatal one are found. He did not remember a case of peri-typhlitis that did not exhibit the adhesions, discolorations and contractions due to former peritonitis; and he thought it probable that there are but few, if any, cases of foreign bodies entering the vermiform process unless the latter has previously lost its elasticity and contractibility by an inflammatory change.

Alterations of the mucous membrane of the intestine, he said, constitute the initial stages of local peritonitis in many instances and of general peritonitis in some. It is not only the *intima* and the submucous tissues which suffer, but the muscular layer also becomes implicated in the morbid process. The vascular connection between the three principal layers of the walls of the intestine is such as to facilitate the transmission of an inflammatory process from one to another, with the results of giving rise to œdematous infiltration, paralysis and constipation. Thus it is also that a mere diarrhœa is able to develop in a shorter or longer time a local peritonitis. No morbid process can remain isolated in a locality supplied with an active blood and lymph circulation, and hence an intestinal catarrh grows to be an enteritis; the enteritis a peritonitis.

This condition of things is still more frequently observed in cases of intestinal ulceration, both acute and chronic. Even without perforation an ulceration will lead to peritonitis which is most local, but liable to change into an acute attack under favorable circumstances. Where there is an open ulcer, or even one that has cicatrized months or years before, in the stomach or in the intestine (no matter of what nature) we frequently find opposite it a local peritonitis. In the peritoneal covering there is a thickening, circumscribed and distinct, which in recent cases is rather soft and accompanied by much vascular injection. In old cases the original cell proliferation has undergone organization and hardening, and the thickened spot is gray or whitish and firm. It has lost its elasticity, and is very apt to burst under a moderate amount of pressure, thus leading to perforation. In the midst of apparent health intestinal perforation will often set in, and death ensue within a day; and at the autopsy the physician will learn that the patient has been the victim of the perforation of the cicatrix of a typhoid ulceration perhaps contracted a dozen years before.

The diagnosis of chronic peritonitis is frequently missed. Unsuspected adhesions often exist around tumors, movable kidneys become fixed, intestines become glued together, all without recognizable symptoms. Respiration is not necessarily accelerated, and particularly is this the case in pelvic peritonitis, perimetritis, and peri-cystitis. There may be occasional vomiting, especially where there happens to be an intercurrent catarrh; but there are other conditions, as, for instance, renal and biliary colic, which are more liable to exhibit this symptom, and to an excessive degree. It is often entirely absent, and even in many acute cases of peritonitis it is not met with. Constipation is frequent, but diarrhœa is not unusual. The horizontal position is often quite uncomfortable, but a common colic, depending on gas not absorbed or expelled, also causes drawing up of the knees. When, however, the horizontal posture is shunned in chronic peritonitis the patient is more apt to remain quiet with raised knees than one who is suffering from flatulency, in which case the limbs are generally turned about continually. While the abdomen is apt to be tumid, it must be remembered that general adiposity is most fully developed in this region, that women who have borne children are likely to have a large and prominent abdomen, that the abdomen of a healthy infant in so large as to measure one-third of its whole length, that a simple hysterical inflation may simulate the tumefaction resulting from peritonitis, and that there may occur a local dilatation of the intestine from constipation only. Moreover, in hysteria there is sometimes met with an œdematous swelling of both hypogastric regions which will complicate the diagnosis still more seriously.

The surface of the abdomen exhibits net-works of dilated veins more frequently in peritonitis and hepatic diseases than in any other conditions. Inspection may also reveal solitary convolutions rising above the surface, and palpation and percussion may lead to the discovery of exudations of various sizes and shapes, nodules, loops and cakes, which may be either hard or soft and which are either organized material, thickened omentum or intestines glued together. Fluctuation will show the presence of fluid more readily than percussion, which may fail in this, that there may be adhesions between the parietal peritoneum and intestines in the flanks. The gas contained in the adherent bowel would yield the tympanic percussion note, although the region might be filled with fluid. A change of position, from one side to the other or from the horizontal to the vertical posture, or *vice versa*, may contribute to dispel the doubt.

A chronic peritonitis is sometimes diagnosticated in the following manner: The patient is on his back, with the extremities now extended, now flexed. Pressure of various kinds, light or firm, sudden or gradual, superficial or deep, is tried in the usual way. According to the seat of the pain experienced, inflammation or adhesion is made manifest. In many cases however, the following manipulation answers best. With the palm or finger deep pressure is first made. Perhaps there is no pain. Remove the pressure suddenly, and a local very distinct and circumscribed pain may be felt. Repetition of the experiment will always give the same result, the symptoms being elicited by the sudden change in the relative position of the bowels. Not only pain, but the presence of hard floating exudations can be distinguished by this and similar manœuvres.

Every change in the relative position of the bowels may give rise to pain. A sharp pain after a full meal may point to adhesions of the stomach; three or four hours after eating, to chronic colitis; a quickened inspiration or a cough, to peri-hepatitis; pain towards the end of micturition, to peri-cystitis. Pain, of varying degree and persistency, is a very frequent symptom in chronic peritonitis. Its variability often depends on the degree of irritation or congestion present, and acute attacks are frequent where there is a cause for exacerbations. The seat of the pain varies with the location and the extent of the lesion. Extensive peritonitis in the pelvis may not give rise to pain except such as results from defecation, sexual intercourse, or micturition. The pain attending peri-cystitis is quite characteristic; appearing when the urine has been about one-half voided. In this, however, it resembles the spasmodic pain of vesical catarrh, with the exception that it is more localized above the pubes and manifests itself more readily by pressure.

In some cases the pain of chronic peritonitis cannot be diagnosticated from the enteralgia produced by other causes, such as abnormal contents, fermentation and flatulency. Indeed, the anatomical causes of chronic peritonitis give rise to these very conditions: for by it the intestinal movements are retarded and from it there may result stenosis and also twisting and adhesions; and through these every function is seriously interfered with.

The results of chronic peritonitis are very various. A simple attack of acute exudation may shape the whole future of the patient, and the histories of previous acute attacks are often not remembered. A few years ago an eminent physician and surgeon in New York, died of peritonitis occurring during convalescence from typhoid fever. He had often complained of enteralgia during the twenty years that Dr. Jacobi had known him, but it was only just before his death that he recalled having had an attack of peritonitis thirty years previously. At the autopsy there were found discolorations of the serous membrane in many places, and degeneration and atrophy of the colon to such an extent as to result in a number of perforations. From such a case it became evident that the most extensive adhesions and other changes may occur without any known history whatever.

In the latter portion of the paper Dr. Jacobi took up the subject of tabes mesenterica. Having mentioned the various symptoms noted in connection with it, he said that the different manifestations met with in different cases appeared to prove that there are several distinct forms of tabes, depending on different causes and attended with varying anatomical alterations. Besides the simple hyperplasia of the mesenteric glands, resulting in obstruction and tubercular infiltration, terminating in the same disturbance of function, there was a third condition met with, namely, chronic tubercular peritonitis. At the present time we were justified in the belief that only those cases of chronic peritoneal tuberculosis will have a chance of recovery which are local, and not the result of general tubercular infection.

The diagnosis of tubercular peritonitis was apt to be quite difficult, and there were many cases which could not be differentiated from non-infectious peritonitis and simple inflammatory processes. There were, however, cases of tumid abdomen with atrophy of both an acute and chronic character, in which the nature of the affection could be made out with some degree of certainty. When the distention of the stomach appeared after an intestinal catarrh, when it continued after the diarrhœa had ceased in frequency, when the temperature remained high, and the symptoms (occasionally) exhibited a typhoid character, the existence of an acute attack of tubercular peritonitis was probable. This diagnosis was rendered the more probable by the presence of some other symptoms, although mistakes were possible even then. Among these were cough, pulmonary symptoms or dulness over the *manubrium sterni* or below one or both clavicles (pointing to swelling of the tracheal or bronchial glands), a concomitant history of tuberculosis in the family, and a more intense degree of emaciation than the short duration of an intestinal catarrh would account for.

The prognosis of so-called tabes mesenterica was always uncertain except in the very worst cases. It was absolutely fatal when there was peritoneal and glandular tuberculosis complicated with, or depending on generalized tuberculosis. In cases where the diagnosis of a non-infectious hyperplasia of the mesenteric glands could be made out, it was decidedly more favorable. When the diagnosis of chronic peritoneal tuberculosis had been made, the case was less promising; although the possibility of recovery, or partial recovery, was not excluded.

DISCUSSION.

Dr. Francis Delafield, said there were few morbid conditions of greater clinical interest than chronic peritonitis. It was one constantly coming up for diagnosis, and as many mistakes were made regarding it as about any other affection with which he was acquainted. He had been accustomed to look at the disease with reference to the anatomical conditions present, and hence divided the cases into three classes, *first*, those in which there are simply adhesions of connective tissue; *second*, those in which there are present both adhesions and fluid, either serous or purulent; and *third*, those in which there is diffuse thickening with fluid, but without adhesions.

In the first class of cases the condition was often not recognized until it was revealed by an autopsy. The symptoms not infrequently corresponded very nearly with those met with in what is known as "irritable colon," and it was very difficult to distinguish between the two. In many cases it was also difficult to distinguish it from tubercular peritonitis, if, in addition to connective tissue adhesions, there was present a large, waxy liver. Still another condition with which it was likely to be confounded was a dilated pylorus, in which the stomach felt to the touch almost precisely like a mass of intestines matted together. Pain in different parts of the abdominal cavity gave the physician as much trouble as anything else in the way of making a diagnosis, and there was, in fact, very little to distinguish the pains due to different causes from each other.

In the second class of cases, where there was fluid in addition to the adhesions, it was often difficult to distinguish the affection from tubercular peritonitis, and the diagnosis between it and carcinoma was also hard to make out. Again, we were likely to be puzzled by the shape which the peritonitis took. Thus, in certain instances fluid was met with in different parts separated by partitions, and there were the physical signs of a solid tumor with fluid. What seemed like a tumor, however, was simply the intestines matted together.

In the third class, where there was thickening with fluid, but no adhesions, it was difficult to distinguish the condition from tubercular peritonitis, from multiple cancer, and from cirrhosis of the liver. Especially was it hard to diagnosticate it from the latter when the capsule of the liver was involved, since we were apt to have the gastric symptoms and the vomiting of blood which were so often met with in that affection.

Dr. Wm. H. Thomson, also spoke of the extreme difficulty of diagnosis in chronic peritonitis, and stated that personally he had never made the diagnosis of this disease without the mental reservation that the condition present might be something else. He recalled, however, two cases of cancerous peritonitis that had one feature in common which he thought might prove of service in other cases in making the differential diagnosis between this variety and tubercular peritonitis. This was the remarkably low per centage of urea in the urine, and it was not found in other forms of chronic peritonitis. In one of these cases there was present one condition which occurred not infrequently in carcinoma of the peritoneum, namely, a distinct ridge extending across the abdomen, and due to cancerous infiltration of the omentum. In cancer of the stomach, Germain Sée had pointed out a diagnostic sign of some value; tenderness and enlargement of the post clavicular glands, and Dr. Thomson said he had found this condition also present in cancerous peritonitis.

The diagnosis of tubercular peritonitis might possibly be made out by the quantity of urea in the urine remaining normal. Again, in cancerous peritonitis there were met the same fluctuations in temperature that were noted in the tuberculous form. In one case of the latter which he had seen in a young man, there was distinct redness about the umbilicus, a sign of tubercular peritonitis to which Wilks had called attention.

When ascites was present in chronic peritonitis, it rendered it very difficult to distinguish between this condition and cirrhosis of the liver, and this was notably the case when the history pointed to peri-hepatitis. The previous history of the patient, as to habits, etc., however, would generally throw some light on the matter. It was a difficult thing to account for many of the cases of chronic peritonitis, and some of them, he thought, appeared to justify the use of the term idiopathic as nearly as any affection we had to deal with.

Dr. Leonard Weber, described a case in which a still-born child, which had been dead for a considerable time before delivery, was found to be the subject of subacute peritonitis, due undoubtedly to syphilis. Another child, three months old, which he was called to attend, had almost from birth presented from time to time all the symptoms of peritonitis, and at the end of the third month it died of this disease. Here, also, the cause of the trouble was syphilis; the infant having, in addition, other well-marked signs of hereditary syphilis. Five years ago, he said, he attended a girl seven years old whose family history was not good; the members of the family showing a tendency to tuberbular meningitis. She had developed chronic peritonitis, and in the course of a year the abdomen had become considerably enlarged. There was ascites, as well as thickening, and the patient was much wasted. By the prolonged use of the hypophosphites and cod-liver oil, and removal to the Catskill Mountains, the fluid and tenderness, and the chronic diarrhœa, from which she was suffering, were gotten rid of; and the last time that he saw her she was perfectly well.

Chronic peritonitis, he went on to say, was met with in abdominal cancer, as well as in tuberculosis, and was also seen in connection with parasitic trouble, not as hydatids of the liver. He had, in fact, never seen a case of true chronic peritonitis which was not of an infectious nature. The cases described in the first part of the paper he would look upon simply as cases where there had previously been acute peritonitis, with accustomed results. Of these, adhesions were the most frequent, and they often had the effect of impeding the functions of the abdominal viscera. He had no objection to calling such cases chronic peritonitis, although personally he did not consider them as true instances of this affection, like the cases to which he had referred. They were not cases of general chronic peritonitis, but exhibited simply the results of adhesions caused by the acute disease, and when in such cases a fatal result occurred, the patient really died of acute peritonitis due to perforation.

As to tabes mesenterica, he believed that this was always a tuberculous affection, and he had been much interested in the recently published reports of the favorable results which had been obtained in this disease by opening the abdomen and dusting the affected parts with iodoform. He had not personally had any experience with this method of treatment, but from what he had read of it he thought it would probably prove a valuable addition to our resources in suitable cases of the disease.

— A veracious daily paper says: "Julian Sterling, of Bridgeport, Ct., lately had his eyeball removed by a doctor to get at a cinder, and while it lay on his cheek, insensate to pain from cocaine, he could see his ear with it."

OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting, June 8, 1889.

Dr. G. H. Washburn read by, invitation, a paper on

THE SEDATIVE ACTION OF ELECTRICITY.[1]

Dr. Baker said he had been interested for some time in the use of electricity and he has especially noted the local and general sedative effects which Dr. Washburn has considered in his paper. In cases where a pessary cannot be tolerated from undue sensitiveness of the vagina, he had found the local sedative action of electricity very satisfactory. He recalled the case of a patient coming to him from Dr. Weir Mitchell with the report that the use of electricity in her case was exciting and could only do harm. For nearly two weeks in order to avoid this excitement he had gone through the appearance of giving her electricity, and then began with a very feeble current, gradually increasing it to a strong current. This she bore well, and made a good recovery, which he thought was largely due to the galvanism.

A galvanometer he considered a necessary part of of the outfit.

Dr. Blake has used electricity with success in cases of amenorrhœa, he had also noticed its sedative action, which he believed was its chief effect in fibroids, and he asked Dr. Baker whether he had seen any material diminution of size in these tumors from its use.

Dr. Baker replied that he felt sure of this.

Dr. Sinclair spoke of hearing Dr. Apostoli's paper in Dublin two years ago, and he felt that there must be truth in it.

Dr. Davenport spoke of the present and exact methods of giving electricity and said that he used the galvanic current for its general sedative action and had lately used the faradic current especially in various forms of pelvic pain, and with more success than by the old method with glycerine and iodine. Especially successful he had found this use two or three times a week in cases of prolapsed ovary, where it not only relieved the pain but helped to draw back the ovary.

In a case whose breasts secreted milk freely, following a miscarriage three years before, he had succeeded in entirely checking the flow after one application of the faradic current; *à priori* one might expect a stimulating rather than a sedative effect in this case. He had found that by a slight increase of pressure of the negative pole on the abdomen he could send up the galvanic current from one of forty to one of seventy milliampères. On this account it is difficult to judge of the strength of the current used. He believed that electrical treatment had a great future.

Dr. Stevens, a guest, spoke of a woman who went about with a small faradic battery and had gained quite a reputation for her power to relieve uterine complaints. He had used galvanism in neuralgias not infrequently.

Dr. Davenport said that he used galvanic current for the absorption of old pelvic exudations and he found that the uterine canal becomes enlarged after one or two applications of the galvanic current, he thought that a current of seventy to one hundred milliampères would cauterize.

Dr. Baker had cauterized with as weak a current as one of sixty milliampères.

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[1] See page 430 of the Journal.

Dr. Sinclair spoke of one as strong as two hundred and fifty milliampères being sometimes used.

Dr. Baker said that in treating fibroids he applied the positive pole in the uterus or vagina where there was hæmorrhage, but at other times he applied the negative pole there. He still believes as he has expressed before, that the best method is that of Dr. Kimball's, introducing the current through needles plunged into the growth itself. He has used the needles of Dr. Apostoli which are introduced in the caual of the uterus, but he thinks this method is inferior, except in cases of small multiple tumors, to the method of Dr. Kimball. The latter method saves much time and is not dangerous.

Dr. Baker had never seen miscarriages from the use of even a strong faradic current given at the first or second month, while a single application with one pole at the sacrum, another at the cervix uteri will bring on the flow in delayed menstruation. He thought that this would be a very safe way of determining whether a woman was pregnant or not.

Dr. Driver, a guest, questioned whether an abortion at the second or third week might not be mistaken for a delayed catamenial period.

Dr. Townsend reported

A CASE OF DELIVERY OF THE BREECH BY THE FORCEPS.[2]

Dr. Green said that this was an interesting illustration of the use of forceps in this class of cases. He believed that harm was often done by the use of the fillet or blunt-hook, and that the danger of drawing down a leg in such a case as the writer described was considerable. If the forceps can be used in such cases, a very important addition is certainly made to our powers. The former experience of Dr. Richardson and himself on the cadaver was opposed to the use of the forceps on the breech, as the instrument generally slips, and, therefore, he had not taught their use in these cases. This may perhaps be changed in the future after experiences like the writer's in these cases.

It seems strange that cephalhæmatomata should have appeared in this case unless as the writer suggested the child was a bleeder. Is it possible that the compression of the breech by the blades of the forceps had caused a flow of blood to the head?

Dr. Sinclair said that he regarded cephalhæmatomata simply as coincidences and that in his own practice they had occurred in the most simple labors.

Dr. J. P. Reynolds said that in normal delivery by the breech great pressure was exerted on this point without causing cerebral hæmorrhage.

Dr. Townsend in closing, said, that as the cephalhæmatomata did not begin to appear till the fourth day he did not see how anything occurring during the labor could be the cause.

He asked the question whether any of the members had used the forceps in these cases.

Dr. J. Stedman afterwards said that he had in a very similar case delivered the breech successfully with the forceps. None of the others present had used them in breech cases.

— A London correspondent of the *Cincinnati Lancet-Clinic*, says that a young medical student in a London Hospital found by the ophthalmoscope in a glass eye "choroiditis with detached retina."

Recent Literature.

Hand-Book for the Hospital Corps of the United States Army and State Military Forces. By **Charles Smart**, Major and Surgeon United States Army. Approved by the Surgeon-General of the Army. New York: Wm. Wood & Co.

This little book treats of hospitals and hospital duties. anatomy and physiology, the elements of first aid, intelligent nursing and ward supervision. That such a book is a necessity in the hospital corps is quite apparent, and it evidently well fulfils the purpose for which it is intended, but it is questionable whether it is necessary for so large a share of the work (136 pages) to be devoted to anatomy and physiology. Major Smart has carefully elaborated all the anatomical and physiological facts bearing on the nursing and care of patients.

We notice one or two omissions of important subjects, such as the directions for the giving of enemata, care of catheters, syringes, etc. On the whole, however, the work is well done, in that it is conveniently paragraphed, neatly bound and has an excellent index.

Operations of Surgery: A Systematic Hand-Book for Practitioners, Students and Hospital Surgeons. By **W. H. A. Jacobson**, F. R. C. S., Assistant Surgeon in Guy's Hospital, Teacher of Operative Surgery and Joint Teacher of Practical Surgery in the Medical School, Surgeon to the Royal Hospital for Children and Women. With 199 Illustrations. Philadelphia: P. Blakiston, Son & Co. 1889.

In this work Mr. Jacobson has undertaken the difficult task of writing a systematic hand-book of operations in surgery with a minute attention to detail. It certainly is one of the most comprehensive works that has come to our notice, and will doubtless be turned to by the practical surgeon, desirous of "looking up" an operation, with a great deal of satisfaction.

With the influx of new surgical procedures that each journal brings forth, it is a particularly trying and difficult task to write a work completely abreast of the times; in fact, such a work would be unsatisfactory, in that in hand and text books we expect to find only that which time and experience have proven to be of value. In many operations Mr. Jacobson has satisfactorily met this difficulty by stating his personal views, which evidently are based on a very wide experience, to assist the surgeon in a selection of an operative procedure.

The personal experience of the writer is introduced into the work in a very satisfactory manner. There is an absence of the personal pronoun, and the deductions which he makes regarding the relative merits of operative procedures are advanced in a positive, judicial manner.

Many of the difficulties met with at the time of an operation, and the troubles ensuing after an operation, which are only known to the practical surgeon, are brought out prominently in this book. The work does not in any manner supplant such a book as Stephen Smith's Operative Surgery, but would rather be an addendum to that work, in that it deals with operative procedures more in detail.

The text is clear, concise and well illustrated. The book itself is bulky and the binding extremely unsatisfactory. We commend this book to all practical surgeons.

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[2] See page 432 of the Journal.

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THE DISPOSAL OF THE SPUTA IN PHTHISIS.

THERE is now general agreement as to the danger of communication of phthisis by the inhalation of the dried products of expectoration. Experiments on animals compelled to inhale sputa-dust have demonstrated this; such experiments were formerly made by Tappanier, and have recently been made by Cornet. This experimenter also claims to have determined a curious fact by collecting the dust and débris from wards in which phthisical patients were confined, and inoculating these products in animals. Of twenty-one phthisical wards, fifteen, or two-thirds, contained the tuberculous virus. The patients were in the habit of spitting upon their handkerchiefs, as well as into spittoons. But in a third of the wards no infectious material was found in the air or on the walls; and this immunity was attributed, not only to the presence of spittons, but also to the precautions enforced to prevent expectoration upon the handkerchiefs or cloths, and the pains taken to promote general asepsis and cleanliness.[1]

Often repeated analyses have proved that the sputa of phthisical persons in very many instances contain Koch's bacillus, and are therefore likely to convey contagion to the predisposed. The chain of evidence seems to be sufficiently complete.

It would seem, then, that the requirement insisted upon by the French Commission, — that the constant use of spittoons should be obligatory on the phthisical, and that they should not be allowed to expectorate on the floor, on carpets or mats, or even, except under peculiar circumstances, on cloths or handkerchiefs, — should be enforced, both in hospital and private practice. In advanced cases of phthisis, it may not be possible for patients to use spittoons, and they may be obliged to expectorate on pieces of cloth or toilet paper; these should be immediately burned.

It is advised that phthisical patients in their daily walks ought to be enjoined not to spit on the ground, on the sidewalk, etc.; this requirement will be difficult of execution unless such patients be provided with a portable spittoon which they are willing to use in public. Spittoons may be placed in all public rooms, in corridors, closets, about places of promenade, and kept partly filled with water, never with sawdust, ashes, or any other dry material.

Spittoons should not be emptied into privies or water-closets, or upon the soil, but into the fire; or they may be dealt with as Hassal advises in the *Lancet:* "A covered vessel of suitable size, and provided with a rod, should be partially filled with a strong bichloride of mercury solution, and into this the contents of the spittoons should be daily emptied, until it becomes necessary to dispose of the accumulated but now harmless sputa, which may then safely be done by means of the closet or soil. The use of the stirrer is necessary, in order to break up the sputa and allow of the effective action of the germicide."

The sanitarily-ideal apartments furnished to consumptive patients are to have no curtains, carpets or hangings; and where mats are required, they should be of some non-absorbent material, as rubber cloth. Such patients should be required to sleep alone, and their clothing and bedding should be kept entirely apart from that of other lodgers. Frequent boiling and cleansing of bed-linen and under-clothing should be enjoined. When a phthisical patient has vacated a room, or has died, the same cleansing and disinfectant measures should be carried out as after a case of an ordinary infectious disease, as scarlet fever or diphtheria.

All these precautionary measures are simple corollaries from facts which have been obtained the past few years as to the parasitic nature of tuberculosis, and the contagiousness of phthisical sputa. Their enforcement ought to diminish the extension of tuberculosis, but would scarcely increase the content and comfort of the great army of the phthisical.

THE REHABILITATION OF THE SPITTOON.

As a further reflection upon the subject of leading editorial mention in this journal, it occurs to us to refer to a paper by Dr. Kretzschmar before the American Public Health Association at its recent meeting at Brooklyn. The ground taken by the speaker was, as might be supposed, not in the interest of the tobacco-chewer, nor of his non-chewing neighbors and victims; it was solely for the hygienic protection of the community against tuberculosis.

"If the spittoon occupied the place in the affairs of modern life that it deserved," said the speaker, "there would be far less danger of pulmonary consumption." "Where do you find spitboxes?" he asked. "Not in the streets, not in the ferry-boats, not in the street railroad cars, not in the steam railway cars, except in a few palace cars." Expectoration in one's handkerchief the speaker showed was most dangerous. It was of the greatest importance that the rooms in which consumptives lived should have no carpets. Linoleum or oilcloth was to be preferred.

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[1] Bulletin de l'Academie de Medecine, August 23, 1883, August 30, 1883, August 6, 1889.

And so this humble utensil, which ever since the days of Dickens' "American Notes" has stood as a by-word and reproach against American social usages, is at last given public recognition as an important instrument of service to the public health.

Now, if the public cuspidor can be properly disinfected; better still, if it can be made of pasteboard, and burned when used; best of all, if it can be used by the tuberculous as well as by the nicotinous subject, we shall welcome it with the intelligence, however the æsthetic gorge may rise at it.

◆

TREATMENT OF POST-PARTUM HÆMORRHAGE BY CURETTING THE UTERUS.

Misrachi, of Constantinople, has published, in the *Bulletin Général de Therapeutique* (August 30, 1889), an article on the treatment of post-partum hæmorrhage by curetting and swabbing out the uterus. This, it will be remembered, is now a favorite method with some gynecologists of treating the uterus for hæmorrhage following abortions, and, doubtless, often meets the indications better than any other means, as when the endometrium is in a septic, sloughy condition, with *débris* of membranes remaining.

Misrachi claims that it has now been sufficiently demonstrated by his own experience and that of other *accoucheurs* that one may with impunity scrape out or curette the uterine cavity after labor at full term, and thus remove a source of infection.

After enumerating the various causes of post-partum hæmorrhage, he admits that the only conditions calling for curetting are: (1) clots in the uterine cavity, (2) retention of portions of the placenta and its membranes. He reports cases where curetting and thorough swabbing of the uterus succeeded in arresting hæmorrhage and saving life where frequent antiseptic injections and all other means had failed.

The instrumental apparatus which he employs consists chiefly: (1) of Lewis' speculum, (2) of a peculiar curette of his own invention resembling a rasp with a long handle, he calls it a scraper (*racleur*); it is dentated on one of its faces in such a way that the teeth, which are very blunt, are turned toward the handle of the instrument. His swab (*écouvillon*) is a long corkscrew arrangement (or sort of gimlet) made of wire terminating in a solid shank; the various turns of the wire are covered with cotton, or some other soft material. This, before using, may be dipped in a mixture of equal parts of tincture of iodine and glycerine. This instrument effectually entangles and removes all loose débris. The use of the curette and swab should be preceded and followed by an antiseptic irrigation with a sublimate solution, 1–2000.

His conclusions are as follows:

(1) Secondary hæmorrhage, *post-partum*, is an accident always embarrassing, always dangerous, and it is important that it be stopped as soon as possible.

(2) Intra-uterine injections, which constitute an enormous progress over the methods of treatment previously employed, are not always efficacious, and often demand a considerable time in order to obtain the final cure.

(3) The antiseptic dressing of the uterus by means of the swab, and any other instrument which may be deemed most suitable, is a method of treatment as inoffensive as, and much more rapid and efficacious than, the intra-uterine injections.

◆

MEDICAL NOTES.

— The fourteenth annual meeting of the Association of Surgeons of the Pennsylvania Railroad Company, was held recently at Pittsburgh, Pa.

— San Francisco has a Chinese physician, Li Po Tai, whose professional income is stated to be $6,000 per month. He has been established in that city for thirty years.

— The test of responsibility when insanity is pleaded as a defence in a murder trial was clearly and tersely stated by Judge Moore in charging the jury in the McElvaine case in New York, recently: "If you believe that the defendant at the time he stabbed Mr. Luca knew the nature and the quality of the act he was doing, and knew it was wrong to do it, you must adjudge him a sane man."

— Mayor Kiesel of Salt Lake City, has called the attention of the City Council to the fact that the city was without a hospital, and that there was great need for such an institution; and in case of contagious disease, the city physician would have great difficulty in dealing with it for want of a proper place to send the patients to. The Union Pacific Hospital is devoted exclusively to the use of railroad men who are injured on the road, and it is not possible to place city patients in this hospital.

— Dr. J. L. Posey of the Marine Hospital Service, on duty at Jacksonville, Fla., telegraphs to the bureau that Dr. Porter reports another sporadic case of yellow fever at Key West, Fla., and in consequence quarantine restrictions have been resumed. The patient is Mr. E. Ellinger, who left Havana, September 21st, for New York, by sea, came from New York by rail to Key West, October 2d, and was taken sick October 21st in a locality of the city distant from that of the former cases.

Quarantine restrictions which had been raised by the State Board of Health were hastily put in force again two days later. The diagnosis of yellow fever, it may be said, has been strongly disputed.

— St. Luke's Hospital, New York, is in need of financial assistance. This fact was demonstrated at its recent annual meeting. The total amount of the trust funds is $659,089,72, all of which is invested according to the laws governing such funds, and the interest revenue amounts to $31,839,68. The general expenses of the hospital for the past year aggregated $92,008,27, and it cost $12,577,25 to improve the property. The Financial Committee's report shows that for years there has been a lack of current income to meet the yearly expenditures, which at present amounts to a yearly deficit of about $15,000. The Board of Managers have been obliged to give the note of the corporation for $34,500 to close the fiscal year, and thus meet the deficit for the past two years. It will therefore be seen that the hospital is spending the income at present rates of interest on $2,000,000, on a capital of $659,089,72.

— Dr. Daniel Ayres, Emeritus Professor of Clinical Surgery, in the Long Island College Hospital, has been extremely liberal with his fortune toward institutions of learning. Last April he added to his many endowments $25,000 to Wesleyan University, toward the establishment of a chair in biology. This gift he completed a few days ago, when he deeded to the university eighty-six acres under cultivation at Montclair, N. J., valued at about $30,000. The gift has not yet been formerly accepted by the trustees, but it will be acted upon at the December meeting of the Board. Every other department of the university had been endowed years ago, Dr. Ayres said, except this one, notwithstanding the fact that it was in charge of a most competent professor, Dr. Conn. The condition is imposed that the money realized from this real estate shall be used solely for the department of biology. The consideration that led to the bestowal of this money is said to be the fact that, in 1841, after he had studied at Wesleyan University three years, Dr. Ayres left it, because it was not equipped to give the students sufficiently advanced instruction in natural science.

— Cable dispatches state that William N. Pethick, Vice-Consul in charge of the United States Consulate at Tien Tsin, China, has notified the Department of State of an important step taken by Li Hung Chang, Grand Secretary of State for China and Viceroy of the Province in which Tien Tsin is located. Li Hung Chang has decided to establish a medical service for the Chinese Army and Navy on the basis of the best Western models. That he may have the best of these to study he has asked Mr. Pethick to solicit the help of the State Department in obtaining a complete collection of the present regulations and various official publications for several years past of the medical department of our army and navy, including the organization and management of hospitals and ambulance service, and the Surgeon-General's report on our late war. The proposed service is to be under a foreign surgeon-general with an adequate staff of assistants. It will include hospitals and dispensaries at various places, a medical school, and native surgeons for the fleet and the military stations of North China. A start will be made, the Vice-Consul says, with a number of young men, educated in the United States several years ago under the Chinese Educational Mission and who have studied medicine under foreign teachers since their return to China. In accordance with the suggestion of the Vice-Consul the State Department will ask the War and Navy Departments to provide the documents requested to be transmitted to Li Hung Chang.

— A New York daily contemporary has collected some interesting points of interest and of comparison between the health of London and that of New York. The deaths in London last year numbered 78,848, or 18.5 per 1,000; in New York 40,175, or 26.33, and in Paris 22.6 per 1,000. The birth returns for New York are incomplete, but the birth-rate in London was 30.7 per 1,000; in Paris 27.0. The male births in Paris were 30,723, the female births 29,913. In London the numbers were: Males, 66,629; females, 64,-451; but in the total population of London there is a majority of 250 females. Premature births in New York numbered 1,155; in London, 2,099. To be equal, the figures referring to New York should only be a third. New York compares unfavorably with London in the matter of suicides. There were 247 in New York and 400 in London. Between 800 and 900 persons take their own lives in Paris every year. In New York 1,138 were killed by accidents; and in London 2,516. There were only 1,892 deaths from bronchitis in New York, while in London there were 10.085. But while some hundreds die every year in London as the result of idleness and obesity, sixty-one deaths were recorded last year from starvation. A decreased death-rate is invariably accompanied by a lower birth-rate. The deaths in London last year were the lowest on record; the births the lowest since 1841. In the western districts, where the wealthy reside, and where the degree of comfort is high, the deaths fell to 16.4, and the births to 25.5; but in the impoverished and overcrowded east, where the poor never get a breath of fresh air, and are huddled together in unhealthy alleys, the deaths rose to 27.2, and the births to 36.5. The people least able to support children are the most prolific, and the higher the degree of social comfort and well being, the less the increase of population.

BOSTON AND NEW ENGLAND.

— There are at the present writing six patients at the small-pox hospital on Canterbury Street, West Roxbury. It is thought that but one of the cases at the hospital will result fatally, that of Thomas F. Campbell, who was found to be stricken with the disease by Dr. Elliott, at the boarding house 153 Richmond Street.

— Some of the physicians, clergymen and other professional men of Malden, Mass., recently held a meeting to take additional action regarding the proposed hospital in Malden. Dr. J. L. Sullivan presided. The meeting decided to secure the incorporation of the Hospital Association. It was stated that a fine, elevated lot of land at the head of Murray Street, at the West End, is at the refusal of the Association. The money needed for the building, land and furnishings is about $40,000, and there has already been subscribed

$12,050. Papers are in circulation for other subscriptions. There is to be a course of entertainments given in the Opera House in aid of the hospital fund.

— The Elliot Hospital at Manchester, N. H., has just been formally accepted by the trustees. The building is a massive structure three stories high, with round towers rising at each side of the entrance, which is situated on the west side of the building. The edifice is built of brick, with brown-stone trimmings, and is arched over the main entrance. The rooms are all ventilated through zinc flues which communicate with the chimney. The building is heated by steam, two boilers furnishing both direct and indirect radiation; but in all of the larger rooms there is a fireplace, and in the women's ward there are two of these luxuries. In all the rooms there are electric bells and speaking tubes, and the building is piped for gas.

— This is the fiftieth year of ex-Governor Alonzo Garcelon's practice of medicine in Lewiston, Me. Now seventy-six years old, he is constantly at work, driving from fifteen to forty miles every day. He has been personally acquainted with five generations of his own family, and is now visiting professionally families in Lewiston whom he has attended for five generations. He is said to have lately proposed the following conundrum: "I am now visiting regularly," said he, "a family composed of the following relatives, all living under one roof; One great-grandmother, two grandmothers, three mothers, one grandfather, one father, three sons, one great-grandson, one grandson, six sisters, six daughters, one daughter-in-law, two great-aunts, five aunts, one uncle, three brothers, one widow, one step-daughter, four granddaughters, one great-granddaughter, one great-grandson, two wives, one husband, one grand-nephew, one grand-neice, four neices, two nephews. The question is, said the Doctor, "how many people are there in the house?"

NEW YORK.

MEETING OF THE NEW YORK COUNTY MEDICAL ASSOCIATION. — EXPENSES OF HEALTH DEPARTMENT. — CASE OF YELLOW FEVER.

— At a meeting of the New York County Medical Association held October 21st, Dr. John Shrady read a memoir of the late Dr. Alexander B. Mott; after which an appropriate minute in regard to the death of Professor Mott was adopted. Dr. A. M. Fernandez presented a specimen of double fœtus, united at the thorax and upper part of the abdomen, whose birth he attended in September. The children were a little more than six months advanced in fœtal life, and were delivered without any special difficulty; presenting feet foremost, but being born dead. One of them measured fourteen inches in length, and the other thirteen and one-half inches; weight four and three-fourth pounds. They were both males and well-developed, and their faces were turned toward each other. They were united throughout the entire length of the sternum and the upper part of the abdomen; there being but a single liver, which was of large size. The placenta was delivered in about twenty-five minutes, and there was but one umbilical cord. The uterus contracted well, and the mother, who was a Cuban lady temporarily staying in New York, recovered without any accident.

On the same occasion Dr. George S. Harrison read a paper on the "Podalic Version in Contracted Pelvis," in which he warmly advocated this procedure in a large proportion of cases. He especially deprecated the putting in contrast of version and the forceps, as so frequently done by obstetrical writers, and expressed the opinion that when version is still practicable, the forceps is contra-indicated; while on the other hand, when the forceps is indicated, the time for turning has already passed. The objections to the use of the forceps in high-standing head, he said, were mainly two-fold. In the first place, the forceps grasps the head in the fronto-occipital diameter, so that the tendency is to enlarge the transverse diameters, which have to pass the conjugata, and at the same time to prevent the over-riding of one parietal bone upon the other. In the second place, it is not in the power of the forceps to accomplish the inflection of the bones, which is an important factor in the moulding of the head.

The advocates of version, he said, were divided into portions, according as they respectively formulated the therapeutical indications. The one side recommended waiting, as long as the passage of the child's head appeared possible and devoid of danger; while the other side sought to avoid the possibility of a perforation, by a *prophylactic* version, before any symptom of danger threatened the mother. Dr. Harrison said that for years his own practice had been based upon this view, and that he could not too strongly urge the advantages of this method of procedure. Long ago Sir James Y. Simpson had argued that the protraction of labor was *per se* dangerous both to the mother and child, and that any operation was dangerous and fatal in proportion to the length of time allowed to elapse before the artificial delivery was accomplished. For these reasons he declared that in proportion as turning was practiced earlier, so far would it be attended by greater safety and greater success.

— The Board of Estimate and Apportionment has cut down the appropriation for the expenses of the Health Department for the year 1890 from $417,096, the sum asked for, to $391,500. Among the items in which the allowance is reduced are hospital supplies, $4,800, and disinfectants, $3,700. For the present year the total allowance for the department was $413,600.

— Just as the British steamer *Hondo* from Greytown and Belize was entering port on the morning of October 23th, one of the saloon passengers died of a fever which was regarded as suspicious in character, and the vessel was detained at quarantine and thoroughly fumigated. The autopsy showed conclusively that the cause of death was yellow fever, and the body was taken to Swinburne Island and cremated. There was no sickness among any of the other passengers or among the crew.

Correspondence.

[From our Special Correspondent.]

PARIS LETTER.

Congress of Hydrology. — Congress of French Surgery.

Paris, October 13, 1889.

Mr. Editor, — Of the numerous International Congresses that have been held in Paris since the opening of the Exhibition in May last, there has been none more important or interesting than the Congress of Hydrology, which has just terminated its meetings. The object of this congress was to elucidate a certain number of those obscure problems which concern the nature and therapeutic value of mineral waters.

One of the most original memoirs produced at the congress was that of Dr. Schlemmer, on microbes and thermal waters. According to the author, there is found a certain number of microbes in these waters, but far from offering any danger the microbes of mineral waters seem, on the contrary, to possess beneficial properties. It is thus that in certain springs of Vichy, Chantemesse and Frémont have isolated a micrococcus possessing a most pronounced digestive power on albuminoid alimentary substances, which it transforms into peptones. With the knowledge of this fact, it will be seen that it is impossible to imitate this natural mineral water by the aid of the bicarbonate of soda. No artificial, chemical combination would be capable of conferring on a water this micro-organic life, any more than of conferring upon it the electro-dynamism of telluric elaboration.

The origin of the gases contained in the mineral waters were well demonstrated by Dr. Labat. He stated that whether they proceed from the air or from watery vapor, or whether they are manifestations of the soil or of volcanoes, the gases do not ordinarily play a preponderating rôle in the curative action of mineral waters. Nevertheless, nitrogen is an agent distinctly sedative and anti-catarrhal; sulphuretted hydrogen, a modificator of the skin and of mucous membranes, carbonic acid, an excitant of the blood-vessels and nerves. It is capable, for instance, of arousing the languishing functions of the digestive mucous membrane.

Dr. Durand-Fardel, the renowned veteran of hydrological science, read a programme of instruction for the benefit of medical men, in order that they may learn how to use these waters as they do other therapeutic agents. The author remarked that it is unfortunately too true that the necessity for such instruction is greatly felt.

Drs. Constantin Paul and Bouloumié communicated to the congress very remarkable reports on the resources which the Thermes of France offer for the treatment of the heart and of the blood-vessels, and for that of chronic affections of the kidneys.

Dr. Caulet called the attention of practitioners to the possible cure of grave utero-ovarian neuralgia for which thermal treatment is essentially beneficial. He took the opportunity of bringing these facts to notice at the moment when surgeons, forgetting the mishaps of operative intervention. attempt to cure such affections by the ablation of the painful genital organs.

Dr. Grimaud claims for chloruretted and sulphurous waters the most extensive' curative power in osseous and articular affections of tubercular or scrofulous origin. The sulphurous group is better suited for the suppurating period of osteo-articular lesions. Sea-bathing also acts as a tonic, resolvent and reconstituent, but, as recalled by Dr. Jules Simon, it has the inconvenience of an exciting and enervating maritime atmosphere, which is much to be feared for children who are already neuropathic, and in whom the power of reaction is rather weak.

The fourth Congress of French Surgery was held in Paris from the 7th to the 13th of October, under the presidency of Baron Larrey. The meetings were largely attended, and some of the papers read were most interesting. I cannot, however, in the space of an ordinary letter do more than refer briefly to some of them.

Dr. Bloch, of Copenhagen, read a note on practical modification of the antiseptic method. He remarked that the method of the antiseptic treatment of wounds which is now employed, has this inconvenience, namely, that the material for dressing rapidly loses, after its preparation, a part or the whole of its antiseptic value. Moreover, the preparation of these pieces of dressing in great abundance is not sure, and it exposes the use of them to certain dangers. The author, therefore, recommends that the material for dressing should be sterilized and put up in packets, which are not to be opened until required to be used. The antiseptic selected is then applied to the material, and being thus freshly prepared loses nothing of its qualities.

Dr. Roux, of Lausanne, made a communication on the treatment of suppurating perityphlitis. This surgeon is a partisan of the incision being made as soon as pus is detected, and thus avoid peritonitis and stercoral fistulæ. The following is the procedure adopted by Dr. Roux: By the aid of an incision analogous to that for the ligature of the iliac artery, the surgeon seeks for the cœcum and the appendix vermiformis. If one or other of these parts gives to the fingers the sensation of infiltrated tissues, one may affirm the presence of a purulent collection, which is almost always met with in continuing the examination. The dangers of peritonitis are avoided by the early opening of the abscess, and the surgeon has nothing to fear during the examination, as after the third day, the adhesions are sufficiently numerous to prevent the opening of the peritoneum. Dr. Roux insists on the advisability of early surgical intervention in the treatment of suppurating perityphlitis, as there is a too great tendency to abstain from all active measures in these cases, under a false notion that spontaneous cure is the rule. At the same time he would not have it supposed that every case of perityphlitis should be operated on, but the expectative treatment should not be too much prolonged.

Dr. Demons, of Bordeaux, read a note on the value of the capillary punctures of the intestines in certain cases of intestinal obstruction. He referred to cases where the intestinal occlusion was determined by sub-peritoneal inflammation, which may, at a given time, determine compressions, and thus arrest the course of the fæcal matters. Dr. Demons had recourse in six cases to the puncture of the intestine by the aid of Dieulafoy's aspirator, and with very encouraging results. He, therefore, thinks that the medical man has thus in his hands a powerful means which is susceptible, in certain circumstances, to avoid the necessity for a laparotomy.

In a paper, on the immediate and distant results of operations practised for local tuberculosis, Dr. Le Dentu, of Paris, stated that operations undertaken against local tuberculous affections are frequently efficacious, on the condition that they are performed early and in a complete manner. He thought that in ridding the organism of the foci of infection, one might shelter the patients from ulterior visceral accidents, of which peripheric tuberculosis would have been the starting-point. He often noticed that the existing tuberculous lesions, which had not been directly interested in the operative act, were often beneficially influenced, and far from being aggravated. He had thus seen anal fistulæ amended and disappear spontaneously after operations on tuberculous knees. Hence, he would consider that the multiplicity of tuberculous determinations would constitute an indication than otherwise for operating.

Dr. Schwartz, of Paris, expressed the opinion that operative interventions for local tuberculosis are the more favorable according as the localization is the more limited. and that the subject may, after the operation, be placed in the most hygienic conditions. There are cases, however, in which visceral tuberculosis was observed in patients who had been operated on for local tuberculosis, or even for any other cause, but who were suspected of having a tuberculous taint.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 19, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	641	226	17.28	12.80	7.20	1.92	5.28
Philadelphia	1,010,245	327	116	11.10	12.90	1.20	2.70	7.50
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	165	55	14.03	12.20	4.27	3 66	4.27
St. Louis	450,000	164	67	16.47	8.54	3.66	2.44	9.93
Boston	413,567	175	45	12.54	14.25	1.71	3.42	6.27
New Orleans	250,000	107	25	9.34	18.68	2.79	—	1.86
Cincinnati	225,000	102	—	16.66	13.62	3.92	.98	8.82
Washington	225,000	100	48	22.00	8.00	8.00	4.00	8.00
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	25	8	8.00	12.00	8.00	—	—
Charleston	60,145	—	—	—	—	—	—	—
Portland	40,000	13	2	2.69	7.69	—	—	7.69
Worcester	78,292	22	7	13.62	22.70	—	9.08	—
Lowell	71,518	22	8	27.24	18.16	4.54	—	22.90
Cambridge	65,552	25	6	12.00	28.00	8.00	4.00	—
Fall River	62,647	25	7	32.00	8.00	8.00	—	20.00
Lynn	53,334	19	—	—	31.56	—	—	—
Springfield	40,731	13	4	15 38	38.45	—	—	7.69
Lawrence	40,619	20	11	30.00	5.00	5.00	—	25.00
New Bedford	37,253	16	5	30.75	12 50	30.75	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	13	—	23.07	—	7.69	—	15.38
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	4	—	—	8.00	—	—	—
Haverhill	26,058	—	—	—	—	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	1	—	—	—	—	—	—
Newton	21,553	5	2	20.00	—	—	—	20.00
Malden	19,774	6	1	—	33.33	—	—	—
Fitchburg	17,534	8	4	12.50	25.00	12.50	—	—
Waltham	17,332	9	4	11.11	33.33	11.11	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	8	1	12.50	—	—	—	12.50
Quincy	13,728	8	3	12.50	—	—	—	—

Deaths reported 2,043: under five years of age 655; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 319, consumption 269, acute lung diseases 216, diphtheria and croup 129, diarrhœal diseases 95, typhoid fever 45, whooping-cough 15, scarlet fever 12, malarial fevers 13, measles 1.

From whooping-cough, New York 5, Philadelphia 3, Boston and Washington 2 each. Baltimore and Cincinnati 1 each. From malarial fevers, New York 6, New Orleans 5, Baltimore 2. From scarlet fever, Philadelphia 5, St. Louis 4, New York 3. From cerebro-spinal meningitis, New York 3, Cincinnati 2, Philadelphia, Worcester, Fall River and Quincy, 1 each. From measles, New York 1.

OBITUARY. PHILIPPE RICORD, M.D.

Dr. Philippe Ricord, whose death we briefly referred to last week, was born at Baltimore on December 10, 1800. He was the grandson of a distinguished physician of Marseilles, and the son of a once wealthy shipowner and member of the Compagnie des Indes, who came to the United States in 1790, in the hope of retrieving his fortunes. Philippe Ricord was the brother of Jean Baptiste Ricord, an accomplished physician, scholar, musician and painter, and of Alexander Ricord, once a physician in the French Navy. After pursuing a course of scientific studies with his brother Jean, Philippe began the study of medicine in Philadelphia In 1820, he visited Paris, taking with him a collection of animals for the National Museum. In 1826, he received the degree of M.D., and began to practice at Olivet, near Orleans. In 1828, he returned to Paris, and delivered a course of lectures on surgery; and in 1831, he was appointed surgeon-in-chief to the Hôpital des Veneriens du Midi. At this hospital, from which he retired on account of age in 1860, he gained a great reputation as a specialist. By a decree of July 28, 1862, he was appointed physician-in-ordinary to Prince Napoleon; and on October 26, 1869, he was named as consulting surgeon to Napoleon III., whom he had attended during a recent illness, and who in return had presented him with a snuff-box and 20,000 francs. He was made a commander of the Legion of Honor in 1860, and a grand officer in 1871, for services as president of the ambulance corps during the siege of Paris. He also received many foreign decorations He continued to practice his profession until his death Among the many publications of his long life, we can mention only a few: "De l'Emploi du Speculum" (1833), "De la Blennorrhagie de la Femme" (1834), "Monographe du Chancre" (1837), "Traité des Maladies Veneriennes" (1838), "De l'Ophthalmie Blennorrhagique" (1842), "Clinique Iconographique de l'Hôpital des Veneriens" (1842–'51), "De la Syphilization, etc." (1853), "Lectures sur la Syphilis" (1854).

OBITUARY. IRA H. BARTHOLOMEW, M.D.

Dr. Ira Hawley Bartholomew, aged sixty-one, ex-Member of the Michigan House of Representatives, ex-President of the State Medical Society, ex-President of the Michigan Agricultural Society, and who held the office of Mayor of Lansing for three consecutive terms, died October 18.

BOOKS AND PAMPHLETS RECEIVED.

The Value of Creosote in Fifty Cases of Disease of the Air-Passages. By Wm Perry Watson, A M , M.D., of Jersey City, N. J. Reprint. 1889.

A Treatise on the Science and Practice of Midwifery, By W. S. Playfair, M D , LL.D. F.R.C.P, etc. Fifth American, from the seventh English Edition With notes and additions. By Robert P. Harris, M.D. Five plates and 207 illustrations. Philadelphia: Lea Brothers & Co. 1889.

An Experimental Study in the Domain of Hypnotism, By Dr. R. von Krafft-Ebing, Professor of Psychiatry and Nervous Diseases in the Royal University, Gratz, Austria. Translated from the German, by Chas. G. Chaddock, M.D. New York: G. P. Putnam & Sons. 1889,

A Text-Book of Animal Physiology. With introductory chapters on general biology and a full treatment of reproduction. For students of human and comparative (veterinary medicine, and of general biology. By Wesley Mills, M.A., M.D., L.C.P L , etc., with over 500 illustrations. New York: D. Appleton & Co. 1889.

The meteorological record for the week ending Oct. 19, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: –

Week ending Saturday, Oct. 19, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	7.00 A. M.	3.00 P. M.	7.00 A. M.	3.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...13	30.10	44.0	47.0	40.0	92	62	77.0	N.	N.E.	14	17	R.	O.	14.30	1.12
Monday,..14	29.99	43.0	46.0	40.0	92	85	98.0	N.	N.E.	24	24	R.	R.	12.40	.74
Tuesday,..15	30.01	48.0	53.0	44.0	65	70	68.0	N.	N.	19	15	C.	C.	4.20	.10
Wednes...16	30.20	44.0	49.0	38.0	62	67	64.0	N.	N.E.	10	3	C.	C.		
Thursday,.17	30.07	43.0	51.0	35.0	76	79	78.0	N.W.	S.	2	12	C.	O.		
Friday,....18	30.04	53.0	60.0	46.0	55	49	52.0	W.	N.E.	14	4	C.	C.		
Saturday,.19	30.15	52.0	64.	39.9	64	75	70.0	W.	S.	7	12	C.	C.		
Mean for Week.	30.08		53.0	40.0			73.0								

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 19, 1889, TO OCTOBER 25, 1889.

Taylor, Marcus E., Assistant surgeon U. S. Army. Relieved from duty at Fort Stanton, New Mexico, and ordered to Boise Barracks, Idaho. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Hall, John D., assistant surgeon U. S. Army. Relieved from duty at Fort Niagara, N. Y., and ordered to Madison Barracks, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Girard, Alfred C., surgeon U. S. Army Relieved from duty at Boise Barracks, Idaho, and ordered to Fort Niagara, N. Y. Par. 10, S. O 242, A. G. O., October 17, 1889.

Ewen, Clarence, surgeon U. S. Army. Relieved from duty at Madison Barracks, N. Y., and ordered to Willet's Point, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Gardner, Edwin F., assistant surgeon U. S. Army. Relieved from duty at Fort Lewis, Col , and ordered to Fort Porter, N. Y. Par. 10, S. O. 242, A. G. O . October 17, 1889.

Gibson, Joseph, R, surgeon U. S. Army. Relieved from duty at Fort Sheridan, Ill., and ordered to Governor's Island, New York Harbor. Par. 10, S O. 242, A. G. O., October 17, 1889.

Maus, Louis M., assistant surgeon U. S. Army. Relieved from duty at Fort Porter, N. Y., and ordered to Fort Stanton, New Mexico. Par. 10, S O. 242, A G O., October 17, 1889.

Kendall, William P., first lieutenant and assistant surgeon U. S. Army. Leave of absence extended one month. Par. 6, S. O. No. 244, A. G. O., October 19, 1889.

Mearns, Edgar, A.; captain and assistant surgeon U. S. Army. Granted leave of absence for two months. Par. 5, S. O. No. 244, A. G. O , October 19, 1889.

So much of Par. 2, S. O. No 241, October 16, 1889, from this office, as directs Captain **Louis Brechemin**, assistant surgeon, to report for duty at Fort Apache, Arizona Ty , is revoked. He will report in person to the commanding officer, Presidio of San Francisco, Cal , for duty at that station. Par. 7, S. O. No. 248. A. G. O., October 24, 1889.

Eagan, Peter R., captain and assistant surgeon U. S. Army. On being relieved from duty at Camp Eagle Pass, Tex., will report in person to the commanding officer Fort McIntosh, Tex . for duty at that station. Par. 7, S. O. No. 248, A. G. O., October 24, 1889.

Wakeman, William J., captain and assistant surgeon U. S. Army. Relieved from duty at Fort Walla, Washington Ty., and will report in person to the commanding officer, Fort Bidwell, Cal., for duty at that station. Par. 7, S. O No. 248, A G. O., October 24, 1889.

Davis, William B., captain and assistant surgeon U. S. Army. Relieved from further duty at Fort Porter, N. Y., and will report in person upon expiration of his present sick leave of absence to the commanding officer Fort Preble, Me., for duty Par. 6, S. O. No. 248, A G. O., October 21, 1889

Clendenin, Paul, first lieutenant and assistant surgeon U. S. Army. Relieved from duty at Fort McIntosh. Tex., and will report in person to the commanding officer, Camp Eagle Pass, Tex., for duty at that station. Par. 7, S. O. No. 248, A G. O., October 24, 1889.

Chapin Alonzo R., captain and assistant surgeon U. S. Army Relieved from duty at Newport Barracks, Ky., and will report in person to the commanding officer, Fort Yates, Dakota, for duty at that station. Par. 7, S. O. No. 248, A. G. O., October 24. 1889.

Raymond, Henry J., first lieutenant and assistant surgeon U. S. Army. Upon being relieved from duty at Fort Bidwell, Cal., will report in person to the commanding officer Newport Barracks, Ky., for duty at that station. Par. 7, S. O. No. 248, A G. O., October 24, 1889.

Shannon, William C., captain and assistant surgeon U. S. Army. Relieved from duty at Fort Yates, Dakota, and will report in person to the commanding officer Fort Apache, Arizona Ty., for duty at that station. Par. 7, S. O. No. 248, A. G. O., October 24, 1889.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING OCTOBER 19, 1889.

Vaughn, G. T., assistant surgeon. When relieved to proceed to Evansville, Ind., for temporary duty. October 9, 1889.

Perry, T. B., assistant surgeon. Ordered to temporary duty at San Francisco, Cal. October 15, 1889.

Vansant, John, surgeon. Granted leave of absence for fifteen days. October 16, 1889.

Goldsborough, C P., surgeon. Leave of absence extended thirty days on surgeon's certificate of disability. October 18, 1889.

SOCIETY NOTICES.

Boston Society for Medical Observation. – A Regular Meeting of this Society will be held at 19 Boylston Place. Monday evening, November 4th, at 8 o'clock Readers: Dr. T M. Rotch, Difficult Dentition; Dr. M Prince, The Present Method of giving Expert Testimony in Medico-legal Cases, as illustrated by one in which large damages were awarded, and in which contradictory medical evidence was given. Report of the Committee on Admissions. T. F. Sherman, *Secretary*.

Surgical Section of the Suffolk District Medical Society – There will be a Meeting of this Section on Wednesday evening, November 6th, at 8 o'clock. Dr. D. W. Cheever, will make a few remarks on Old and New Surgery. Dr. A. T. Cabot, will read a paper on Bony Anchylosis of the Temporo-Maxillary Joint relieved by Osteotomy of the Neck of the Inferior Maxilla Dr. C. L. Scudder will report cases of Congenital Dislocations of the Shoulder-Joint.

George H. Monks, M.D., *Secretary*

CORRECTION.

Dr. O. H. Everett, of Worcester, Mass., writes in regard to remarks attributed to him in the report of the annual meeting of the Obstetrical Section of the Massachusetts Medical Society, June 11, 1889, and published in the Journal, Vol CXXI, Page 45. "In the first place, I was not present at the meeting of this Section In the second place, the remarks are not such as I should have made if I had been present and had made any I *do* use antiseptics in obstetrics, and have had no cases of septicæmia for which to blame myself or any one else."

DEATH.

Died in Boston, October 12, 1889, Levi Farr Warner, M.D., M.M.S.S., aged sixty-seven years, eleven months.

Original Articles.

CASES OF SUB-DIAPHRAGMATIC ABSCESS.[1]

BY A. L. MASON, M.D.

Sub-diphragmatic abscesses which are non-pyæmic and not tropical in origin are of uncommon occurrence. They may find their starting-point in the perihepatic, perinephritic or perisplenic region, and are usually due to injuries, to secondary inflammation from calculi or perforating ulcers of the stomach and duodenum, or to cancer, syphilis or tubercule. They are sufficiently rare and dangerous to be of great interest both to the physician and the surgeon, and the difficulty of determining their precise seat is often insuperable, owing to the distance of the pus from the surface, so that much time is usually lost in forming a correct opinion. If the patient is not seen until the thoracic or the lower abdominal cavity is invaded, as is often the case with those who appear in hospitals, the secondary pneumonia, pulmonary abscess, pleurisy, empyema, intestinal inflammation or peritonitis may still further obscure the diagnosis.

The following cases, illustrative of some of these conditions and complications came under my care last winter at the Boston City Hospital.

CASE I. ULCER OF DUODENUM CAUSING PERIHEPATIC ABSCESS CONTAINING AIR AND SIMULATING PNEUMO-THORAX; ADHESION OF RIGHT LUNG TO DIAPHRAGM; PLEURITIC EFFUSION; AUTOPSY.

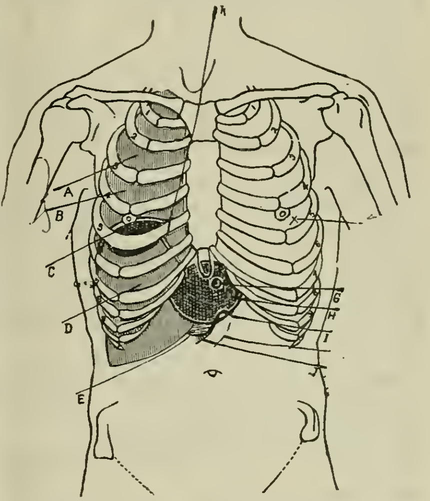
I. N., carpenter, age fifty-six, entered the City Hospital, November 25, 1888. Fifteen months before, he had had a severe gastric attack with extreme pain and collapse from which he had recovered in a short time sufficiently to resume his work although he has never felt entirely well since. Four weeks before entrance he was again seized with violent pain at the epigastrium and in the right side, so severe that ether was administered. Since then the pain has been constant with six or seven exacerbations none so bad as the first. At times he had been very tender just below the ribs on the right side in the region of the gall-bladder, and there were other times when there was no tenderness. The tongue had been dry, but there had been no vomiting and no discharges of blood from the bowels at any time.

At entrance appetite was poor; bowels constipated; temperature 100° F; pulse 104; respiration 24. The urine was normal. He was well developed and nourished. At the epigastrium was a tense bulging, tender to the touch, as large as the palm of the hand, resonant on percussion. Over this area a metallic tinkling was heard when the patient coughed.

Examination of the chest showed that the heart was displaced an inch and a half to the left. Left side otherwise normal.

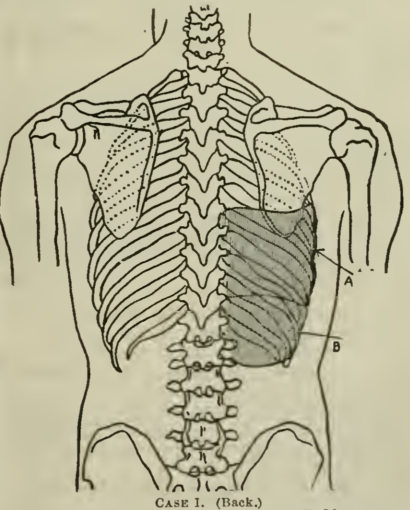
Over the right front there was increased percussion resonance to the seventh interspace in the mammary line. Throughout this area the breath sounds were faint and marked metallic tinkling was heard on forced inspiration or cough, also a metallic vocal resonance. From the seventh space downward flatness on percussion extended two inches below the margin of the ribs where the lower border of the liver could be felt.

In the right lower axillary region and the lower half of the right back were signs of fluid: flat percussion and absence of respiratory sound and vocal fremitus. No succussion sounds were heard.



Case I. (Front.)

A. Adherent lung.
B. Metallic tinkle.
C. Sub-diaphragmatic abscess.
D. Liver.
E. Gall-bladder.
F. Heart's apex.
G. Metallic tinkle.
H. Tympanitic bulging.
I. Ulcer of duodenum.
J. Adhesions between gall-bladder and duodenum.



Case I. (Back.)

A. Tapped.

B. Liver.

It will be observed that the metallic sounds in front with the exaggerated percussion tone and faint breath sounds, the presence of pleural effusion and the displaced heart were suggestive of hydro-pneumo-thorax. The metallic tinkling was loudest, however, at the epigastrium, apparently below the diaphragm, and vocal fremitus was not altogether absent over the anterior chest-wall.

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[1] Read before the Section of the Suffolk District Medical Society for Clinical Medicine, Pathology, and Hygiene, May 8, 1889.

The breathing was embarrassed and painful with spasmodic cough and marked increase of pain when the patient tried to lie on the left side. No characteristic sputa.

On the following day twenty-four ounces of serous fluid tinged with blood were removed by the aspirating needle which was inserted in the fifth right intercostal space, post-axillary line. This gave considerable relief to the dyspnœa and pain. The bulging and tenderness at the epigastrium disappeared, as well as the metallic tinkling.

For the next two weeks the patient was more comfortable the chief complaint being of pain in the right shoulder and arm, at times quite severe and suggesting disease of the liver or peri-hepatic tissues. Dr. Delano, who sent the patient to the hospital and examined him several times subsequently, was of the opinion that an abscess existed below the diaphragm as there had been no thoracic symptoms at the outset. Further exploration, however, failed to find it.

From this time there was little change in condition; the tongue was heavily coated; occasional slight vomiting; stools entirely normal throughout; considerable liquid food was taken; there were no chills at any time; fever was constant though moderate.

One month after admission the patient fell into collapse from which he rallied for a day and died December 24th.

Autopsy. — By Dr. Delano. The peritoneum in general was everywhere smooth, pale and glistening; but the liver and diaphragm were united through a recent inflammatory process. On separating the adhesions, when the convexity of the liver was reached, the hand entered a flat cavity the size of the two palms, containing several ounces of laudable pus, spread in a thick layer between liver and diaphragm, rather posteriorly.

In the duodenum, situated laterally and superiorly, was a circular loss of substance extending through all the coats, and having edges smooth and non-infiltrated. The diameter of the ulcer was one-and-one-half centimetres (three cent piece), the distance from its edge to the pylorus the same. This ulcer opened into a fistulous tract running on the under surface of the liver, between gall-bladder and longitudinal fissure, to the anterior edge, from which point it could be traced on the superior surface till it entered the abscess cavity. This space on the under surface was shut off from the general peritoneal cavity by the recent adhesion of gall-bladder, duodenum and liver. From the edge of ulcer to the edge of liver was three centimetres.

The bile ducts were pervious, the gall-bladder empty and not remarkable. The parenchyma of liver showed nothing especially worthy of note.

The right pleural cavity contained two quarts of sero-fibrinous fluid. Between lung and diaphragm the pleural surfaces were united by recent adhesions. No perforation of diaphragm.

The other organs showed a few unimportant and pathological changes.

Remarks. — The severe pain in the region of the gall-bladder had suggested at first the passage of gall-stones. There was no vomiting, however, and the stools were normal. At the time of entrance to the hospital the complications had so far obscured the primary disease that a correct diagnosis was nearly impossible. It was only at the autopsy that the curious auscultatory phenomena were explained. The presence of an abscess containing air on the upper surface of the liver, communicating by a sinus with the duodenal ulcer which allowed partial discharge of the pus by the intestine, seemed to account for the metallic sounds which transmitted upward through the adherent lung. Pus was at no time seen in the stools.

I have not been able to search far in medical literature for reference to conditions which may simulate pneumo-thorax, and know of but one or two writers who have mentioned cases like the one here reported. Probably there are others.

Habershon in his work on "Diseases of the Abdomen," relates the case of a woman who had gastric ulcer which had caused a large abscess communicating with the stomach and bounded by the ribs, spleen, liver and diaphragm. At the base of the left lung there were amphoric breathing, metallic tinkling and ægophony. The pleura was not perforated, so it was concluded that the signs of pneumo-thorax were produced by air in the peritoneal abscess.

The late Dr. Austin Flint, mentioned the observations of Leyden on the rare occurrence of such abscesses containing air situated just below the diaphragm, oftener on the right between the diaphragm and the upper surface of the liver, resulting from perforating ulcers of the stomach or duodenum and producing signs of pyo-pneumo-thorax. Dr. Flint does not speak of having met with such cases himself, but states that Leyden[1] diagnosticated the affection in two instances.

The diagnostic points are said to be the presence of a faint respiratory murmur, the absence of cough and expectoration at first, and the history of symptoms referable to the stomach or duodenum. In the case which I have just reported it was also noticed that the metallic sounds were loudest below the diaphragm and that the vibration of the anterior chest-wall was not entirely abolished as in pneumo-thorax. There were no succussion sounds.

CASE II. — SUPPOSED GASTRIC ULCER; SUB-DIAPHRAGMATIC ABSCESS; ADHERENT LUNG; PNEUMONIA; AUTOPSY.

I. S., aged twenty-two, was seen by me December 5, 1888, when she complained of gastric pain and discomfort after eating. No vomiting. She had been anæmic for a year or more, but otherwise well and the catamenia were regular.

A week later, December 12, she was sent to the hospital. The dyspeptic symptoms were about the same, but she had been exposed to the cold and complained of pain in left hypochondium. On admission it was noted that she was well developed and nourished; anæmic; pain in region of stomach with moderate tenderness; appetite poor; bowels constipated; temperature, 99.2°; pulse, 92; respiration, 24; urine, normal; tongue slightly coated; no vomiting; heart and lungs normal.

She was up and dressed for two days, but on December 14 she complained of much more gastric pain, referred chiefly to the lower border of the ribs in the left side, and aggravated by motion of her diaphragm in forced inspiration. There was tenderness all over the abdomen, but no distension; bowels constipated; vomiting.

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[1] Zeitschrift für Klin. Medicin. Band 1, page 320.

On the following day it was noted that the breath sounds were suppressed in left side and back below seventh rib, above which the respiration was tubular, and the percussion tone vesiculo-tympanitic; a few crackling râles of high pitch; no cough. Aspiration in seventh interspace, post-axillary line, found no fluid.

The signs of consolidation in the left posterior lobe remained until death, two months later; but at no time was there cough or expectoration.

Urine drawn with catheter. No chills; no sweating; fever.

Vomiting became a prominent symptom, with looseness of the bowels at intervals. Several times the vomitus contained a considerable quantity of foul smelling pus, with what appeared to be blood-stained shreds.

These evacuations were followed by relief of pain and diminution of fever, as if an abscess were discharging through the stomach. Several hard, tender glands were observed above the left clavicle, disappearing in about a week.

January 2d. Patient began to complain of pain at the border of the ribs on the other side, and tenderness over the liver, which, however, was neither enlarged nor depressed.

January 8th. Violent chill, lasting fifteen minutes. Vomiting of foul pus; no straining; no cough.

January 10th. Pain in right shoulder. Offensive vomitus containing shreddy masses of foul odor.

January 12th. Pain in right shoulder severe, and that in left side much less.

January 14th. Vomited half a pint of greenish, bile-tinged fluid containing large shreds of sloughy-looking material in part stained with blood.

January 16th. Breathing in left side improved. Heart's apex in the fourth space inside nipple line. Painful symptoms transferred chiefly to right side. Up to this time no abscess could be localized, and several explorations with the needle has failed to find pus.

January 19th. Several ounces of foul pus were evacuated by incision through the tenth space in the anterior axillary line on the *right* side. A drainage-tube was inserted four inches, apparently following the upper surface of the liver, and the cavity was washed out with creoline solution. This cavity discharged freely for ten days, and then gradually closed up. During this time the fever, vomiting and septic symptoms abated, and the patient became more comfortable, sleeping on either side, which she could not do before.

January 30th. Vomiting again frequent, but not offensive. More pain in back and left side. Respiration in left front good as far as middle axillary line. Behind this and below scapula nearly flat percussion and tubular breathing. *No cough. No expectoration.*

February 9th. By aspiration in the seventh space, left side, a small amount of foul pus was withdrawn. Dr. Doe, under whose care the patient now was, made an opening, but found only a small quantity of pus, apparently in a pocket between the pleura and ribs, the lung being adherent. Death, February 11th.

Autopsy. — Dr. H. L. Smith made the following record of the post-mortem which he performed:

Emaciation extreme. Both pleuræ adherent to chest walls, especially in lower left side.

Right lung engorged. Lower lobe of left, solid with no crepitation; on section it presented a granular surface with grayish-yellow color, and was very dense. This lung was firmly adherent to the diaphragm, and the solid lower lobe was cut through in removal, a portion adhering to the diaphragm, in which no perforation was found.

Liver, spleen, duodenum with stomach, kidneys, pancreas, diaphragm and portion of left lung removed *en masse.* There were firm, fibrous adhesions in the region of the cardiac end of the stomach, binding all the above organs together and to the parietes.

In the space between the spleen, stomach and diaphragm, just below the latter and next to the wall of chest and abdomen, was a small abscess cavity, with rough, grayish surface, empty and communicating with incision in left side. It would have contained three or four ounces. No communication with perinephritic tissue.

On the posterior surface of the stomach there was what appeared to be the cicatrix of an ulcer, not depressed, but with radiating lines. Stomach otherwise normal.

Liver, kidneys and heart, pale and opaque. The abscess in the right side had closed, and the sinus was not found.

The spleen seemed to form the lower border of the pus cavity, which surrounded its upper part. This organ was unchanged on section. Capsule at upper end thickened.

Intestines normal.

Diagnosis. — Abscess in tissues above spleen and below diaphragm, with adhesive peritonitis and pleuritis; pneumonia; granular degeneration of liver, kidneys and heart.

Remarks. — The history of this case made it almost certain, at an early period, that there was an abscess adjacent to the stomach, below the diaphragm; but its situation, high up under the arch, prevented drainage until the pus had burrowed first to the right side and then to the left, and the patient had become exhausted by pulmonary and septicæmic complications.

No open ulcer of the stomach was found. The history for the previous year, the marked pallor and anæmia, and the local symptoms pointed strongly to that affection, but it was not determined in what tissues the abscess originated.

The early adhesion of the left lung to the diaphragm, and the long-continued solidification without cough or expectoration, indicated the secondary nature of the pulmonary affection.

CASE III. — PERINEPHRITIC ABSCESS (TUBERCULAR); NECROSIS OF DIAPHRAGM; EMPYEMA; AMYLOID DEGENERATION; AUTOPSY.

R. R., laborer, aged thirty-three, entered the City Hospital, April 12, 1889. He stated that he had had inflammation of the bowels ten months before, more or less pain ever since, chiefly in the right hypochondrium; but he had only given up work *six days* before admission. Pain had been the only complaint. This had extended to the right lower axillary region. There had been no chills, vomiting or headache. Cough and expectoration had not been noticeable. The bowels had been regular. No appetite.

At entrance it was noted that he was well developed, but emaciated and cachectic in appearance, with bulbous finger ends. Temperature 100° F.; pulse, 80; respiration, 36.

Physical examination showed the heart to be in the normal position.

The right side of the chest expanded less than the left, and there was tenderness over the right lower intercostal spaces in the axillary line, with retraction of the same spaces in front, as if the lung were adherent. Anterior percussion gave a dull tympanitic tone, and the respiratory sounds were weak. Posteriorly, below the angle of the scapula was flatness, with absence of respiratory sound; diminished vocal resonance and fremitus; the signs of fluid. Above, weak broncho-vesicular breathing, and increased vocal resonance.

Liver flatness began at the seventh interspace in front and extended two inches or more below the ribs, and to the left as far as the end of the tenth rib on that side. At this point the enlarged spleen was also felt, extending below the ribs.

The abdomen was somewhat distended and tender chiefly in the right hypochondrium.

Examination over the region of the right kidney showed no swelling nor marked pain on pressure.

The urine was acid, of normal quantity; specific gravity, 1,011; and contained one-fourth per cent. of albumen with large and small hyaline and granular casts.

April 13th. Ten ounces of thin, foul pus were withdrawn by aspiration through the eighth space posterior axillary line. The character of the pus, the proximity to the diaphragm, the adherent lung, and the pain in the right hypochondrium gave rise to the opinion that the empyema was secondary to an abscess below the diaphragm, which had probably been for a long time latent. The urinary changes and the enlarged liver and spleen in connection with prolonged suppuration also suggested amyloid degeneration.

The patient was informed that no further interference was advisable, as he was almost moribund at the time of entrance; but on the 18th, six days after admission, he asked to have an opening made, and it was done. A tube was inserted through the ninth interspace, posterior axillary line, without ether, owing to the feeble condition. A moderate amount of offensive fluid escaped, and the cavity was washed out. This was of no benefit, and the patient died a few hours later.

Cough, expectoration and râles; chills, sweating and vomiting had been noticeably absent. Exhaustion and diarrhœa were the only symptoms of septic poisoning. The temperature was sub-normal.

Autopsy. — The following post-mortem notes were made by Dr. Gannett:

Much emaciation. Heart normal.

Lungs. Pleural surfaces on left side free from adhesions. Left lung voluminous, of a coal-black color, with numerous black nodules about the size of a filbert meat. Right pleural surfaces adherent throughout by firm, fibrous tissues, the lung presenting appearance like the left. The lower posterior portion of the right pleural cavity was represented by an abscess cavity with grayish-black ragged walls covered with fibrinous false membranes, containing thin, foul-smelling pus. This cavity communicated with incision in right side.

Below the diaphragm, and involving the upper part of the right kidney, was an abscess cavity the size of a large fist, with ragged, grayish-black walls in part cheesy. No direct communication between these two cavities above and below the diaphragm could be made out; but the wall separating them was thin, and in a necrosed condition.

Spleen much enlarged, showing the condition of "sago spleen."

Left kidney enlarged, pale; cortex showed uniform pallor, and with iodine a marked amyloid reaction.

Liver showed a large number of gray nodules about the size of a millet seed (tubercle); and in the upper right posterior portion there was a marked growth of fibrous tissue forming a wall of the abscess previously described.

Lymph glands in neighborhood of the pylorus considerably enlarged; gray on section.

Diagnosis.— Pigmentation of lungs; chronic adhesive pleurisy; circumscribed empyema; peri-nephritic abscess, with necrosis of diaphragm; amyloid degeneration of spleen and kidneys; tuberculosis of liver; hyperplasia of abdominal lymph glands.

CONCLUSION.

Diagnosis.— Adhesion of the lung to the diaphragm, *with signs and history of inflammation below;* fluid, sometimes foul, limited to the lower and posterior pleural cavity; the physical signs of consolidation or compression of the posterior lobe; slight fremitus, dull tympanitic percussion tone and diminished respiration over the anterior surface *to the base*; absence of cough and expectoration; these are the chief points upon which a diagnosis of sub-diaphragmatic abscess may be made when exploration fails to reach it.

In these three cases the impaired contractility of the lung adherent to the diaphragm, with consequent distension of the air vesicles, gave rise to the signs of emphysema in front.

Remarks.— The tendency of the pus in these cases was to find its way upward and laterally rather than downward. This may have been due to the recumbent position, the strong adhesion below, and the intra-thoracic force or suction which maintains the arch of the diaphragm. In Case I the abscess did not penetrate the thin gall-bladder or intestines, which were contiguous, but turned upward over the anterior surface of the liver and reached the top of that organ. In Case II it found its way posteriorly to the surface on opposite sides of the body.

Perforation of the diaphragm probably occurred in Case III by a small opening which closed after the fluid was withdrawn. Bursting into the lung took place in no instance, although this accident sometimes aggravates the course of perihepatic abscess. Dr. A. T. H. Waters, of Liverpool, in his "Contributions to Clinical and Practical Medicine," gives the details of four such cases, of which two were verified post-mortem and one recovered. The patients had lived in the tropics or had suffered from dysentery. No relief was practicable. Dr. G. H. Lyman reported two cases in the JOURNAL for 1882,[3] also occurring at the City Hospital; one peripleuritic, and the other perinephritic, abscess, which were similar to these. One recovered.

The *Journal of the American Medical Association* says that Rembrandt's celebrated picture, entitled "A Lesson in Anatomy," has been purchased by Mr. Ellesworth, for the Institute of Art of Chicago. Until recently it has been in an art gallery at the Hague.

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[3] Boston Med. and Surg. Journal, vol. cvi, pp. 279, 481, 492.

EUPHRASIA OFFICINALIS.[1]

BY G. M. GARLAND, M.D., BOSTON.

Once upon a time, it was written of euphrasia, that it possessed wonderful powers, and produced cures little short of marvellous. To-day, after searching through a large number of modern text-books on therapeutics, I can record only three (Phillips, Potter, United States Dispensatory) which give even a meagre notice to this drug. The following extract is the entire description of the drug in the United States Dispensatory:

> "Euphrasia Officinalis, *Eyebright*, a small annual plant, common to Europe and the United States, without odor, and of a bitterish, astringent taste. It was formerly used in various complaints, and, among the rest, in disorders of the eyes, in which it was thought to be very efficacious, and in the treatment of which it is still popular in some countries. The probability is that it is nearly inert."

Going back to older writers, we find the following notices:

> "Dictionnaire des Drogues," Chevallier and Richards, Paris, 1827: "This plant has a bitter taste, slightly astringent with little or no odor. From the absence of these qualities one might say with temerity that the medical properties of euphrasia ought to have little energy. It is difficult to understand what gave to the drug a reputation, so ostentatious (fastueuse) among the ancients who lauded it for a crowd of afflictions, and especially for eye troubles."
>
> "The New Dispensatory," William Lewis, Dublin, 1778: "Hildamos says he has known old men of seventy, who had lost their sight, recover it again by the use of this herb; later practitioners, however, have not been so happy as to observe any such good effects from it. At present it is totally and not unjustly disregarded."
>
> "Pharmacopœia Officinalis and Extemporanea, or a Complete English Dispensatory," John Quincy, M.D., London, 1733: "Euphragiæ, *Eyebright*, is also sometimes wrote, euphrasia, and *eutrasia*, and by some called *ophthalmia*, and *ocularia*, eyewort. The *euphrasia officinarum* of *Caspar Banbine* is the eyebright here intended; and it flowers in *June*, *July*, and *August* sometimes. It is reckoned a great dryer, . . . and in that respect a *cephalic*; for which reason likewise it is smoaked as *tobacco*. 'Tis of great esteem in distempers of the eyes. But its juice is much preferable to the distilled water, which used outwardly is affirmed to take off all specks, films, mists and suffusions."

We perceive that this drug gains in favorable notice as we go back into the past. With this history before us it would seem *à priori* that euphrasia must have possessed some virtues to acquire such great renown; and, on the other hand, its fall from favor must have been due to its failure to accomplish work for which it had been so injudiciously advised. It has indeed descended into such poor estate that it is not only dropped out of text-books, but also out of the memory of those who handle drugs. A patient of mine, who recently asked for the tincture of euphrasia in one of the leading drug stores of Boston, was told that she had confused the name of a drug with that of a manufacturer, and that she probably wanted some preparation of Fraser of New York.

I desire to narrate the experience which I have had with euphrasia during the last four years. My attention was first called to the drug by Dr. Clark, of Milford, who told me that it possessed great potency in the treatment of head-colds, and the following cases will illustrate the success which I have had with it:

Case I. Mrs. D. for a number of years has been subject to violent attacks of head cold, accompanied by severe headache, anorexia and confinement to the bed for several days. I treated her at first with quinine, which produced no appreciable effect. Then I gave her atropine and morphine combined, and in sufficient strength of atropine to dry the throat. This combination would diminish the intensity of the coryza, but caused so much discomfort from the dry throat and dilated pupils that the patient preferred the ordinary run of the disease. Then I gave her the tincture of euphrasia, and told her to take *ten* drops in a little water every two hours, beginning with the first indication of trouble. She has kept a bottle of this tincture in her house for the last three years; and in reply to my query a few days ago, she said that the medicine still works like a charm. If she takes a dose the moment her throat begins to feel scratchy, it aborts the attack. If for any reason she cannot obtain a dose until the coryza is fairly started, the medicine will so modify and abate the intensity of the attack that she is able to keep about, and suffers relatively little discomfort.

Case II. Mr. W. B. was invited to a dinner at six o'clock. He came to my office, at 4 P. M., suffering from an acute coryza; he was sneezing, and his nose was running freely and required the constant use of a handkerchief. He said he could not attend the dinner. I gave him ten drops of tincture of euphrasia and ordered the dose repeated just before six o'clock. It dried up the secretion so that he attended the dinner with perfect comfort, and retained only a slight reminiscence of the coryza next day.

Case III. Mrs. G. says that the medicine will stop her head-colds in two hours, if taken promptly at the beginning.

Case IV. Miss F., a singer, has occasional head-colds, which also descend into a subacute laryngitis and hoarseness, which prevent her from singing for five or six weeks. Last month she came to me for the first time, and I gave her euphrasia. The coryza was already well under way, and, therefore, the drug did not abort it, but the intensity of the attack was so mitigated that she had scarcely any hoarseness, and was able to resume singing in a chorus in ten days. She also sang a solo in a fortnight.

These cases might be multiplied still further, but they all illustrate one thing which is that euphrasia, as the ancients claimed, is a *drier* and exerts a powerful action upon the recently inflammed mucous membrane of the nose and pharynx. I have had no success with it in nasal discharges which have advanced to a purulent or muco-purulent condition.

Now this is, undoubtedly, a limited field of action, and it may hardly seem worth while to spend much energy upon a drug of such narrow limitations, but I notice that patients who have once experienced the beneficence of euphrasia in a head-cold cannot speak too enthusiastically about it.

Potter says, "In hay-fever also it is of decided utility in mitigating the catarrhal symptoms, and in the acute coryza of measles it will be found an excellent remedy."

I have reserved to the end of my article the one use of euphrasia which will prove the greatest comfort to the physician: I refer to its use in the acute coryza of babies. Sprays, snuffs and gargles are out of the question with babies, and none of the ordinary cold remedies possess the slightest influence over a coryza. A few drops of euphrasia in half a glass of water, which the little sufferer can drink *ad libitum*, will give prompt relief without disturbing the digestion. Moreover, the tincture of euphrasia is very aromatic, and smells like new-mown hay, and babies like it.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Massachusetts Medical Society (Suffolk), May 8, 1889.

If the profession will take this drug for what it is worth, and restrict its use to its proven possibilities, I prophesy the greatest satisfaction from its employment. It will not abort every head-cold, but it will promptly and generously diminish the discomfort of the patient, and greatly shorten the duration of the affliction.

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ANTIPYRETICS.[1]

BY EDWARD N. WHITTIER, M.D., OF BOSTON.
Visiting Physician to the Massachusetts General Hospital.

Our chief infectious fever, typhoid, has been selected for the study, in its clinical aspect, of refrigeration, and the influence on the disease, of the application of cold to the surface of the body.

The tables of results, as expressed in mortality rates by percentages, wherein the salutary influences of cold baths are compared with all other previous and present methods, ought to carry conviction most profound to the most skeptical — a conviction, that in not conforming to the requirements of the system of Brand, we should fall far short of doing our duty in this most important and frequent class of cases. Juergensen stated, in the Congress at London, that "whenever he attempted to deviate from the rigorous cold water treatment, he was compelled to return to it in order to obtain the best results." I appreciate fully the objections which may be raised, growing out of the lack of the proper mechanical appliances, to enable us to comply with the requirements of the method of Brand in all its precision of detail, but the difficulties to be overcome are far from being insuperable.

I append herewith the method of refrigeration employed by Brand. The reasons why other physicians have failed to secure corresponding results in the reduction of the mortality rate, in typhoid fever for instance, will be found in defective application of the method, insisted upon by Brand; the defect will be found in the absence of the needful rigorousness and precision, so strenuously insisted upon by the originator of the system.

The method of refrigeration employed by Brand is thus described by Dujardin-Beaumetz, in a lecture delivered in Cochin Hospital in 1878.

"The bath-tub shall be placed near the bed. The bath-tub shall contain a sufficient quantity of water, so that the patient when immersed in it shall be completely covered up to his neck. The temperature of the water should not exceed 20° C. (78° F.) Tripiér and Bouveret distinguished in this regard three varieties of cold baths, — baths with a temperature of 22° to 24° C., of 18° to 20° C., and of 14° to 15° C., and they regulate the temperature of the bath by the intensity of the fever and the resistance to refrigeration.

"Before carrying the typhoid patient to the bath-tub, and in order to diminish the trying and painful sensation of cold, the abdomen is rubbed with the water of the bath. Then the patient is placed in the bath, and all the time that he remains there the head is showered with ice-cold water. It is understood that the hair shall have previously been cut short in order to render these affusions more active. Brand recommends also to rub the belly and back of the patient during the time of the bath. The patient is kept in the bath about fifteen minutes; in certain cases the bath may be prolonged to twenty minutes. At the end of this time the patient is taken with shivering and chattering, and is then removed to his bed, and his lower limbs are covered with blankets. As for the rest of the body, in summer only a simple sheet is employed, and in winter a sheet covered by a woollen blanket.

"At the end of twenty minutes the temperature is taken, and during the period of comfort which ensues, some nourishment is given. Every hour the temperature is taken anew, and when the mercury resumes its ascending march, and reaches 39° C. (102° to 103 F.), whether during the day or night, the patient is again plunged into the cold bath. Brand has fixed at about three hours the interval which should elapse between the baths, but this period may be made much shorter, and reduced to two hours, or one hour and a half if there be very high fever heat and great resistance to refrigeration. Brand insists also that in the interval of the baths the nurses should keep constantly applied over the abdomen of the patient compresses wet in cold water, and renewed as fast as they become warm.

"It is well on the inception to resort to cold ablutions with towels (not sponging). Friction aids heat elimination by dilating the cutaneous vessels, and the shock refreshes the nerve-centres (Winternitz). Then the patient grows accustomed to the more energetic bathing, which may be opened with the half bath, combined with gentle chafing, and gradually culminate in the full bath at 65° F.

"The patient, when taking the bath and at all times, should be well supported with such nourishment as is suitable for his condition, — milk, wine, broths, peptonoids, etc. No other treatment is employed.

"Such is Brand's method in all its rigorousness and exclusiveness. In order that it may give success it must be applied from the very onset of the fever. In proportion to the tardiness and lateness of its inception, the chances of success are lessened. In reference to no mode of treatment has the appeal to statistics been more confidently made, and the advocates of refrigeration have endeavored to show that when Brand's system has been followed to the letter the mortality from typhoid fever is reduced to a very low figure."

Internal antipyretics or antithermics have had a large and enthusiastic following. It has not yet been demonstrated by those most skilled in the employment of these remedies to reduce temperature, that the duration of febrile disorders has been shortened, that their course has been modified in any essential particular, or that the mortality rate has been lessened. An eminent authority two years ago claimed that the mortality rate had been reduced by antithermics, but stated that his belief was that the small improvement was attributable to the comfort afforded the patient more than to the removal of danger from high temperature; this year the same authority, after more careful study of the subject, states that he is prepared to agree with Brand that the only advantage from antipyretic medication seems to be that the patient is able to die with a nearly normal temperature.

The aspirants for antithermic honors have come upon the stage of action with imposing credentials and with all of the influences of hereditary tendencies towards the reduction of high temperature whenever and wherever found, by the use of antipyretic medication. The vast majority have played a feeble part in the process assigned them, and claimed for them, and have failed signally to gain for themselves a fixed position in the list of therapeutical remedies upon which reliance may be placed.

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[1] Read at the annual meeting of the Massachusetts Medical Society, June 11, 1889. (Concluded from page 429 of the Journal.)

Quinine, carbolic acid, salicylic acid, salicin, salol, antipyrin, antifebrin, thallin, kairin, acetphenetidin, pyrodine, methacetin, phenacetine, — how formidable the array; how few the survivors!

I have the pleasure of presenting a summary of the latest and most advanced views and conclusions bearing upon the physiological, therapeutical and toxicological effects of those antithermics which in my opinion are entitled to a place as remedial agents in pyrexial disorders.

ANTIPYRIN.

This is a grayish crystalline powder of a slightly bitter taste, very soluble both in water and alcohol.

Nitrous acid produces with antipyrin a new compound, iso-nitroso-antipyrin, which crystallizes in small grayish-blue crystals. The sweet spirits of nitre of the Pharmacopœia almost invariably contains free nitrous acid, and on addition of antipyrin a greenish color is produced by the formation of iso-nitroso-antipyrin. Very large doses of this product produce no perceptible effects on dogs and rabbits. The practical result, therefore, of mixing antipyrin and spt. ætheris nitrosi is simply to render a certain amount of the former inert.

Given to animals in moderate toxic doses antipyrin causes first a cataleptic state, then increased reflex activity, opisthotonos and convulsions. Larger doses cause complete relaxation, loss of reflex activity, and death.

These results seem to be due to an action both on the spinal and cerebral centres and on the sensory and motor nerves, but the method of action is still obscure.

Moderate doses of antipyrin increase the arterial pressure, toxic doses lower it, and in the frog, paralyze the heart. These effects are probably due to vaso-motor spasm, since antipyrin seems to have an action similar to that of ergot in checking hæmorrhage.

Considerable doses in man produce a livid color of the face, especially marked in the lips, due to the production of methalmoglobin, though the blood corpuscles themselves are not destroyed even after toxic doses. Ordinary doses do not affect the respiration, but toxic doses diminish and finally arrest it.

Antipyrin is rapidly eliminated by the kidneys, appearing in the urine in half an hour and being mostly eliminated within twelve hours.

The urine is sometimes increased in amount, but may be diminished if free sweeting has been produced. Urea is said to be decidedly diminished.

Temperature is usually lowered in normal and almost always in febrile conditions. The fall begins in about half an hour and is accompanied by profuse diaphoresis.

The depression of temperature usually lasts longer than that caused by other antithermics, continuing from two to twenty hours. It is accompanied by a reduction in the rate, but not in the force of the pulse.

This fall is independent of diaphoresis or of any action upon the general circulation, and is probably due to direct influence upon the heat centres.

Experiments upon dogs show that both in normal and in febrile conditions the fall of temperature is due to decreased heat production and also decreased heat dissipation.

Antipyrin has been recommended as an antithermic in almost all febrile conditions. It has frequently, however, caused collopse, and must be used with great caution. In phthisis especially, it appears to produce so much feebleness and depression as, in the opinion of various observers, to forbid its use. In typhoid the patient is usually more comfortable under the action of the drug than at other times. Sometimes, however, it causes a distressing vomiting. The antipyretic uses of the drug are at present attracting less attention than its analgesic properties.

The dose for an adult should not exceed twenty grains, and H. C. Wood advises that the first dose should not exceed ten grains. These doses may be repeated two or three times, at intervals of one or two hours. Three grains is sufficient for a child of two years, and should not be repeated more than once.

Idiosyncrasies in regard to susceptibility to the drug are not uncommon, and alarming conditions have been produced by small doses. A quantity well borne at one time may cause the most dangerous symptoms at another. In kidney disease elimination is interfered with, and toxic effects may arise. In some cases it is said to act injuriously on the heart muscle, and weakness of the circulation is a certain indication. In children with pneumonia grave toxic symptoms have been seen.

The following are some of the effects which have been observed to follow doses of fifteen to thirty grains: — Dizziness, vomiting, gastro-enteritis, increased frequency of pulse and respiration, dyspnœa, cyanosis, dryness of throat, coryza, urticaria, herpes, sudamina, erythema, macular eruptions, purpura, œdema of the face, arms and legs, rise of temperature, subnormal temperature, collapse. Several deaths are reported, among them that of a girl aged ten years, who died after two doses of ten grains each; a woman with puerperal fever, after fifteen to thirty grains; another woman after fifty-two grains in two doses. Granular and fatty degeneration of the liver and kidneys have been found, post-mortem, in some cases, and were attributed to the large doses of antipyrin which were given.

ACETANILIDE OR ANTIFEBRIN.

This is a white crystaline substance prepared by heating together a mixture of anilin acetic acid. It is without odor, causes a slight burning sensation on the tongue, is soluble only in 189 parts of cold water, more soluble in warm water, freely soluble in alcohol, ether and chloroform.

Given to animals it greatly lowers the temperature, interferes with the conduction of both motor and sensory impressions, decreases the reflex excitability of the spinal cord and causes convulsion movements. Toxic doses paralyze the peripheral motor nerves, abolish reflex activity, cause paralysis, coma and death.

Large doses cause a peculiar discoloration of the blood by reducing hæmoglobin to methæmoglobin. The red corpuscles become granular and in part dissolved, do not adhere in rouleaux, and the serum contains dissolved coloring matter. The amæboid movements of the white corpuscles cease. The prolonged action of large doses produces fatty degeneration of the heart, liver and kidneys.

In ordinary medicinal doses the heart's action is strengthened rather than weakened. The pulse becomes less frequent as the temperature falls, while tension at the same time rises. Experiments on animals have shown that when even injected into the veins, not the slightest fall of blood-pressure is produced. Large doses depress the heart and cause collapse. It is generally thought that the cutaneous vessels are at first dilated.

Cyanosis occasionally occurs, but usually only after doses of seven grains or more. It passes off quickly when the administration of the drug ceases, and is not a serious symptom. It is probably a vaso-motor phenomenon, but may be due to the production of methæmoglobin.

Cutaneous rash is very rarely seen, but sudamina and redness may occur with profuse sweating.

Fall of temperature is produced both in pyretic and apyretic conditions, but this action is energetic in proportion to the height of the fever. The fall of temperature generally begins within an hour, reaches its maximum in two to four hours, and the effects of a single dose usually lasts from three to six hours or more.

The fall of temperature is usually accompanied by profuse sweating, but less than that produced by corresponding doses of antipyrin. Sweating does not cause the fall of temperature, since the latter occurs when the sweating is arrested by atropine or agaricine. Chilliness is sometimes noticed when the temperature begins to rise, but rarely rigors, and shivering is less common than after kairin, thallin or antipyrin.

Experiments on man and animals indicate that in fever acetanilide produces a fall of temperature chiefly by decreasing heat production. Enclosing animals poisoned by acetanilide in cotton-wool will not prevent the fall of temperature. Whether the anitipyretic effect is due to direct stimulation of the inhibitory heat centre, paresis of the spinal heat centre or to an action on the tissues themselves, has not been determined.

Toxic doses cause vascular paresis and increased heat dissipation.

Respiration is but little affected by ordinary doses but after toxic doses the respirations at first become superficial and frequent, then irregular and finally cease.

Though comparatively insoluble, acetanilide is readily absorbed, producing noticeable effects, sometimes in ten or fifteen minutes, especially in children. Vomiting or gastric irritation is caused only by toxic doses.

Most observers agree that acetanilide is a moderate diuretic, though not an irritant to the kidney. It is broken up in the system, but after large doses may be excreted in part unchanged, and in such cases methæmoglobin has been found in the urine.

The therapeutic indications for acetanilide appear to be exactly parallel to those of antipyrin. It has been highly recommended as an antithermic in almost all febrile conditions. Guttman, after trying the remedy in 181 febrile cases, says that in typhoid fever he believes that the results obtained with the internal antipyretics are at least as good as those obtained with the cold bath, and of these substances he deems acetanilide the best in this affection. He opposes the giving of small divided doses as ineffectual, and obtains better results with single doses of four to eleven grains. In typhoid he gives seven and one-half grains morning and night, and occasionally three times a day. After twelve or fourteen days four grains is usually sufficient. In this way complete apyrexia, lasting often six hours, was obtained in every case, and the subjective sensations of the patient were greatly improved. Other observers have found small doses to bring down the temperature, quiet muttering delirium, relieve headache and produce sleep.

In phthisis it is a powerful antipyretic, but more liable to cause cyanosis than in any other ailment. It is best given with a stimulant, and sweating counteracted, if necessary, with atropine or agaricine. The usual sweating in phthisis is often diminished or avoided altogether by a dose given in time to prevent the evening rise of temperature. Children bear the remedy well.

In febrile conditions an average dose is from four to seven grains, and thirty grains a day is usually sufficient. Rheumatic fever and pneumonia seem to require larger doses. Phthisical, weakly and anæmic patients require small doses. If used for some time an increase of dose is necessary to obtain the usual effects.

The long-continued use of large doses in some cases causes anæmia and the so-called anilin cachexia, due to solution of the red blood corpuscles. In such cases fatty degeneration of the heart, liver and kidneys has been found, post-mortem, both in animals and men.

Single large doses may cause cyanosis, cardiac weakness and collapse. Ten grains has produced complete collapse in phthisis, and nine grains had the same effect in a case of pneumonia. In rare cases collapse may occur from small doses of three or four grains. In the case of a child four grains every two hours during the day caused death the same evening.

PHENACETINE OR PARA-ACET-PHENETIDIN.

This is derived from phenol, and occurs as a white crystalline powder without taste, almost insoluble in water but easily soluble in hot alcohol and in warm lactic acid.

Its physiological action on animals has been very little studied as yet, but is probably analogous to that of acetanilide. Very large doses have been given to animals without producing toxic symptoms.

Given in febrile conditions it is a reliable antithermic. The fall of temperature is gradual; begins in one-half to one hour, reaches the lowest point in three or four hours, and is then followed by a gradual rise, the influence of a single dose of seven grains lasting from six to ten hours. The fall of temperature is always attended with free perspiration, but very rarely with any gastric disturbance, rash, cyanosis or collapse.

It has no depressing action on the heart, but seems rather to strengthen its action. The frequency of the pulse and respiration diminishes with the fall of temperature.

The amount of urine is said to be increased. Phenacetine has been detected in the urine, and is also found in the milk of nursing women.

It has been found useful in all febrile conditions. In typhoid fever, while lowering the temperature, it relieves headache, clears the mental condition and causes a general sense of relief. To maintain a low temperature, seven grains have been given every four hours, and even when continued for a considerable time these doses have rarely given rise to the slightest accident in fever cases. Thirty grains in twenty-four hours is usually sufficient.

In phthisis and other asthenic conditions it may cause a feeling of weakness, and should be used with caution. It has been given for months without any unpleasant symptoms, but seems to lose somewhat of its effect. The usual dose in febrile conditions is seven grains. Though safe in comparison with the other antipyretics, a few unfavorable results have been reported. Fifteen grains given in a case of migraine caused giddiness, flashes of light, trembling of the limbs and nausea. Ten hours later a second dose produced a feeling of intense cold, cyanosis, cold perspiration and dyspnœa.

In another instance, a papular eruption lasting three days appeared on the thorax, abdomen and arms. One-half to three grains in the case of a child were followed by profuse sweating, intense cyanosis and collapse. In two cases in which ninety-two to one hundred and twenty-three grains were daily given, decided cyanosis was produced, and an examination of the blood revealed the presence of methæmoglobin.

PYRODINE.

This is a white crystalline product, sparingly soluble in cold water, and possesses very little taste.

Large amounts depress the heart and lower blood pressure by a direct action on the vaso-motor centre. It has a directly depressing action on the spinal cord and lowers reflex action. Repeated doses produce jaundice due to hæmo-globinæmia.

Doses of eight to twelve grains cause marked reduction of temperature in two to four hours. The temperature remains low for several hours, when a slight rise occurs and is followed by a second reduction, so that the action of a single dose may last an entire day. The reduction of temperature is accompanied by profuse sweating, but no collapse, vomiting or nausea have been noted even with a considerable fall of temperature.

It has been found a reliable antipyretic in pneumonia, scarlet fever, rheumatism, typhus and typhoid fever. In the latter it readily caused toxic symptoms, namely, jaundice, hebetude, icteric urine, albuminuria and hæmoglobinuria. It should never be given in larger doses than twelve grains, and only once in eighteen or twenty-four hours, and not continued for more than a few days. If these precautions are neglected, fatal symptoms may be rapidly induced. Doses of three or four grains have been been given to children.

METHACETIN, OR PARA-ACETANISIDIN.

This is the latest of the antithermic drugs. It occurs as a slightly reddish powder, of a slightly bitter taste, soluble in warm water, but less so in cold water, very soluble in alcohol. It is an efficient antipyretic, causing a fall of three to five degrees in a few hours, and frequently profuse perspiration. It may produce collapse, but so far no cases of vomiting, tinnitus aurium or erythema have been reported.

It is markedly poisonous to rabbits, doses of forty-five grains having produced convulsions and death. Its action seems to be similar to that of antipyrin. No hæmoglobinuria has been noticed.

We will now consider briefly the relative values of the internal antithermics:

The superiority of the recent antithermics has, since their discovery, led to the complete abandonment of the use of *salicylic acid* and *quinine* in fevers, except where they exert a specific action.

Kairin, on account of its dangerous, depressing action on the heart, and its destructive effects on the blood, has never been used to any considerable extent.

Thallin, although a prompt and powerful antipyretic, has so often produced violent chills, cardiac depression and gastro-intestinal irritation, that its use has steadily diminished.

Experience of *Methacetin* is still limited, but its poisonous action on animals and its tendency to produce collapse in man do not recommend it.

Pyrodine, as an antithermic, appears to be more prompt, powerful and prolonged in its action than antipyrin, acetanilide or phenacetine, but it also surpasses them in its abiltiy to produce sudden toxic effects, and is especially dangerous in typhoid fever.

A comparison of antipyrin and acetanilide shows the following points of difference: —

ANTIPYRIN.	ACETANILIDE.
Action more rapid, but more transitory.	Generally more prolonged and powerful.
More diaphoretic.	More diuretic.
Depressing after-effects.	Stimulating.
Gastro-intestinal irritant.	Non-irritating.
Easily toxic.	Rarely toxic.
Large dose.	Small dose.
Expensive.	Cheap.

These results are by no means uniform, but are sufficiently so to cause a general preference for acetanilide in febrile cases.

Phenacetine greatly resembles acetanilide in its physiological action and therapeutic effects, and so far as present experience shows is equally effective and even less liable to cause disagreeable or toxic symptoms.

REPORT ON PROGRESS IN THORACIC DISEASE.

BY F. C. SHATTUCK, M.D., AND G. G. SEARS, M.D.

PERICARDIAL PARACENTESIS AND PERICARDOTOMY.[1]

In the course of a paper upon this subject Ferrier gives the following indications for surgical interference in cases of pericardial effusion:

(1) When the exsudation is dangerous, owing to its abundance; in case pleural effusion also exists, the latter should be first evacuated.

(2) When, even if small in amount, it shows no tendency to subside, and from its chronic course exposes the heart to fatty degeneration.

(3) When the effusion is purulent, and might give rise to septic conditions.

These indications are equally applicable in cases of tubercular pericarditis, although the results have not been altogether encouraging. Out of twenty-two cases which he has collected, twenty died after an interval varying from eight hours to seven months after operation, which, however, seemed fully justified by the relief afforded. The other two cases, who also had tubercular deposits in the lungs, recovered from the pericarditis, to which they would otherwise have inevitably succumbed. In hæmorrhagic pericarditis better results have been obtained, as out of nine cases five have been saved.

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[1] Bull. Gén. de Thér., 1889, Nos. 6 and 8.

Regarding the mode of interference, simple aspiration is sufficient when the exsudation is serous; but of fifteen cases of purulent effusion, eleven, treated by puncture, died, while of the remaining four, in whom incision and free drainage was practised, two recovered. (Rosenstein, West; to these should be added a successful case recently reported by Dickinson.—Reps.) The incision should be made as soon as the diagnosis is established, before degenerative changes in the myocardium have set in; and even when the exsudation is simply turbid, but not purulent, it may be proved to be better practice to incise immediately rather than to wait for the purulent transformation to be complete. Puncture should be made in the fourth or fifth interspace to the left of the sternum, and the same interspaces should be chosen when a permanent opening has been determined on. In both the successful cases the pericardial sac was irrigated, but that this may not always be a safe proceeding was shown in a case of Parker's, where it stopped a heart already weakened.

AN EARLY SIGN OF ENDOCARDITIS.[2]

Dr. Duclos, of Tours, writing in the *Revue Générale de Clinique et de Thérapeutique*, January 17, 1889, records a fact of his experience in regard to commencing endocarditis, which may possibly be of value as an aid in the early recognition of this affection. While in charge of a military hospital he chanced to have a large number of young soldiers suffering from acute, articular rheumatism under his care, and, while listening to the heart sounds of one of these patients, his finger being at the same time on the radial pulse, he was struck with the want of synchronism between the ventricular contraction and the pulsation at the wrist, the latter being delayed about two-thirds of a second. The following day a systolic apex murmur was heard. He afterwards took pains to note the occurrence of this phenomenon in other cases, and found that it was followed by a murmur at the end of from twenty-four to thirty-six hours in every instance. These observations were extended over several years, and were confirmed in a number of cases by Professors Parrot and Potain.

The author has no conclusive theory to offer in explanation of this phenomenon, but he thinks that it is probably due to a weakening of the muscular fibres subjacent to the endocardium. He compares it to the weakened respiratory murmur frequently observed at the beginning of pleurisy a few hours before a friction sound is developed or effusion takes place. He has noted the same want of synchronism in two cases of typhoid fever and in three of erysipelas, in which endocarditis subsequently developed.

Dr. Duclos draws some practical conclusions in regard to treatment based upon the early recognition of the affection, and he believes he has succeeded in arresting the disease in certain cases before irreparable injury had resulted. His plan is to apply immediately a large fly-blister over the precordial region, or, in default of this, a mustard plaster, dry cups or leeches. He increases also the dose of the remedy that is being given at the same time for the rheumatism. Of course, the patient is required to remain quiet in bed.

MASSAGE OF THE HEART.[3]

Oertel has found in massage of the heart a method for improving the nutrition and the circulation, which may be employed either as a substitute for hill-climbing or in conjunction with it. It is performed in the following way: the masseur places his hands on either side of the chest of the patient, at the level of the fifth or sixth rib in the axillary line, and moves them forward and downward during expiration till the lower border of the seventh or eighth rib is reached, at the same time exerting pressure. This manœuvre should be continued during the entire expiratory period, which may be prolonged by the patient. As a result, expiration is more complete, the following inspiration is deepened, the heart's contractions rendered more powerful, and the volume of the blood-current increased. Oxygenation is thus more perfect, and improvement in the nutrition, not only of the entire system, but of the cardiac walls results. The direct pressure on the heart, though in many cases necessarily slight, is of value, like massage of other muscles, in emptying it of lymph and venous blood, especially that which flows into the auricle through the foramina Thebesii.

The indications for this form of treatment are found:

(1) In all cases of cardiac weakness, whether due to deficient nutrition or blood-formation, to excessive deposit of fat or fatty degenerations.

(2) In imperfect filling of the arterial system and venous stasis, chiefly in consequence of insufficiency of the cardiac muscle.

(3) Where increased demands are made upon the heart in consequence of some obstruction in the circulatory apparatus, valvular disease, pressure from tumors, emphysema, etc., in fact wherever compensation or compensatory hypertrophy must be sought.

(4) Especially in combination with exercise and hill-climbing in cases where they are indicated. The contra-indications are briefly as follows:

(1) Recent or repeatedly recurring endo-cardial or peri-cardial processes.

(2) Acute and subacute myocarditis in consequence of sclerosis of the coronary arteries.

(3) Sclerosis and atheroma of the arteries, especially when general.

SUPRA-CLAVICULAR HERNIA OF THE LUNG.[4]

Professor Chorel, of Brussels, reports an interesting case of supra-clavicular hernia of the lung occurring in a child of about three years of age. The child came into the hospital for a large cold abscess of the left thigh; which was treated by curetting and subsequent drainage. A short time afterward a tumor suddenly appeared above the left clavicle about the size of an orange, but becoming larger whenever the child cried or moved about. It was situated immediately behind the clavicle, and extended upward to about three fingers' breadth above it; laterally its boundaries were indistinctly marked. It was not tender, nor was the skin over it reddened or discolored. It was completely reducible, and gave to the touch a sensation of false fluctuation, such as is sometimes noticed in white swelling of the knee. On percussion it gave a tympanitic note, and on auscultation a soft, vesicular murmur was heard together with somewhat prolonged expiration, indicating the presence of pulmonary emphysema. The child, when admitted to the hospital was very thin and weak, and during the treatment of the abscess chloroform was required, which produced a serious amount of syncope; artificial respiration, having in consequence, to be kept up for some time. Professor Chorel suggests that the energetic movements then made when the lung was rapidly distended may have caused it to force its way through the lax connective tissue and the weak and wasted muscles of the supra-clavicular region. The treatment adopted was simple. Reduction was made and maintained by means of a piece of cardboard, well-padded and fixed by a spica bandage. A complete cure resulted. Professor Chorel is not aware of any other case of pulmonary hernia occurring in a child.

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[2] New York Med. Rec., March 30, 1889.

[3] Münch. Med. Woch., 1889, Nos. 37-39.

[4] Lancet, May 18, 1889.

THE PROGNOSIS IN HÆMORRHAGIC PLEURISY.[5]

Tereboullet reports three interesting cases of hæmorrhagic pleurisy, terminating in full recovery. Aspiration was practised in all, but in one it was only partially successful, as the canula became choked by clotted blood. He concludes his paper as follows: "If we eliminate cases in which the hæmorrhagic effusion is due to severe infectious diseases, and dependent on the general low condition of the system, and consider that cancer of the pleura is relatively rare, and besides quite easily recognized, and if we admit as demonstrated by R. Moutard-Martin, that chronic phthisis almost never causes pleurisy other than dry or sero-fibrinous, the conclusion is forced upon us that in the immense majority of cases the hæmorrhagic nature of an effusion does not influence for the worse the prognosis in the disease. If the objection is made that in all cases a microscopic examination of the pleura demonstrates the existence of specific bacilli, it can be said that we have always had to distinguish between true tubercular pleurisies and those histologically tubercular which recover after a single tapping without the patient ever becoming phthisical."

THE BEHAVIOR OF TUBERCLE-BACILLI IN THE ANIMAL BODY UNDER THE INFLUENCE OF GERMICIDES.[6]

In the current number of the *Zeitschrift für Hygiena*, page 98, Cornet sums up the results of his experiments to determine the action upon animals inoculated with tuberculosis of eight germicides, most of which have been reported of value in the treatment of phthisis. Tannin, acetate of lead, "pinguin," sulphuretted hydrogen, menthol, acid corrosive sublimate, creolin and creosote were employed; but not one of them could be proved to have influenced the progress of the disease in a single case, although all were exhibited in maximal doses. For example, 250 c.c. of a 1-1000 corrosive sublimate solution were introduced into guinea-pigs daily, equal to eight ounces of the same solution in man; indeed, many of the animals either died from the effects of the drug, or showed marked symptoms of poisoning.

Before we can hope to introduce any very rational therapeutics in the majority of infectious diseases a more exact knowledge of the fate of pathogenic micro-organisms in the body is necessary. As a result of a large amount of work which has recently been done in the endeavor to solve this problem, we can say little more than that, in some way or other, the tissues seem able to dispose of a certain number of micro-organisms, or that there exists a certain relationship between the general vigor of the individual and his ability to dispose of them. From these considerations the inexpediency of attempting any germicidal plan of treatment must be apparent. It can only be weakening to the patient to introduce a large amount of poisonous material into the system, since this increases the amount of extraneous material which must be cared for by the tissues. The effect of high altitude (4,800 ft.) was also tried, but here again no positive result was obtained, and Cornet was obliged to conclude that there is nothing in high altitude, *per se*, unfavorable to the progress of tubercular disease.

THE TEMPERATURE OF THE EXPIRED AIR, WHEN INHALED AT 180° C.[7]

Mosso and Rondelli have made a number of practical tests, chiefly by experiments on animals, in order to determine the temperature of the exhaled air when it is inspired at a temperature of about 200° C. Their results are even less favorable to the method of treating phthisis by inhalations of hot air than those which have been thus far reported from clinical experience. Weigert's apparatus was the one employed. They inserted a thermometer into the trachea of a dog, forced it to breathe the heated air and found that directly under the larynx the temperature had already fallen from 160° to 37.8°, while the rectal temperature was 39°. The result was even more striking when the thermometer was pushed upward through the vocal cords into the pharynx, as the figures were almost identical with those obtained in the former experiment. It was also shown that the exhaled air being saturated with moisture, is of the same temperature whether inspired at 180° or 18°. The results of their other experiments simply corroborated those which have been mentioned, and seem to prove conclusively that inhalations of hot air can exert no therapeutic effect.

THE INFECTIOUSNESS OF MILK FROM TUBERCULOUS COWS.

In order to test the danger from the use of milk from cows affected with tuberculosis, Hischberger[8] has employed specimens from twenty such animals for making inoculation experiments on guinea-pigs. The greatest care was taken to preserve the strictest cleanliness and prevent infection from extraneous sources, and in every successful case the direct connection between the disease produced and the inoculation was proved by a post-mortem examination. Even in cases where a positive result was obtained the most painstaking microscopical examination failed to discover tubercle-bacilli except in one case, and in this the udder was affected. In the other cases the virulent character of the milk was due either to spores, or the bacilli were so few as to escape detection. The proportion of successful results varied from eighty per cent. in cases where the tuberculous process was far advanced to thirty-three per cent. where it was still confined to the lungs. The danger varied at different times, being present when spores from some focus of infection happen to be absorbed into the blood current and are excreted by the milk.

A similar series of investigations has recently been undertaken by Ernst,[9] who made bacillary examinations of 114 samples of milk from thirty-six cows suffering from tuberculosis of some other organ than the udder. Of these, seventeen specimens coming from ten cows were found to contain bacilli, which were present in the cream as often as in the milk. Healthy animals were then inoculated with the result of inducing the disease in fifty per cent. of the cases treated. Feeding experiments were also made, and were successful in a number of calves and young pigs. Both arrived at the same conclusion, that milk from cows affected with tuberculosis in any part may contain the virus of the disease, the virus being present whether the udder is affected or not.

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[5] Gaz. Hebdom. de Med. et Chir., 1888, No. 4.

[6] Am. Jour. Med. Sciences, 1889, p. 386.

[7] Deut. Med. Woch., 1889, No. 27.

[8] Deut. Arch. f. Klin. Med., 1889, Bd. 44, p. 500.

[9] New York Med. Rec., September 28, 1889.

Reports of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

The Seventeenth Annual Session of the American Public Health Association, at Brooklyn, N. Y., which closed October 25th, has been well attended, and of more than ordinary interest. The relative attendance of members from distant sections of the country has not been quite so great as in former years.

Among the noteworthy and valuable papers presented were those by Mr. Atkinson, upon the "Art of Cooking"; by Professor Atwater, on "Food in its Relation to Health"; and by Dr. Sternberg, on "Recent Researches Relative to the Etiology of Yellow Fever." Dr. Lee's paper on the "Annexation of Cuba," awakened a lively discussion.

FIRST DAY. — TUESDAY, OCTOBER 22D.

MORNING SESSION.

The first paper presented was entitled

THE OVERSHADING OF OUR HOMES,

by Dr. W. Thornton Parker, of Newport, R. I.,

The chief point urged was the necessity of sunlight as an essential condition to good health. He believed that the advantages secured by tree-planting associations were overestimated, and that the desire for dense and shady foliage near dwellings was misdirected. If tree-planting on a large scale is desirable, it should be intelligently conducted with reference to the interests of the public health.

Dr. I. Y. Hibberd, of Indiana, presented the subject of

CLOTHING IN ITS RELATIONS TO HYGIENE.

He stated that the clothing of civilized people of temperate latitudes should fulfil the following conditions: (1) It should meet the demands of modesty; (2) It should satisfy the cultured æsthetic taste in dress adornment; (3) It should protect against meteorological changes.

His conclusions may be summed up as follows:

(1) The popular and professional estimate of the hygiene of the skin is much below its real importance.

(2) The physiology of the skin cannot be largely interfered with without endangering the general health.

(3) One of the most influential factors in the sound health of man is to establish and maintain in his organization a resisting power to the causes of disease.

(4) The tendency is to overdress, enervating the skin and curtailing its power, and thereby the power of the whole system to resist the causes of disease.

(5) A proper exposure of the surface of the body to environing low temperature is a valuable general tonic.

(6) Ventilation of the skin is indispensable to good health.

(7) Habit may enable one to bear wide differences in clothing under similar surroundings without detriment, and this should impress the necessity of cultivating correct habits of dress.

AFTERNOON SESSION.

The first paper of the afternoon session was read by Dr. Jerome Walker, of Brooklyn, his subject being

THE CAUSES AND PREVENTION OF INFANT MORTALITY.

Dr. Walker gave, as illustration of the excessive mortality-rate of children, the statistics of Brooklyn for several years. He stated that this excess of mortality was due to a combination of a very large number of causes, which he enumerated. Special stress was laid upon the importance of better provisions in public institutions intended for this class of the population, and the following conclusions in regard to such institutions were stated:

(1) That a large proportion of the deaths in them are preventable.

(2) That the younger the children and the larger the number, the greater the mortality.

(3) That the mortality can be lessened, but the decrease costs money, time, patience, and energy, and to obtain the best results the attending and resident physicians should be reliable, should be given control over all medical and sanitary matters, and should be held responsible for the same.

He urged very strongly the need of more "country weeks," "fresh air funds," "seaside-homes for children," "summer camps," and the necessity of prolonging the stay of invalid children in open-air resorts, where the evils of over-crowding and of foul air could be counteracted.

Dr. Walker's paper was followed by another upon the kindred topic:

THE RELATION OF THE DWELLINGS OF THE POOR TO INFANT MORTALITY

in which, its author, Alfred C. White, C. E., gave a sketch of the better class of tenement-houses, which are now being built both in London and in our American cities. Special reference was made to the buildings of the Improved Industrial Dwellings Company, of London, and also certain dwellings of a similar character in Brooklyn, and the advantages which had been secured by them.

Dr. George Homan, Secretary of the State Board of Health, of Missouri, advocated a minimum basis for the compensation of local health officers.

EVENING SESSION.

The evening of Tuesday was devoted to the usual Addresses of Welcome to the Association, and to the President's Address. The session was held at the Academy of Music. Dr. J. H. Raymond, of Brooklyn, to whom the success of the meeting is largely due, opened the session with a brief introductory address, and was followed by other words of welcome by Mayor Chapin, and by Dr. Alexander Hutchins, of Brooklyn.

Dr. Hosmer A. Johnson, of Chicago, President of the Association, then delivered the Annual Address, which was mainly devoted to a consideration of

THE GENERAL PRINCIPLES OF PUBLIC HEALTH.

He especially emphasized the following points:

(1) The need of organized bodies for sanitary administration.

(2) The duty of such bodies to remove or destroy every possible source of disease, and to so control the causes which cannot be removed, as to diminish to a minimum their deleterious influence on the public health.

(3) To prevent the introduction of diseases from without, by such means as shall be found to be most efficient to accomplish this end, and at the same time to produce the least interference with the social and commercial interests of the community.

Statistics were introduced of urban mortality-rates, brought down to very recent dates, both of foreign and of American cities, in support of his assertions of the possibility of limiting the death-rate by active sanitation.

The following paragraph is worthy of the attention of those legislators at Washington who have persistently neglected the national welfare in sanitary matters.

"As typhoid fever is a greater calamity than Texas fever, as Asiastic cholera is more to be dreaded than hog cholera, so do we need a Department of Public Health more than a Department of Agriculture; a bureau of vital statistics, more than a bureau of animal industry. Our national legislators create the machinery and appropriate money for the brute because, forsooth, it is property, and then grudgingly, if at all, look after the lives of our loved ones because they cannot be bought and sold. In all this they do what they have reason to believe their constituents demand. It is not so much legislators, as we, the people, who are at fault."

Brief addresses were also made by Rev. Dr. Storrs, and Ex-Mayor Low.

SECOND DAY. — WEDNESDAY, OCTOBER 23D.
MORNING SESSION.

Dr. John S. Billings, U. S. A., presented the first paper of the session, entitled

THE UNITED STATES CENSUS IN ITS RELATION TO SANITATION.

This was a very timely presentation of the necessity of thorough registration of vital statistics, as an aid to public health. Without such statistics nothing could actually be known of the progress of sanitation, and of its effect upon the health of a community.

You must produce constant, undeniable evidence that the work is needed and is useful; evidence that will convince the press and the majority of the community, and this evidence must be mainly death-rates, to which should be added all the sick-rates that can be obtained.

To give these death-rates you must have a complete registration of deaths and a corresponding enumeration of the population, and you ought to have a complete registration of births.

Before this Association meets again the eleventh United States census will be taken, and its methods, its completeness and the mode in which its results will be tabulated and published are of great interest and importance to all who are interested in sanitary science or in public health work in this country.

One of the most important questions, then, to be settled before the census is taken, is: What shall be the boundaries of the special districts of the city for which a separate statement of the population is desired?

For about a dozen of our large cities it is proposed to make a systematic division of the area into sanitary districts having special relations to altitude, character of habitation or population, etc., and to have special death-rates calculated for each of these districts. This being done in conference with the health authorities of these cities, and it is hoped that in this way some very interesting data will be obtained which will serve as a foundation for sanitary work in the future. Such districting has been arranged for Boston, New York, Brooklyn, Washington, New Orleans and Louisville, and the work is in progress for other cities. In investigating the details of the records of deaths kept in different cities I have noted deficiencies in a few of them to which I wish to call the attention of all who have to do with the registration of vital statistics.

(1) All deaths occurring in hospitals should be charged to the ward or district of the city from which the patient was taken to hospital, when this can be ascertained. Otherwise the death-rate in the ward in which the hospital is located will be too high, and in the other districts it will be too low.

(2) The birthplace of the parents of the decedent should be reported. We want to know the race of the decedent — whether he was German, Italian, Irish or American, and to give merely his own birthplace is not sufficient.

(3) It is very desirable that in all cases of colored persons it should be stated whether the decedent was black or of mixed blood, such as mulatto or quadroon.

I have no authority to make specific promises, but I believe that the reports of the next census, in which the members of this Association are specially interested, will be published as soon as it is possible to compile them, and will be distributed to those sanitarians and physicians who need them in their work, and who make timely request for them; and thus believing, I do not hesitate to ask the cordial co-operation of all members of this Association to make the data upon which these reports are founded as full and accurate as possible.

A lengthy discussion followed the reading of Dr. Billings' paper.

Dr. McCormack, of Kentucky, offered the following resolution, which was referred to the Executive Committee.

Resolved, That in view of the rapidly increasing commercial intercourse and travel between this country and Mexico and Cuba, and the consequent growing importance of establishing and cultivating the most friendly relations between the health authorities of our own and those of the countries above-named, that a cordial invitation be extended to the sanitary authorities of Mexico and Cuba to send representatives to future meetings of this Association. That the secretary be instructed to open correspondence with the authorities looking to this end.

A paper on the

PREVENTION OF PHTHISIS PULMONALIS AND METHODS FOR ITS LIMITATIONS,

was read by Dr. Ezra M. Hunt, secretary of the State Board of Health, Trenton, N. J.

Dr. William M. Smith, health officer of the port of New York, then made a report upon the

IMPROVEMENTS AT THE NEW YORK QUARANTINE STATION,

with stereopticon illustrations.

After the adjournment of the morning session, by invitation of Health Officer Smith, the Association visited the Quarantine Station in the Lower Bay, no session being held in the afternoon.

EVENING SESSION.

At the evening session, Dr. George M. Sternberg, U. S. A., an ex-president of the Association, presented an illustrated paper entitled

RECENT RESEARCHES RELATIVE TO THE ETIOLOGY OF YELLOW FEVER.

He stated that his inquiries upon this subject, conducted under the authority of Congress, were not completed, and that in his opinion it could not be confidently asserted that the specific microbe of yellow fever had yet been isolated, and its characteristics described. His most recent inquiries were made in Havana, and embraced the period from March till September, 1889. An abundance of material was afforded for examination, and thirty autopsies were made upon the bodies of Spanish soldiers. Dr. Sternberg described his methods of inquiry; his cultures being made in peptone gelatine, agar-agar with glycerine, and especially in the milk of the unripe cocoanut, which he found to be an excellent material for the purpose. Blood was obtained from all of the viscera for observation, together with urine drawn through the wall of the bladder, and material from the stomach and intestines. The special micro-organisms which he had found in connection with this disease, and had cultivated and subjected to further experiment upon animals, were demonstrated upon the screen.

Dr. Sternberg gave due credit to the researches of Freire, of Finlay and of Gibier, but does not consider either of the bacilli named by these observers to be the specific micro-organism of yellow fever.

Dr. Theobald Smith, of Washington, D. C., presented a paper entitled

PRELIMINARY OBSERVATIONS ON THE MICRO-ORGANISM OF TEXAS FEVER,

which was followed by a paper by Dr. D. E. Salmon, presenting

SOME GENERAL OBSERVATIONS ON TEXAS FEVER IN CATTLE.

Much interest centred upon the presentation of the subject of the

ART OF COOKING,

by Edward Atkinson, LL.D., which was illustrated by a practical demonstration of an economical and sanitary mode of cooking. The following positive propositions were made by the speaker:

(1) Special apparatus for boiling and frying has been adequately and suitably developed for the use of those who can afford these somewhat wasteful methods of preparing food, yet excellent when skilfully practiced.

(2) The ordinary methods of frying are utterly bad and wasteful.

(3) Bread may be baked suitably in a brick oven, and also economically, when the work is done upon a large scale.

(4) It is very difficult to bake bread in a suitable way in the common iron stove or range; for this, among other reasons, most of the bread consumed in this country is very bad, although we have the greatest abundance of the best material.

(5) Meats may be well roasted in a costly manner before an open fire.

(6) Aside from the exceptional apparatus or methods named, substantially all the modern cooking-stoves and ranges are wasteful and more or less unsuitable for use. All the ordinary methods of quick baking, roasting and boiling are bad; and, finally, almost the whole of the coal or oil used in cooking is wasted.

(7) The smell of cooking in the ordinary way gives evidence of waste of flavor as well as a waste of nutritious properties; and in most cases the unpleasant smell also gives evidence that the food is being converted into an unwholesome condition, conducive to indigestion and dyspepsia.

(8) Nine-tenths of the time devoted to watching the process of cooking is wasted; and the heat and discomfort of the room in which the cooking is done, are evidence of worse than waste.

(9) The warming of the room or house with the apparatus used for cooking is inconsistent with the best methods of cooking, and might be compassed at much less cost if the process of cooking were separated from the process of warming the room or dwelling.

(10) No fuel which cannot be wholly consumed is fit to use in the process of cooking, and any chimney which creates a draught upon the fuel when in the process of combustion, like the ordinary chimney of a house, is worse than useless, since it wastes the greater part of the heat generated from the fuel.

The true science of cooking consists in the regulated and controlled application of heat by which flavors are developed, and the work of conversion is accomplished. For this purpose a quantity of fuel is required which is almost absurdly small compared to the quantity commonly used.

Dr. Atkinson then proceeded to show that most of our methods of cooking in families are wasteful, and that the operation may be performed in a satisfactory manner by the heat of a kerosene lamp of proper construction. He stated the principles of the science of cooking as follows:

(1) The heat should be derived from fuel which can be wholly consumed or wholly converted into the products of complete combustion without any chimney except that of the lamp or burner. The fault with coal, especially anthracite, is that it is not evenly or wholly consumed; hence the need of a chimney to take away the gases developed and not wholly consumed; but the chimney also carries off the greater part of the heat. It is very evident that the crude combustion of coal and the direct application of the heat generated will ere long give way to more scientific methods of consuming the gaseous products, and of deriving the heat from the final combustion of the gaseous products in all arts. In the matter of cooking, kerosene oil burned in any one of the types of lamp which have a central duct to convey oxygen from below to the inner side of a circular wick, when properly trimmed and served with well-distilled oil, gives substantially perfect combustion. The same may be said of illuminating gas when used in one of the burners of the Bunsen type which supply an excess of oxygen and yield the blue flame. The combustion of oil and of gas can be brought under absolute control

by gauging the size of wick or burner to the work to be done.

(2) The oven in which the food is to be subjected to this measurable and controllable source of heat must be so constructed that the heat imparted to it may be entrapped and accumulated up to a certain measure or degree and then maintained at that temperature without substantial variation until the work is done. This can be done by jacketing the oven in a suitable way with material which is uncombustible and also a non-conductor of heat.

(3) There should be no direct communication between the true oven or receptacle in which the food is placed and the source of heat, lest the products of incomplete combustion should sometimes taint the food, and lest the food should be exposed to being in places burned or scorched.

At the close of the evening session the audience were supplied with a lunch which had been prepared in the cooking-apparatus which was upon the platform.

The substance of this address may be found in the November number of the *Popular Science Monthly.*

THIRD DAY. — THURSDAY, OCTOBER 24TH.

MORNING SESSION.

A considerable share of the morning session was devoted to the consideration of the subject of

GARBAGE DISPOSAL,

which had been discussed quite thoroughly at the previous annual meeting at Milwaukee, in 1888.

Dr. R. Martin, of Milwaukee, detailed the method at present in use in that city. At the meeting of the Association in Milwaukee in 1888, a furnace had just been erected for the purpose of cremating the garbage of the city. Since that date, the process by cremation had been abandoned, and the Merz process substituted in its place. This process, which is also in operation at Buffalo, and elsewhere, consists in submitting the garbage to a rendering process, and extracting the fats, or oils, and utilizing the remainder for fertilizers.

Dr. Kilvington, of Minneapolis, followed with a paper, entitled

STATISTICS ON RIVER POLLUTION, WITH OBSERVATIONS RELATING TO THE DESTRUCTION OF GARBAGE AND REFUSE MATTER.

In this paper were presented the substance of replies to a circular issued to 175 cities of the United States. Replies were received from 66 only, and many of them had no data upon the subject to offer. He stated that in the Mississippi River during the past year, eight cities alone deposited 152,675 tons of garbage and offal, 108,250 tons of night-soil, and 3,765 dead animals. In the Ohio River, five cities in the same period dumped 46,700 tons of garbage, 21,157 tons of night-soil, and 5,100 dead animals. In the Missouri River, four cities cast 36,000 tons of garbage, 22,400 tons of night-soil, and 31,600 dead animals, and many of these animals were killed and thus disposed of because they were suffering with disease dangerous to the public health. Dr Kilvington denounced this method of disposal as a sanitary crime, and counselled better methods.

The subject of

FOOD IN ITS RELATION TO HEALTH,

was presented by **Prof. W. O. Atwater**, of Washington, D. C.

He presented a chart upon which were graphically shown the dietaries of different classes of people, with reference to the relative amount of protein, fat, and carbo-hydrates in each, and also the potential energy furnished by the diet of each class. These were compared with the standard dietaries of armies, and also with the standards proposed by Voit, Atwater and others. The lowest dietary was shown to be that of English sewing-girls, and the highest, that of brickmakers at Cambridge, Mass. Those of American laborers were generally higher than those of the same classes in other countries.

The reading of these papers drew forth a lively discussion until the hour of adjournment.

AFTERNOON SESSION.

The meeting on Thursday afternoon was held at the Hoagland Labratory, where the members assembled a half-hour before the time of meeting, and were shown the different methods and appliances employed for advanced scientific research, to which the Labratory is admirably adapted. It is under the direction of Dr. Sternberg. The Association met in the principal lecture-room on the first floor.

The two papers first presented were upon kindred subjects.

Dr. E. Playter, of Ottawa, presented the subject of

THE PREVENTION AND RESTRICTION OF TUBERCULOSIS IN MAN;

and **Dr. P. H. Kretzchmar**, of Brooklyn, that of

THE PREVENTION OF PULMONARY CONSUMPTION.

The latter was mainly devoted to a description of a small receptacle intended for receiving and disinfecting the sputa of consumptives.

Dr. Cyrus Edson, of New York, followed with a paper entitled

THE DISINFECTION OF DWELLINGS BY MEANS OF SULPHUR DIOXIDE.

Dr. Edson gave the results of the experience of the Board of Health of New York with this agent, and affirmed his belief in its efficiency for the disinfection of apartments. The paper was followed by a lengthy discussion, in which very diverse opinions were expressed as to the value of this disinfectant. Some of the members expressed entire confidence in its efficiency as advised by the committee on disinfectants of the Association, the necessity of the presence of moisture having been more definitely shown by recent experiments; while others doubted its efficiency.

EVENING SESSION.

In the evening the Association assembled at the Brooklyn Institute, and listened to an entertaining lecture by **Rev. C. R. Treat** upon

SANITARY ENTOMBMENT,

in which the subject of burial in general was very fully presented. Abundant illustrations being given of the various modes of burial, from the earliest ages, to the present time. The object of the presentation of this subject was to demonstrate the advantages of a newly proposed mode of burial, in which the bodies of the dead were to be placed in a large stone or brick structure, where they are to be desiccated by the applications of dry, hot air, the effect being the same as that which ensues in some of the high and dry climates of the earth. The subject was illustrated by fine stereoptic views, and was evidently designed as a presentation of the subject for a popular audience.

DR. BENJAMIN LEE, Secretary of the State Board of Health, of Pennsylvania, read a paper entitled

DO THE SANITARY INTERESTS OF THE UNITED STATES DEMAND THE ANNEXATION OF CUBA?

in which he expressed himself in the affirmative. The reason presented was the frequent existence in Havana of three diseases dangerous to the public health, — yellow fever, small-pox and leprosy. Dr. Lee gave some personal observations as to the prevalence of leprosy, and stated that the United States should be able to control the population of Cuba.

As an appropriate supplement to this paper, DR. P. A. MORROW, of New York, exhibited a fine collection of

PHOTOGRAPHIC VIEWS OF LEPERS

in all stages of the disease, the greater part of which were taken at the leper colony at Molokai, Hawaiian Islands.

FOURTH DAY. — FRIDAY, OCTOBER 25TH.

Invitations having been received from official or other sources from at least six cities of the United States, or of Canada, it was finally decided that the next meeting should be held at Charleston, S. C., at a date not earlier than November 1, next year. The following officers were then elected for the ensuing year: *President*, Dr. Henry B. Baker, of Michigan. *First Vice-President*, Dr. F. Montizambert, of Quebec. *Second Vice-President*, Dr. J. H. Raymond, of Brooklyn. *Secretary*, Dr. I. A. Watson, of New Hampshire; *Treasurer*, Dr. J. B. Lindsley, of Tennessee. *Executive Committee*, Drs. L. F. Salomon, of Louisiana; W. Bailey, of Kentucky; H. B. Horlbeck, of South Carolina; W. Wyman, of Washington, D. C.; J. F. Kennedy, of Iowa; and P. H. Bryce, of Toronto.

The following papers were then read, the two latter by title only:

THE NECESSITY FOR A MORE VIGOROUS INSPECTION OF MEAT-PRODUCING ANIMALS AT THE TIME OF SLAUGHTER,

by DR. D. E. SALMON, Chief of the Bureau of Animal Industry, Washington, D. C.

THE CAUSES OF INFANT MORTALITY,

by DR. R. O. BEARD, of Minneapolis, Minn. The reading of this paper was followed by discussion, and the appointment of a committee of which Dr. Jerome Walker, of Brooklyn, is chairman, to report on the

CAUSES AND PREVENTION OF INFANT MORTALITY.

The two final papers presented, related to the

MANUFACTURE OF OLEOMARGARINE, AND LEGISLATION RELATIVE TO THE SAME.

They were written by DR. E. RICHARDS, Government Microscopist, Washington, D. C.

The Association then adjourned till November, 1890.

An exhibition of sanitary goods and appliances was held at the corner of Fulton and Pineapple Streets, during the session of the Association. The principal articles exhibited consisted of models of apparatus for garbage disposal, plumbing appliances, patent foods, mineral waters, sanitary clothing, athletic apparatus and disinfectants.

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AMERICAN GYNECOLOGICAL SOCIETY.[1]

SECOND DAY. — MORNING SESSION.

A CASE OF ABDOMINAL LIPOMA SIMULATING OVARIAN TUMOR,

by DR. A. REEVES, JACKSON, Chicago.

A multipara, previously in good health, had for two years complained of pelvic pain, abdominal enlargement and an increasing cachexia. An elastic, semi-fluctuant tumor was found, extending from the pelvis to three inches above the umbilicus. A laparotomy showed this tumor to be a lobulated lipoma, springing from the peritoneal folds of the mesentery and the retro-peritoneal space. It was not removed, the wound was closed and the patient recovered. These tumors are excessively rare. Cases have been reported by Péan, Spencer Wells, Barbour, Byford, and Homans. The tumors in all cases were retro-peritoneal. The diagnosis in all had been faulty and all but two of the operations had resulted fatally.

DISCUSSION.

DRS. S. C. GORDON, W. C. GOODELL, and FORDYCE BARKER had each seen similar cases, in all of which operation had been fatal. It seems strange that the removal of a simple lipomatous mass should be followed by such grave results.

DR. H. C. COE thought there might be an element of malignancy about these tumors. He had seen two cases where microscopical examination showed undoubted malignancy, though the gross appearances were like lipoma.

DR. ENGELMANN doubted whether all the cases reported were lipomata and not fatty degeneration of the omentum.

DR. JACKSON said that all the cases were distinctly sub-peritoneal fatty tumors.

The president then delivered the

ANNUAL ADDRESS.[2]

After a historical reminiscence, he proposed the question, Shall we do laparotomy immediately before or during menstruation? His second case of laparotomy, nearly twenty years ago, was done during menstruation. Recovery was particularly rapid. Since that time he had operated often at this period, and had never lost a patient. So that his experience led him rather to choose the period of menstruation for laparotomy. The pelvic circulation was then active and the derivative effect of the local bleeding seemed to lessen the chances of inflammatory trouble.

DISCUSSION.

DR. WILLIAM GOODELL had performed ovariotomy six times during menstruation and had removed the ovaries in a case of fibroma once. He had seen no ill results and thought such a time not inopportune. He would, however, not care to perform myomotomy or hysterectomy at that time.

DR. A. P. DUDLEY had noted in most cases a bloody vaginal discharge after removal of the tubes or ovaries. He would be willing to operate during menstruation, but would employ vaginal douches to keep the parts clean and aseptic. He had done hysterectomy during menstruation without any evil results.

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[1] Continued from page 137 of the Journal.

[2] See this Journal for September 26, p. 296.

Dr. R. Battey, Rome, Ga., said there was a constant metrostaxis on the second or third day after operation upon the appendages. He had not operated during menstruation on account of popular prejudice, though it was a historical fact that the original Battey's operation had been performed at this time.

Dr. Cornelius Kollock, Cheraw, S. C., thinks menstruation acts like a drainage-tube and sees no objection to operating during the flow.

Dr. Coe thought it important to differentiate between the various operations in the discussion.

Dr. Paul F. Mundé had often operated during menstruation. He found no difficulty from hemorrhage during the operation, and no increase in the flow following it. He would not choose the menstrual period, but would not postpone his operation on account of it. Extra care, however, should be used to prevent sepsis, and an absorbent pad should be applied to the vulva. He would not advise the removal of the myomatous uterus during menstruation.

Dr. A. J. C. Skene, Brooklyn, thought the experiences narrated proved nothing. Metrostaxis after laparotomy is different from menstruation. In general, severe surgical operations should be avoided during the performance of any vital function. In some menorrhagic cases, which were stronger just before menstruation, it might be well to operate at that time.

AN EXPERIENCE WITH SLOUGHING INTRA-UTERINE FIBROIDS,

by Dr. Ely Van de Warker, Syracuse, N. Y.

The paper was based upon the following cases:

Case I. Sloughing intra-uterine fibroid in a subject of extreme obesity. Operation of the total removal abandoned, and the sloughing layers of the tumor removed with the curette. Recovery, and death some years subsequent to operation, with symptoms of malignant uterine disease.

Case II. The patient had been forty-six years of age; had had one child; history of repeated abortions. Extreme blood loss and high temperature, with œdema of extremities; cervix very resistant. Rapid dilatation and removal of fibroid in sloughing condition. Recovery, and death in a year after from chronic nephritis.

Case III. Patient aged thirty, sterile; fibroid extruded entirely from the uterine cavity and pendulous within the cavity of the cervix, with low insertion of pedicle. Tumor in a sloughing condition; hæmorrhage and pyrexia. Operation and recovery.

Case IV. Patient, aged forty, had had three children. Rapid disappearance of a pelvic tumor, attended by severe flooding, and demonstrating the presence of an intra-uterine fibroid in a sloughing condition two weeks subsequently. Extreme high temperature and exhaustion. Operation and recovery, complicated with hystero-tetanus without trismus, preceding the operation. The neurotic symptoms relieved by bromide of potassium and asafœtida.

Case V. Patient, aged fifty-one, had had several children. Long-continued error in diagnosis, the uterine symptoms being ascribed to cancer for fourteen years. Blood loss continued with more or less activity for that period. Sloughing intra-uterine fibroid demonstrated. Pyrexia for about four weeks; exhaustion extreme; blood loss so excessive that mucous membranes were blanched. Operation and death from shock.

The following summary was based upon the facts connected with this group:

(1) That the use of the curette to remove the sloughing periphery of an intra-uterine fibroid is justifiable when it is non-removable from any complication (as in Case 1 from excessive obesity), or in cases of extreme exhaustion that render extirpation extra hazardous.

(2) That the process of sloughing begins at the outer layers of the mass and extends layer by layer into its deeper structure.

(3) That rapid dilatation of the cervical canal affords ample space for the manipulations of removal; and that sponge tents and other slow methods of dilatation are unnecessary (Case IV).

(4) That fibroids, formerly intra-uterine, when extended from the uterus and pendulous in the cavity of the cervix with its pedicle therein attached, were rarely found in a sloughing condition; and that Case III was an exception to this rule.

(5) That a form of hystero-tetanus, without trismus, might follow either certain forms of blood-poisoning or uterine lesion (Case IV). Within the experience of the author this condition, only met with in the puerperal state, was attended with septicæmia.

(6) That blanched mucous membranes, in excessive and long-continued blood loss due to intra-uterine fibroids, afford a certain indication that the limits of safety have been reached in operative treatment of sloughing fibroids, and that a doubtful prognosis must be given (Case V).

(7) That septicæmia with long-continued pyrexia is necessarily a fatal condition when due to a sloughing fibroid, unless relieved by the removal of the offending mass; that removal, wholly or in part, is a life-saving operation and is imperative; that the operation is comparatively easy and attended with but little danger, except in cases of blanched mucous membranes.

Dr. S. C. Gordon, Portland, Me., had seen a case in a woman of fifty, where there had been a flow for two years with cachexia, simulating cancerous disease. Examination, however, showed the trouble to be caused by a sloughing submucous fibroid. This was successfully removed by the curette.

Dr. M. D. Mann, Buffalo, spoke of a case where a large amount of sloughing tissue was removed and the uterus washed every two hours. The symptoms recurred in two months and the operation was repeated. This was done six times with uniform good results. After a seventh operation by another physician the woman died from septic poison. In another case there was severe metrorrhagia caused by an enormous submucous fibroid. The ovaries and tubes were removed, but the hæmorrhage continued. After a time, galvanopuncture with a current of 200 milliampères was employed. This induced strong uterine contractions which appeared daily for a couple of hours. The os uteri became completely dilated, but the mass was too large to be forced down and began to slough. By morcellement with the spoon-saw he removed the necrotic tissue up to the pelvic brim, then enucleated the tumor manually. Failing to deliver it with obstetric forceps, he was obliged to do laparotomy. He found the uterus entirely adherent to the anterior abdominal wall, so that the peritoneal cavity was not opened, and delivered a fibroid as large as an adult head. Recovery was good. He thinks he might be criticised for proceeding so far at first that it would have been dangerous to allow the mass to remain. He had carried infection over the whole surface of the uterine cavity, therefore he had to complete his operation by laparotomy.

Dr. R. Battey, said that the sloughing fibroids might be mistaken for malignant growths as they generally occurred at that period of life when cancer is usually found.

Dr. Cornelius Kollock had a case where a twelve-pound sloughing fibroid was removed per vaginam, and some time after the uterus, a three-months' fœtus, and fifteen fibroids were removed by laparotomy. The patient died from sudden heart failure.

Dr. Goodell said the operative removal of large fibroids might require several sittings. The guarded crotchet he considered a better instrument for their removal than the obstetric forceps.

Dr. Van de Warker considered the etiology of the sloughing fibroids to be this: it was first intramural, then submucous, then pediculated and finally strangulated, the blood supply being cut off by the displacement of the tumor and by uterine pressure.

Dr. Wylie said the first thing is to render the sloughing tissues aseptic. He would not use a tampon. There might be decomposition without odor.

DEATH FROM VISCERAL AFFECTIONS AFTER LAPAROTOMY,

by Dr. H. C. Coe, New York.

In spite of the remarkable improvement in the statistics of laparotomy in the last few years, there was always a number of cases where the cause of death seemed inexplicable. To study such cases by the light of anatomical, pathological research, he had reviewed the records of the Woman's Hospital and had found 85 cases where the autopsy had revealed serious visceral lesions which were either the direct or indirect cause of death. Deaths after ovariotomy were usually attributed to septicæmia, peritonitis or shock. Deaths from visceral complications were, however, more frequent than was generally supposed. They might be the result of pulmonary. cardiac, renal, or gastro-intestinal lesions. Cardiac lesions were not uncommon and might exist before operation or develop subsequently. Valvular lesions were less dangerous than fatty degeneration or dilatation. Cardiac paralysis might occur from the sudden withdrawal of a large amount of blood from the circulation after removal of the tumor. Irritation of the abdominal sympathetic plexus was a potent, though obscure cause of heart failure after laparotomy. Pulmonary lesions, even when quite extensive, might be overlooked and found only on autopsy. Pleurisy was a common complication. If repeated careful examinations of the urine were not made, renal affections of extreme importance might be overlooked. Undoubtedly some patients died of uræmia due to chronic kidney disease with an acute exacerbation after an operation. Interstitial nephritis and acute pyelitis were very serious complications.

AFTERNOON SESSION.

RENAL DISTURBANCES CAUSED BY DISEASE OF THE PELVIC VISCERA,

by George G. Engelmann, St. Louis.

The author calls attention to the various forms of nephritis which may result from uterine or pelvic disease, considering more especially those forms following compression of the uterus. This pressure may result from the involvement of contiguous structures, as pelvic inflammation or malignant growths; from within by septic or gonorrhœal inflammation of the mucous tract; by pressure from displaced organs, by neoplasms or inflammatory products; and by reflex nerve influence which may disturb circulation and secretion; by perverted nerve action due to the intimate relation of the renal and uterine plexuses; the renal anæmia of pregnancy, etc. The progress of these cases is very slow, and they are not usually recognized until the symptoms become severe and dangerous. Relief is then doubtful unless the cause of the trouble can be removed. The prognosis in most cases is serious, as they are not detected until revealed by pus or casts in the urine, by renal pains or œdema. The final results will be materially changed when the causative conditions are more thoroughly understood and attention more generally directed to them. The point of obstruction is often difficult to find. The ureter in many cases may be palpated as a thickened cord through the abdominal walls in its upper portion, but in the pelvic portion palpation may show no changes when the obstruction is above the pelvic brim. The urine is variable on account of the usually unilateral obstruction and may be perfectly normal. Medicine is of but slight assistance in the treatment, for to be successful we must find the cause of the obstruction and remove it. We may open a way temporarily by dilating the ureter and we may thus remove a plug of mucous and often afford relief from pain. It may be necessary to treat the ureter through the bladder, either by urethral dilatation or an artificial vesico vaginal fistula. Emmet has attained the desired result by stitching the ureter into the vagina. If the kidney cannot be relieved in any of these ways, we must attack it directly and drain, remove concretions, or dilate the ureter from above. Nephrectomy is the last resort.

Dr. Polk said renal complications were most important, and we should never interfere surgically where there is even renal insufficiency. Patients, whose urine is not up to the standard, are apt to have degenerative changes in the kidneys and heart, and any additional strain is dangerous. Chloroform is the best anæsthetic for these cases. In the after-management, opiates should be avoided, as they increase the chances of a fatal result by preventing the proper excretion of effete material.

Dr. H. C. Coe was surprised to find how easily the ureter could be compressed and pyelo-nephritis be present without symptoms. He had made careful autopsies in four cases where the kidney had been entirely destroyed, and the point of ureteral compression was marked only by a small cicatrix in the broad ligament.

Dr. B. B. Brown had, in several cases, found ureteral palpation of great value.

Dr. T. A. Emmet had found a common cause of trouble after labor in œdema induced by compression of the tissues in front of the cervix. This interfered with the passage of urine through the ureters, and could be easily detected by bimanual palpation after labor. Catheterization helped by overcoming the œdema and allowing the passage of urine.

(To be continued.)

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

May 8, 1889. The meeting was called to order at 8 o'clock, by **Dr. A. L. Mason**, Chairman.

The first business was the reading of a communication from the Committee of Arrangements of the Massachusetts Medical Society, relative to a request preferred before that body by the Secretary of this Section, asking that the Committee authorize the necessary expenditure in order to secure the presence of Professor Putnam of Cambridge at the next meeting of the Section, to be held on the first day of the annual meeting of the Massachusetts Medical Society, in June. The sole expense involved consists in the cost of transportation of the collections of Professor Putnam, with certain apparatus, from the Peabody Museum in Cambridge to the hall in Boston, and its return to Cambridge.

The Committee of Arrangements decided that the request of the Section could not be allowed, and suggested that voluntary contributions be solicited from the members of the Section for defraying the expenses incurred. On motion of Dr. H. I. Bowditch it was voted that the Secretary of this meeting be a committee of one, to arrange for the next meeting.

EMPYEMA.

Dr. John G. Blake exhibited two patients, both little girls, from his service at the City Hospital, each of whom had been the subject of empyema, and in which, in each case, there had been aspiration of the thorax followed by free incision of the wall of the chest, and drainage of the pleura. The cases were treated by means of the Cabot dressing, and have both made an uninterrupted recovery. In each case there was at the time of exhibition, the appearance of perfect restoration to a state of health, and the respiratory murmur was heard clearly to the bottom of the chest.

Dr. Blake remarked that the cases of empyema in the children which he was going to exhibit reminded him of the saying attributed to Dr. Johnson, "that Lord Mansfield illustrated what could be made of the natives of a certain portion of the British Empire when they were caught young." Certainly no cases could better demonstrate rapid and complete recovery from this disease than the two little girls who were present for examination. When these children entered the hospital their condition was pitiable in the extreme; greatly emaciated, with harassing cough, impeded respiration and symptoms demanding immediate relief by aspiration. The treatment by permanent opening and antiseptic dressings without syringing the thoracic cavity, and without the use of anæsthetics other than a local spray at the point of incision, was completed within six weeks. But very little if any difference can be detected now by auscultation between the two sides of the chest. Their physical condition now is rapidly improving, they are fat and rosy and cheerful, improving every day and promise soon to be all that could be desired. The clinical history from the hospital records would furnish interesting details of the cases.

PYO-PNEUMO-THORAX.

Dr. A. L. Mason showed a man, forty-five years old, who had been operated on in November, 1887, for pyo-pneumo-thorax. The left pleural cavity contained a quart of pus and communicated with the bronchi. Recovery took place in four months and he had not lost a day's work in the past year. Measurement of the left side showed contraction of an inch and a half.

In contrast to the children shown by Dr. Blake, this case illustrated the slow obliteration of the cavity in adults, where firm adhesions prevent the expansion of the lung. The patient refused to permit an operation without ether, which was administered in moderate quantity, and he came out of it well, answering questions and talking rationally.

An interesting and dangerous complication occurred during the irrigation of the pleura. As the secretion was foul, the cavity was washed with a warm carbolized solution, 1 to 100.

After the introduction of about five ounces the patient became unconscious suddenly, and had severe general convulsions with dilated pupils. He was cyanotic, and the breathing nearly ceased. Artificial respiration and the injection of stimulants were resorted to, and, after three-quarters of an hour, the patient slowly rallied.

The foul odor, septic symptoms, fever and sweating, made frequent subsequent washings necessary but there was no recurrence of these convulsions. The amount of fluid injected was too small to cause distension, as there was free exit and the cavity had contained a quart of pus.

Such accidents have been often reported and call for unusual care in washing out the pleural cavity. They have been attributed to shock to the sympathetic nervous ganglia, and have been caused by warm water alone, according to reports in medical literature. Death has sometimes ensued. But one other case has occurred at the City Hospital, out of a large number of empyemas, in which similar but less severe symptoms had been observed.

Dr. E. N. Whittier, by invitation of the Chairman, presented a paper upon

THREE CASES OF PURULENT EFFUSION IN THE ABDOMINAL CAVITY.

Dr. Whittier said: I doubt, Mr. Chairman, if any subject in medicine offers a more promising field for study and research, than that which will undoubtedly be admirably and clearly presented to us by Dr. Mason's paper. I doubt, if to the attending physician, any subject is more involved in obscurity and in doubt as to diagnosis and etiology, and as to where the line should be drawn between medicine ("so-called") and surgery; and I very much doubt if anything but the very largest experience and knowledge of the subject will afford the requisite guide for the proper treatment of this class of disorders.

I do not feel that my own personal experience or knowledge has been at all satisfactory in its results, but kindly permit me to cite three cases which have come under my observation, as a contribution to the subject.

Case I. Mrs. F., sixty-eight years old. During the last twelve years has had three previous attacks of pain in region of right kidney and right hypochondrium, and lasting from two weeks to three months, but unexplained by the passage of biliary or renal calculi.

December 24, 1888, she was taken ill with very severe pain in the same region, most marked in region of kidney.

December 26th, pain unabated, and requiring continued hypodermics of morphine. Temperature, 104.5°. Tenderness and pain also very severe in front, in the region of gall-bladder, but no tumor could be detected.

December 28th. Temperature, 100°.

January 2d, the pain has been gradually diminishing for several days. Can now detect a slight fulness in upper half of abdomen on right side. Palpation detects a deep-seated tumor in this region, extending nearly to median line, continuous with liver dulness above, extending downwards and obliquely towards the umbilicus. The thickness of the abdominal wall masked somewhat the outlines of this mass, but it was firm and resisting, not particularly tender on pressure, nor affording any distinguishing diagnostic physical signs, except that it was apparently continuous with the liver, and occupied the position sometimes assigned to enlarged gall-bladder. On this date I saw the patient in consultation with Dr. Baxter, and although he thought the case suitable for aspiration, I failed to agree with him, but advised that the patient be urged to go to the Massachusetts General Hospital, with reference to exploratory incision, thinking that the evidence of malignant disease was stronger than that of any other disease.

From this date, January 2d, the tumor rapidly increased in size until January 14th, when patient had a chill. Previous to this time she had had two or three chills, but not very severe. From this time on for many days the pain was not very severe, and only required one-sixth grain morphine at night.

February 9th and 10th, the patient passed large quantities of pus in the urine, probably from one to two quarts. The tumor collapsed. The patient rapidly improved, and visits were soon discontinued.

February 27th, had a chill, with intense pain in right hypogastric region. The tumor had returned, and occupied all the upper portion of the right side of the abdomen, its lower border lying at least two or three inches below the level of the umbilicus.

After a few days the pus again found exit with the urine, and the patient had a rapid and uninterrupted recovery. At the present time (May) no tumor can be detected, and there is entire freedom from pain and tenderness.

Case II. Mr. C., thirty-nine years of age; family history good; habits good; personal history good, excepting that for a number of years he had had at varying intervals severe paroxysmal painful attacks referable to right hypochondrium and epigastrium, without jaundice, but with the usual symptoms which lead to an opinion of biliary calculi.

During October and November of last year the attacks were more frequent and more severe, and there were evidences of constitutional disturbance in loss of flesh and strength; and early in December jaundice appeared, with epigastric distress and nausea and "bilious vomiting;" there were also temperature changes, never above 102° and never any chill. Treatment at various hands served but little good purpose; and conflicting opinions were advanced by the very considerable number of physicians who saw him. About the middle of December last year, an epigastric tumor was observed, and the pain grew more constant and required much morphia to control it. There was progressive emaciation; marked pallor of a sallow, waxy kind; and increasing evidence of local and constitutional disorder, but with subacute inflammatory disturbance, until two and one-half weeks before his death, when the temperature again rose.

I saw the patient April 3d, at Mansfield, in consultation with Dr. Perry, who kindly gave me the outline of the history, and a few days later the report of the autopsy.

I saw the patient in bed in a state of extreme exhaustion and emaciation: from one hundred and forty pounds he had fallen to seventy-five or eighty. He was of a sallow cachectic hue, and his whole appearance as from disease of malignant type; pulse 140 to 160 small and weak; temperature slightly above normal. No evidence of disease could be found in the thorax; but in the epigastrium and left hypochondrium and reaching down nearly to level of umbilicus, a tumor could be seen transmitting impulse of abdominal aorta, with outline and surface irregular and very tender in epigastrium, where there was decided fulness and indistinct fluctuation. Below this was a hard resisting mass. The opinion which prevailed at the time was that it was malignant disease of the omentum, probably sarcoma; although I felt that the epigastric prominence taken in connection with the temperature changes pointed to pus encysted there and so stated.

April 7th, four days later the patient died.

Autopsy showed an abscess in epigastrium and left hypochondrium, containing a pint and a half of pus and numberless small gall-stones. No sign of communication with the gall-bladder could be discovered, although it contained forty to fifty gall-stones. There were no adhesions, either duodenal, stomachic or hepatic. The left testis had suppurated and a large metastatic abscess was in left supra-clavicular region.

Case III. Mr. P., fifty-one years of age. Father died of cancer. Mother's family tuberculous. Patient's habits and history good, with the exception of chills and fever in 1860. Never had any dysentery. Had headaches and bilious attacks from close of the war up to three or four months preceding March, 1886. During these months he had quite constant dull pain in epigastrium not induced and not affected by food. No nausea, no vomiting and no jaundice.

March 1, 1886. Severe epigastric pain, six hours duration, followed by an illness of seven months duration, in which there was great constitutional disturbance, as shown by loss of weight, strength and impairment of digestion, but without vomiting, nor was jaundice present. At one time there was partial recovery, but on the whole a steady downward progress. Early in the sickness an epigastric tumor showed itself and increased with considerable rapidity until at the end of four months it occupied the epigastrium and extended toward the left hypochondrium.

At this time, through the courtesy of Dr. Pratt, of Bridgewater, I saw the patient in consultation with him. The condition at this time was of extreme gravity. Emaciation was marked, prostration was pronounced, facial expression of great suffering, pinched and haggard. The whole condition was as of impending death from a purely malignant process. In the epigastrium and extending into the left hypochondrium and downward nearly to umbilicus a tumor could be made out with great distinctness, tender on pressure; quite firm and resisting.

An unfavorable prognosis was imperative. The long duration of the disorder, the family history, the age of the patient, the location, the condition and appearance of the patient prompted and seemed to warrant a diagnosis of malignant disease. But about the middle of August the patient had sudden nausea and vomited, partly on the floor and partly in a basin, about three pints of a brown limpid inodorous fluid, apparently pus and blood changed by admixture. The tumor collapsed, and never returned in that location; and marked and rapid improvement took place.

The following year after a severe attack of influenza, patient noticed a tumor about size of an orange in right hypochondrium and epigastrium, which increased in size until in December, 1887, he entered the Massachusetts General Hospital with a history of stomachic and intestinal indigestion, pain and distress in epigastrium, progressive weakness and loss of flesh.

At entrance a tumor was found in the epigastrium and right hypochondrium; firm, hard, even in surface, of quite uniform outline; reaching nearly to umbilicus and measuring five by seven inches in its larger diameter with intestinal resonance over same; splenic dulness measured four by five inches.

Advice was sought and consultations were held with the surgical as well as the medical staff; and many opinions were advanced as to the nature of the growth and its etiology, and means for removal. Laparotomy was advised; exploratory incisions were proposed; but a diminution in the size of the tumor while under observation in the hospital, had great influence in deciding to wait, and in September of the following year, during an attack of chills and fever, the tumor disappeared within twenty-four hours and has never recurred and the patient recovered full health.

Dr. Pratt, writing me under date of May 7th inst., reminds me that his opinion at the outset was, that the tumor was the result of obstruction due to gall-stones, an opinion, I am sure, not upset by the results.

Dr. Mason then reported

THREE CASES OF SUB-DIAPHRAGMATIC ABSCESS.[1]

Dr. Bowditch stated that he had seen but one case in which there was communication between pus below the diaphragm and the lung. This was many years ago. He remarked that no one in the discussion of the present cases, had spoken of laparotomy, nor had that operation apparently been present in the minds of the previous speakers. Is not this an operation which can judiciously be done, in such a grave condition as that described as belonging to most of the cases here presented? and is it not done for much less serious conditions of disease, or for purely exploratory purposes? Why might this operation not find a very useful and perfectly legitimate field of application in cases of the obscure and threatening character of those here delineated?

Dr. Mason said that in his cases the abscesses were above and behind the liver, out of reach of an ordinary laparotomy. In two instances there was posterior drainage. The case of duodenal ulcer was very complicated, and the resulting abscess between the upper surface of the liver and the diaphragm, was not localized by exploration.

Dr. F. C. Shattuck said that, in the presence of such a profusion of cases of the most interesting character, it was difficult to know how to do justice to the subject under discussion. Several points, however, had struck him with great force in the examination of the patients who were exhibited, and in the narration of these most interesting cases. He would speak first of some of the conditions associated with the cases presented by Dr. Blake. Dr. Shattuck saw a case many years ago, in which an empyema of the chest was discharged through the lung without operative interference, and the patient recovered. There was no perceptible affection of the lung or of the general health remaining after the recovery of the immediate conditions resulting from the opening of the path from the cavity of the chest to the open air. He also mentioned a little girl in his wards in the Massachusetts General Hospital, who entered with a large effusion in the chest which the hypodermic needle showed to be purulent. A portion of the fluid was immediately evacuated by the aspirator, and at a period a few days later, another and a larger quantity was withdrawn, after which time there was decadence of the febrile action, an increase of the appetite, and an apparently perfect recovery to a state of health. Dr. Shattuck also mentioned a case recently seen in consultation. The patient had been severely sick with pneumonia. The heart was found outside the left nipple, the right side of the chest was filled with fluid, which had already begun to show tendency to point. Aspiration of the chest showed that the fluid was purulent, and a portion was removed at once. The advice was given that another portion of the fluid should be removed at another time within a day or two.

Dr. Shattuck asked Dr. Mason if the carbolized fluid which was thrown into the chest in the case presented before the Section, in which there were convulsions, was injected by means of *one* tube or by *two*.

Dr. Mason replied that only one tube was employed, but that there was ample room around the outside of the tube for the complete escape of the fluid, so that the chest was at no time distended nor in any way affected mechanically except by the actual contact of the liquid.

Dr. Shattuck also alluded to the cases presented by Dr. Whittier in which the appearances simulated those of malignant disease, and expressed the opinion that this suspicion would incline the consultant to avoid any operative interference. Dr. Shattuck said that he distinctly remembered a case at the Boston City Hospital in which the diagnosis of empyema had been made; and an operation for its removal was carried out, but to the surprise of the operators, the fluid proved to be the contents of a large hydatid cyst, with the presence of large numbers of daughter cysts.

Dr. George M. Garland was reminded of a case occurring in his practice, in which the patient, a man about fifty years of age, had gone through a pneumonia, and after three weeks had begun to convalesce, with an entire absence of fever, and all the signs of rapid recovery. Within two days, however, he had a sudden elevation of temperature to 103° F. and the pulse reached 100 in the minute. There was soon a marked apathy, the patient was drowsy, wanted to die, but made no complaint of pain or discomfort. The heart and lungs were normal. Four days later there was no resistance in the abdomen, and no pain on pressure nor any signs pointing to abdominal complications of any kind. It was, however, noticed that there was limited œdema in the right back, and not in the left. High up, under the ribs on the right side was pain on pressure, and there was an indistinct feeling of resistance to the fingers. Dr. Cabot was at once summoned by telegraph, and after an incision extending four inches from the surface of the back reached a point between the kidney and the peritoneum, from which more than a quart of offensive pus was drained off by a rubber tube. Within forty-eight hours the patient rallied from the shock of the operation, and soon the cavity began to gradually diminish in size, and the patient was on the road to convalescence. There was at times retention of pus, with exacerbation of the symptoms, but this was each time successfully relieved, and at length a continuous flow of a solution of boracic acid through the wound was maintained, until the patient fully recovered and resumed his accustomed occupation.

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[1] See page 449 of the Journal.

Dr. F. I. Knight said that cases of the kind reported on this occasion almost always do well in children, and that he has seen patients with this malady treated as out-patients in Philadelphia. In connection with the case reported by the chairman, Dr. Knight was reminded of many cases seen in conjunction with Dr. Cabot. In one of the cases operated upon, the patient died before the operation was begun, and died unquestionably from the ether. In regard to the subsequent injection of the cavity of the chest with fluid, he has seen many cases in which the signs of severe poisoning by carbolic acid were produced by the use of this fluid as an injection, even when used in dilute solution and in very small amount. Dr. Cabot is now opposed to even the use of the carbolized gauze, as a dressing after operations upon the side.

Dr. Henry I. Bowditch stated that he had only injected one case of this kind in all his experience. This patient had a permanent opening, and a continuous discharge, and was not doing well. One pint of simple warm water was injected, and allowed to flow out. It came away looking like pus; the injection was repeated until the water came away clear; and the patient immediately rallied, and made a perfect recovery. Dr. Bowditch is strongly opposed to injection of the chest with any fluid whatever after operation for relief of empyema, on account of the danger of accidents such as that reported by the chairman, or others of even more serious character, which have been known to occur in connection with this procedure.

Dr. Shattuck stated that there seems no necessity to treat a collection of foul pus in the chest in any other way than we would treat a collection of perfectly sweet purulent effusion in the same location.

Dr. J. O. Whitney, of Pawtucket, R. I., said: While, as a rule, I should not wash out the chest in empyema I can conceive of cases where it would be imperatively demanded. Great care must be taken lest a non-absorbent surface be converted into an absorbent one. If cleanliness be attained, I never fear bacteria.

Dr. Mason said, in closing the discussion, that he could not agree with some of the speakers as to the impropriety of irrigating the pleura. It might be a choice of evils but this was the lesser as compared with the septic symptoms which sometimes continued. The indications were the same as those which required the removal of decomposing pus or sloughs from other localities, as the uterus or bladder. Convulsions sometimes followed the washing out of these organs also, and might even attend the passage of a catheter. Carbolic acid was probably not a good agent. Plain warm water or a solution of creolin had been useful.

Dr. G. M. Garland read a paper on

EUPHRASIA OFFICINALIS.[2]

THE BOSTON

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TUBERCULOSIS IN SLEEPING-CARS.

The recently acquired knowledge of the tubercle bacillus and of the dangerous properties of the dried sputa of tuberculous subjects is causing a gradual revision of the views hitherto obtaining in regard to many of the adjuncts and accessories of our modern civilization. We referred last week to the rehabilitation of the spittoon by the bacillus, and it seems possible that the same microbe may, on the other hand, destroy the character of the much-vaunted American sleeping-car.

At a recent meeting of the Surgeons' Association of one of the great railroad systems, Dr. J. T. Whittaker, of Cincinnati, made some remarks,[1] by invitation, on "Tuberculosis in Sleeping-Cars," which are calculated to startle the travelling public, but which the physician cannot deny are not without considerable justification in the actual condition to which the travelling public — and in the United States that means the great majority of the well-to-do population — is constantly exposed.

It is startling to have to accept, but it is hard to dissent from, the following statements:

"It would be difficult to conceive of a conjunction of circumstances more directly contributive to disseminate this disease (tuberculosis) than is offered in the palace-car. It is always badly ventilated; the vestibule-car especially is close and hot, sixteen to thirty people being crowded into a space that might make a small hall in a house, but never a bed-room for a pair of human beings. Somebody is always hurt by a draught, so that windows are kept closed to prevent free ventilation, as well as the ejection of sputum, which is mostly deposited on the floors. Cuspidors never contain water, and are mostly used as waste baskets or slop-jars, and the temperature is raised to a degree sufficient to rapidly disseminate infectious matter.

"With the gathering shades of evening the compartments containing the bedding are opened into the car to diffuse through it a disagreeable, musty odor. The traveller is treated to the luxury visibly of clean sheets and pillow-cases, but the blankets, mattresses, carpets, and, worst of all, the curtains, remain the same until worn out.

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[2] See page 453 of the Journal.

[1] Druggists' Circular, November, 1889.

"Consider now that every car contains or has recently been occupied by a consumptive traveller, if only *en route* for change of climate, and that through ignorance, carelessness, or weakness, there comes to be deposited upon bedding, curtains, etc., tuberculous matter. What becomes of it, if it be not dried and disseminated throughout the car, or gradually incorporated into the lungs of the traveller?"

The traveller on the express trains, Dr. Whittaker suggests, is in the condition of the dogs made to breathe, enclosed in boxes of atomized tuberculous matter, until even they, naturally immune, became infected with the disease. The danger to ocean voyagers is less, in that they are likely to be more in the fresh air which somewhat offsets the closer confinement in the still more restricted cabins and the ordinarily greater length of the voyage.

But the public having once enjoyed its comfort cannot be asked to forego the sleeping-car, any more than the public can be asked to give up eating beef and drinking milk lest tuberculosis enter the system and take up its abode. What means are there to ward off or mitigate its dangers short of banishing the sleeping-car altogether?

It is suggested, and we wish the suggestion might meet with a practical response, "that the plush, velvet and silk hangings must go. Seats should be covered with smooth leather, that may be washed off; carpets replaced by rugs, to be shaken in the open air at the end of every trip, or, better still, abolished for hard wood floors. The curtain abomination must give place to screens of wood or leather; blankets of invalid's beds, be subjected to steam at a high temperature; mattresses be covered with oiled silk or rubber cloth, that may be washed off; and, above all things, invalids be provided with separate compartments, shut off from the rest of the car with the same care taken to shut out the far less offensive or dangerous smoke of tobacco. The cuspidors, half filled with water, should abound (as they now abound) in every car, and consumptive travellers be provided with sputum cups, which may be emptied from the car. For it is not necessary to say here that the sole and only danger lies in the sputum. The destruction of the sputum abolishes the disease. When the patient himself learns that he protects himself in this way as much as others, protects himself from auto-infection, from the infection of sound parts of his own lungs, he will not protest against such measures."

In the mental exhilaration consequent upon existing discoveries in regard to the tubercle bacillus, it is not well that we should permit our still undeveloped knowledge to beget precocious fears and panics. It should not be forgotten that the soil, as well as the seed, is necessary for the crop; that the healthy system knows how to protect itself against even this formidable enemy. But this cry of warning should not go unheeded. How many tuberculous invalids travel to and from the South every winter and spring, and how many non-tuberculous, but enfeebled, people along with them. To point out that such are exposed on the fast through trains to especial dangers, dangers which can be diminished and should be minimized — this is not to be an alarmist.

ANOMALOUS FORMS OF SCARLATINA.

Scarlet fever sometimes presents itself in so mild a form as hardly to be recognized. The fever is slight, the sore throat insignificant or *nil*, the submaxillary engorgement is wanting, the exanthem almost imperceptible. The attending physician cannot but be puzzled, especially if there be no history of exposure to scarlet fever. The law of this Commonwealth requires physicians, under a penalty, to report their cases of scarlet fever to the local board of health, and houses, which are thus declared to be the seat of infection, are marked by a red card, and subjected more or less to a system of disinfection and isolation. This is all very proper, but what shall the physician do with his doubtful cases? It may sometimes be necessary to wait several days before a certain diagnosis can be made. If, however, the practitioner assume from the first that he has to do with nothing more serious than rötheln or symptomatic erythema, and makes no effort to disinfect the habitation or isolate the patient, he may imperil the rest of the family, and even a whole neighborhood, for the event may prove that the case was one of scarlatina.

If, on the other hand, he reports as scarlet fever what he subsequently finds to have been a benign affection, a febricula with symptomatic exanthem, he alarms a whole community and compels isolation of a family, a circumstance which, in the case of school children or adults working in factories, may be a serious hardship.

The rash may be wanting, but the mouth and throat may present the peculiar redness characteristic of the disease; there is considerable swelling of the tonsils, and the tongue is deep red, with swollen erect papillæ. Such cases — *scarlatina anginosa, scarlatina faucium, scarlatina sine eruptione* — occurring during epidemics of scarlet fever will not be likely to deceive the wary practitioner. When they appear sporadically, they often occasion considerable embarassment.

There is a fulminant variety where the patient is all at once overwhelmed by the poison, and succumbs from paralysis of the heart or brain. The fever is intense, but there is no skin or throat affection; the symptoms are meningitic; there is irregularity of respiration and early heart failure. Every practitioner has seen such cases in times of epidemic, and been puzzled by them. Sometimes a well defined rash presents itself in the last moments, or as the result of a warm bath.

Probably that type of scarlatina which offers the greatest difficulty in diagnosis is the nephritic. It is well known that scarlet fever is sometimes only recognized by its renal manifestations; it appears from the onset as scarlatinous Bright's disease, and there is no throat affection or exanthem. The principal symptoms are those of uræmic poisoning. With high fever there is headache, delirium, restlessness, perhaps spasms, more or less irregularity of the respiration, and especially, obstinate vomiting. A very common determination of the poison is toward the alimentary canal, and the vomitus and dejecta contain catarrhal products which suggest to the practitioner that he has to do with only a severe attack of gastro-enteritis. The kidneys are likely to be overlooked, especially as in young children it is sometimes difficult to obtain a clear specimen of the urine. If the urine be examined, it will be found loaded with albumen and casts, and the percentage of urea will be low. The uriniferous tubules are sometimes so blocked with exudation that the urinary secretion is almost or quite suppressed. If anasarca be absent, the case will be still more obscure. It has sometimes been the fate of the physician to have a case of this sort at the commencement of an epidemic. If there be no history of exposure to contagion, the practitioner may well hesitate before he commits himself to a diagnosis of scarlet fever. Sooner or later all doubts are removed as the disease appears in unmistakable characters in other members of the family.

The above considerations sufficiently indicate the difficulties under which the general practitioner sometimes labors in reporting his cases. He will do his best to keep within the requirements of the law and protect the community from the invasion of a terror-inspiring and dangerous malady, but he will sometimes fail from lack of the data that would help him to a satisfactory diagnosis.

MEDICAL NOTES.

— One of the latest reports concerning the lines of business, in which English capitalists desire to invest their money, involves the purchase of a number of patent-medicine concerns in this country.

— The American Association for the Study and Cure of Inebriety give a dinner to its President, Dr. Joseph Parrish, in honor of the seventy-first anniversary of his birth, at his home, Burlington, N. J., on Tuesday, November 12, 1889, at mid-day. Several addresses are expected.

— The *Boston Post* says that there are 3,000 medical women in the United States, whose incomes range from $5,000 to $20,000 a year. The number is increasing every year, and the supply of "lady doctors" bids fair to be as great as that of the male physicians. Austria is the only civilized country in the world which prohibits women from entering the medical profession. Russia and China permit them, and the Queens of Italy and Roumania employ women physicians.

— The Board of Trustees of the Philadelphia Polyclinic and College for Graduates in Medicine have elected Richard J. Levis, M.D., Emeritus Professor of Surgery; Charles B. Nancrede, M.D., Emeritus Professor of General and Orthopædic Surgery; Charles H. Burnett, M.D., Emeritus Professor of Otology and J. Solis Cohen, M.D., Emeritus Professor of Laryngology.

An additional chair of Orthopedic Surgery was created, and Thomas G. Morton was elected professor. A new Department of Dentistry was created and the faculty was authorized to place a competent teacher in charge until the next meeting of the trustees. A new Department of Experimental Therapeutics and Physiology was created, and Thomas J. Mays, M.D., was elected professor. The chair of Clinical Surgery was filled by the election of Thomas S. K. Morton, M.D., professor. C. L. Bower, M.D., was elected Adjunct Professor of Clinical and Operative Surgery and J. Abbott Cantrell, M.D., Adjunct Professor of Diseases.

— The recent publication of the death by yellow fever of William Bruns and Joseph Fennell, passengers to this city on the steamer *Hondo* from Greytown, Nicaragua, have given rise to the impression that yellow fever prevails at that place, where many Americans are now engaged at work on the Nicaragua Canal. It is now said that there is no yellow fever at Greytown, and neither Bruns nor Fennell boarded the steamer there, the former having taken passage at Livingston, Honduras, and the latter at Kingston, Jamaica.

— Saccharin is reported to be a valuable antiseptic. A strength of 1 to 500, as an addition to mucilaginous and other solutions, prevents the formation of low organisms. Thus a valuable, inexpensive dentifrice may be prepared by simply dissolving saccharin in water, to the proportion of 6 per cent. A teaspoonful of this in a half-pint of water forms an admirable antiseptic mouth wash. In cases of malignant or other diseases of the stomach, requiring the washing out of that organ, a solution of saccharin of the strength of 2 per cent. will be found very suitable.

— A well-known physician relates the case of a person unequally myopic in his eyes, and very astigmatic in the left one. On account of the bad images given by this eye for near objects, he was compelled in childhood to mask it. and acquired the habit when writing of leaning his head on the left arm so as to blind it, or of resting the left temple and eye on the hand with the elbow on the table. After putting on spectacles, when fifteen years old, he lost the habit of leaning. His two children, while they have not inherited the defect, have received his acquired habit, and have to be watched to keep them from hiding the left eye when writing. A somewhat similar case of inheritance of acquired habit is related by J. Jenner Weir of a goat and its kids in the Zoölogical Gardens. A chain was attached to the animal's neck to keep him from jumping over the fence. He became accustomed to take the chain up by his horns and move it from one side to another over his back; in doing this he threw his head very much back, so as to place his horns in a line with his back. His offspring have inherited this habit, though it has not been necessary to put chains upon them. — *Popular Science Monthly.*

BOSTON AND NEW ENGLAND.

— Drs. McCullom and Durgin, of Boston, have visited the case of alleged small-pox in Chelsea, and pronounced it not small-pox.

— The annual meeting of the Free Hospital for Women was held at 22 Mt. Vernon Street, October 31. The report of Secretary N. V. Walker, for the year ending October 1, 1889, shows that 143 patients have been received during the year. Of these, 110 were either cured or relieved, 2 were unrelieved, 9 entered for diagnosis only, 11 were improper hospital cases, 7 left against advice and 4 died. In the out-patient department 312 new patients have been treated, with an aggregate of 2,961. The building fund has been increased $7,000, of which $2,500 was the gift of the late Sidney Bartlett. Nearly $5,000 has also been received for the hospital from the estate of Miss Annie L. Hastings, and valuable individual subscriptions and donations received. The report of Alfred Rodman, Treasurer, shows total expenses of $7,332.31, and total receipts of $8.000.34. The old officers were re-elected.

— Considerable excitement has been caused in the public mind by the recent cases of typhoid fever at Yale. The latest statement of the facts is as follows: Four Yale students have died of typhoid fever, Brainard, of Hartford, of the junior class, being the latest reported victim. The fever seem to be of a virulent type, for the report of death in Brainard's case, as in the case of Dr. McLane's son, came close upon the report of the illness.

Dr. C. A. Lindsley, Secretary of the Connecticut Board of Health, is quoted as believing that the cases did not originate in New Haven, but were only developed there. While there have been only eight cases of the disease, yet the mortality, fifty per cent., is certainly somewhat startling, and investigation as to the source and spread of the disease will be welcomed by anxious parents and friends and by the medical public.

NEW YORK.

— At the annual meeting of the Medical Society of the County of New York, held October 28, the following officers were elected for the ensuing year: *President*, Dr. Alexander S. Hunter; *Vice-President*, Dr. J. Leonard Corning; *Secretary*, Dr. Charles H. Avery; *Assistant Secretary*, Dr. Wm. E. Bullard; *Treasurer*, Dr. John S. Warren. Of the one hundred and sixty-four cases of illegal practice investigated by the Society during the past year, six resulted in conviction in General Sessions and twelve in Special Sessions; while in one instance the Society succeeded in getting the defendant sent to state prison for five years. The gross amount of the fines imposed was $1,500, and of this, the Society received $1,300.

— The Coroner's Jury, in the case of Feeks, the lineman who was recently killed by electricity, at the corner of Chambers and Centre Streets, has rendered a verdict to the effect that the man's death was caused by contact with a Western Union or Metropolitan telephone wire, which is believed to have been crossed by an electric light wire, probably one of the Brush Electric Light or the United States Illuminating Company. The verdict further finds that the system of overhead wires, as at present operated, is a constant menace to the lives and property of the citizens, and that electric wires, whether transmitting high or low tension currents, should be thoroughly insulated; that the linemen of the telegraph and telephone companies, as well as all electric light companies, should be imperatively required to wear rubber gloves and to use insulated instruments while working upon the lines. The use of the wire known as the underwriter's wire is condemned, and its immediate replacement with properly insulated wires is recommended. In view of this accident and of the existing danger from the overhead wires, the several recommendations are made.

— Judge Andrews, in Supreme Court Chambers, on October 29th, rendered his decision in the electric light cases, continuing the temporary injunction restraining the city from interfering with the wires of the electric light companies, pending the trial of the action for a permanent injunction.

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Miscellany.

THE VENTILATION OF PUBLIC SCHOOLS.

From a letter to the *Daily Transcript*, written by Dr. Charles Harrington in reply to a previous communication signed "Architect" which criticised a recent editorial in this journal dealing with the ventilation of the public schools of Boston, we make the following extracts, which seem to us most timely and reasonable:

"Will 'Architect' assert that where ever changing conditions, such as differences in temperature, humidity, action of wind, etc., are exerting their influence in one way and another, the science of ventilation is an absolutely exact one? Would he be understood as saying that without mechanical contrivances there can be no ventilation. Will he assert that natural ventilation is a delusion? Because the Journal states that many of our schools are well ventilated without artificial aid, and that complicated apparatus may be so mismanaged as to give less valuable results, is 'Architect' justified in claiming that it favors natural as against mechanical means without reserve? . . .

"It is hardly necessary to cite authorities in support of the statement that natural ventilation is capable of good results, for actual experience is better, but has 'Architect' read the excellent paper by Dr. F. G. Pinkham on 'The Ventilation of School-rooms Heated by Stoves' in the nineteenth report of the State Board of Health?

"Are school-houses which are furnished with mechanical appliances necessarily well ventilated? By no means. The Winchell School on Blossom Street, has both 'power' and bad ventilation. Let me not be understood as being opposed to artificial ventilation, which when properly arranged and well managed is capable of producing most perfect results. For my own part I very much desire to see it introduced in our schools wherever it is necessary and possible, but I am by no means prepared to condemn a building solely because of its absence, nor to deny the value of well-regulated natural means.

"The *Journal* says, 'The matter of expense in the introduction of power is anything but simple,' and 'Architect' thereupon remarks, 'The opinion that expense is an effective obstacle to anything is very superficial.' Does 'Architect' not know that to indiscriminately introduce high-pressure boilers, engines and fans, and to pay for the running and the extra salaries, or to alter flues sufficiently for the proper extraction of air by heated shafts in all our schools, whether needed or not, would require so enormous an appropriation that the authorities who have the voting of grants would find some very effective obstacles in their way? Would their opinion that it would be difficult to appropriate so much money be looked upon as superficial? . . .

"As I shall show in a report about to be submitted on the sanitary condition of some of our public schools, there exists an evil, the effects of which on the air of the schools cannot be overcome by any system of ventilation whatever, and which must be considered quite as seriously as questions of altering flues or introducing power. That evil is overcrowding. Proper attention to this matter would go so far in improving the character of the air in many of our schools as to render any changes in the ventilation quite superfluous. What we need is more buildings for our large and increasing school population, and when they are erected, as they surely must be, let us hope that proper attention will be paid to the careful planning and management of the ventilation. If, in future additions to our number of school-houses, the authorities could secure the services of an unbiased and competent engineer, the public would have cause for congratulation, the institute would be but one of a number of perfectly ventilated schools, and the old buildings would at the same time gain some much-needed relief from overcrowding."

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CLAIM FOR WRONG DIAGNOSIS OF SMALL-POX.

Alfred Hand, of Philadelphia, has entered suit against the city for damages in the sum of $50,000, on account of small-pox contracted by his being confined in the small-pox hospital of that city a year ago. He had measles and was sent before the diagnosis was fully made to the pest-house, when he was placed in a ward with small-pox patients. The following day, August 5th, the disease declared itself as measles, and proved to be light. He was convalescent on the 11th, and on the 21st was attacked with hæmorrhagic small-pox, from which with its resultant paralysis he remained in the hospital till December 11th.

The statement of Dr. William M. Welch, the surgeon in-chief of the Municipal Hospital, as given to the press was as follows:

"Hand's case was one of those peculiar forms of measles which defy the practitioner to distinguish from small-pox. On August 8th the man was brought to the hospital on a doctor's certificate and an order from the Board of Health. It was nearly one and one-half hours after Hand had entered the ward when I saw him. I have treated over 5,000 cases of small-pox at the hospital, and even I, conversant with all the characteristics of the disease, was not sure that he had the measles. As he had spent two hours in the infected atmosphere he could not be safely moved, so taking all precautions I left him until the next day. In the morning the fact was demonstrated that he had the measles, and it was impossible to move him to any place where he might not extend the infection. Hand was vaccinated at least ten or twelve times, but in no instance did the virus take effect. In a few days he was cured of the measles, but being infected I could not discharge him. On August 21st he was stricken with the most virulent form of small-pox, and it was solely due to the attention he received that he survived. Everything he wanted was given him. He was placed in a room by himself, and an affection grew up between him and his attendant. As he grew better he developed partial paralysis, which slowly improved until he could sit up. At the time of his discharge both his father and himself were very profuse in their thanks for his treatment. The claim that he was neglected by the attendant is false. He could not be discharged for two weeks after admission until the disease had time to develop. In all my experience I have never had such a strange case. It may be that the paralysis was caused by some local or old-standing complaint accelerated by the attack of small-pox. The entire case was most unfortunate. When admitted he did not have the small-pox, but that is something I have to guard against always; cases of chicken-pox, measles and similar complaints being sent to me as small-pox."

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THE JOHNS HOPKINS HOSPITAL BULLETIN.

The trustees of the Johns Hopkins Hospital have authorized the issue of a monthly publication to be known as the Hospital Bulletin. It will contain announcements of courses of lectures, programmes of clinical and pathological study, details of hospital and dispensary practice, abstracts of papers read and other proceedings of the Medical Society of the Hospital, reports of lectures and all other matters of general interest in connection with the work of the Hospital.

In size of page and general make-up the Bulletin will resemble closely the Johns Hopkins University Circulars. In fact it will attempt to fill in the Hospital the same place which the Circulars fill in the University. Nine numbers will be issued annually. The first number will appear in November, 1889. The subscription price will be one dollar per year. Subscriptions may be sent to The Publication Agency of the Johns Hopkins University, Baltimore, Md.

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OBITUARY. ISAAC E. TAYLOR, M.D.

Dr. Isaac E. Taylor, President of Bellevue Hospital Medical College from its organization by himself in 1861, and one of the most prominent of New York physicians, died suddenly of pericarditis on the 30th of October. Dr. Taylor was born in Philadelphia, of English parentage, April 25, 1812, and graduated from Rutgers College, New Brunswick, N. J., in 1832. He afterwards entered the office of his brother, Dr. Othniel H. Taylor, and in 1834 received the degree of M.D. from the University of Pennsylvania. Instead of commencing the practice of his profession, however, he spent four years in mercantile business with his father-in-law, Mr. Stuart Mollan, of New York. In 1839 he concluded to devote himself to medicine, and in order to render himself proficient in obstetrics and diseases of women, to which his taste was especially inclined, he went to Paris in 1840, and pursued a course of study under the famous Cazeaux. The following year he returned to this country and settled in New York, and the first appointment which he received was that of physician for diseases of women at the Demilt Dispensary, a position that he retained for seven years.

In 1857 he was elected visiting physician to Bellevue Hospital, and at once set about inaugurating a series of improvements and reforms which greatly increased its usefulness. He also succeeded in uniting under one medical organization with Bellevue Hospital all the institutions on Blackwell's Island and the other East River Islands. Later on he established the medical college in connection with the hospital, and became its president, as well as its first professor of obstetrics and diseases of women and children. He remained on the visiting staff of the hospital until 1876, when he became one of the consulting physicians. Before this he had, at his own request, been made an emeritus professor, but he still continued to hold clinics at the hospital. He was also consulting physician to the Charity Maternity, and Women's Hospitals. He was a frequent and painstaking contributor to medical literature, and his elaborate studies on the cervix uteri in the last period of gestation and the first stages of labor especially, attracted the attention of obstetricians all over the world. He held office in all the numerous societies to which he belonged, and was one of the founders of the American Gynecological Society and the New York State Medical Association, — of the latter he was the first president chosen from New York City.

While Dr. Taylor never excelled specially as a teacher, as a practitioner he attained the highest eminence, and for many years he was held in the utmost esteem as a consultant in midwifery. He practised medicine nearly half a century, and retired a short time since full of honors and with an ample competence. He was noted for his kindly feeling and genial manners, and was as popular in society in general as he was among his professional associates. He leaves four children, — Col. Stuart Taylor of California, Mrs. Pierre Lorillard, Mrs. Hilliard Judge, and an unmarried daughter.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 26, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	612	196	16.32	13.40	5.12	3 24	4.32
Philadelphia	1,040,245	330	86	9 90	15.60	.90	3.60	4.20
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	156	62	15.36	13.44	4.48	1.92	3.06
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	180	55	13.44	5.04	2.80	2.80	5.60
New Orleans	250,000	—	—	—	—	—	—	—
Cincinnati	225,000	108	—	22.08	8.28	4.60	4.60	9.20
Washington	225,000	94	29	22.26	14.84	2.12	3.18	13.78
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	23	11	26.10	4.35	13.05	4.35	4.35
Charleston	60,145	44	9	27.24	11.35	18.16	2.27	2.27
Portland	40,000	17	2	5.88	29 40	—	—	5.88
Worcester	78,292	19	2	10.52	15.78	—	5.26	—
Lowell	71,518	40	14	17.50	25.00	7.50	—	10.00
Cambridge	65,552	20	8	20.00	5.00	—	5.00	10.00
Fall River	62,647	15	12	33.33	—	6.66	6.66	6.66
Lynn	53,334	19	—	15 78	11.52	5.26	5.26	5.26
Springfield	40,731	10	7	40.00	10.00	—	—	40.00
Lawrence	40,619	32	7	34.43	18.78	—	3.13	31.30
New Bedford	37,253	13	5	23.07	11.38	7.69	7.69	7.69
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	15	6	33.33	—	—	—	26.66
Salem	29,011	9	4	22.22	11.11	—	—	11.11
Brockton	28,813	13	2	38.45	7.69	—	15.38	24.07
Chelsea	28,167	12	3	8.33	16.66	—	8.33	—
Haverhill	26,058	10	1	—	—	—	—	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	4	1	—	25.00	—	—	—
Newton	21,553	5	3	20.00	20 00	20.00	—	—
Malden	19,774	9	5	33.33	11.11	11.11	—	11.11
Fitchburg	17,534	9	4	33.33	11.11	—	11.11	11 11
Waltham	17,332	10	3	10.00	40.00	—	—	10.00
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	3	1	—	—	—	—	—
Quincy	13,728	4	3	—	33.33	—	—	—

Deaths reported 1,875: under five years of age 542; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 319, consumption 248, acute lung diseases 206, diphtheria and croup 124, diarrhœal diseases 83, typhoid fever 55, whooping-cough 18, scarlet fever 11, malarial fevers 11, acute spinal meningitis 10, erysipelas 4, measles 3.

From whooping-cough, New York 11, Boston 2, Philadelphia, Baltimore, Charleston, Cambridge and Fall River 1 each. From scarlet fever, New York 5, Baltimore 2, Philadelphia, Fall River, Malden and Fitchburg 1 each. From malarial fevers, New York 6, Baltimore 2, Philadelphia, Nashville and Charleston 1 each. From cerebro-spinal meningitis, Cincinnati 4, New York, Philadelphia, Washington, Charleston, Worcester, and Somerville 1 each. From erysipelas, New York 4. From measles, New York 2, Salem 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending October 12th, the death-rate was 17.5. Deaths reported 3,201: infants under one year of age 879; acute diseases of the respiratory organs (London) 264, diarrhœa 116, scarlet fever 65, diphtheria 55, fever 43, whooping-cough 41.

The death-rates ranged from 9.3 in Cardiff to 32.7 in Portsmouth: Birkenhead 17.8, Birmingham 16.2, Bradford 16.4, Hull 20.6, Leeds 24.8, Leicester 14.9, Liverpool 19.3. London 15.8, Manchester 24.2, Nottingham 14.3. Sheffield 18.3.

In Edinburgh 16.0, Glasgow 21.6, Dublin 23.2.

The meteorological record for the week ending Oct. 26, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
Saturday, Oct. 26, 1889.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...20	29.99	64.0	74.0	53.0	78	81	80.0	S.W.	N.W.	12	9	C.	O.		
Monday, ..21	30.20	42.0	45.0	38.0	64	76	70.0	N.E.	N.	14	12	T.	O.	0.40	.05
Tuesday,..22	30.33	40 0	47.0	33.0	52	59	56.0	N.W.	S.E.	10	6	C.	C.		
Wednes. ..23	30.14	38 0	42.0	34.0	69	57	63.0	N.	N.E.	17	14	O.	C.		
Thursday, 24	30.38	38.0	43.0	32.0	70	66	68.0	N.	N.E.	15	16	O.	F.		
Friday,....25	30.05	44.0	48.0	40.0	76	85	80.0	N.	N.E.	12	6	O.	O.		
Saturday,.26	30.07	49.0	57.	41.0	89	76	82.0	N.W.	S.W.	3	9	O.	O.		
Mean for Week.	30.21		51.0	39.0			71.0								

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 26, 1889, TO NOVEMBER 1, 1889.

Cabell, Julian M., first lieutenant and assistant surgeon U. S. Army. Granted leave of absence for two months, to take effect about November 10, 1889. S. O. 249, Par. 7, A. G. O., October 25, 1889.

Gibson, Joseph R., major and surgeon U. S. A. Granted leave of absence for seven days to take effect from date of being relieved from duty at Fort Sheridan, Ill. Par. 7, S. O. 249, A. G. O., October 25, 1889.

By direction of the Secretary of War, so much of Par. 10, S. O. 242, October 17, 1889, A. G. O., as directs Captain Louis M. Maus, assistant surgeon, to report in person for duty at Fort Stanton, New Mexico, to relieve Captain Marcus E. Taylor, assistant surgeon, is revoked, and Captain Taylor will proceed to Boise Barracks, Idaho Ty., as directed in said order, as soon as medical attendance shall be provided for Fort Stanton. Par. 10, S. O. 249, A. G. O., October 25, 1889.

Maus, Louis M., captain and assistant surgeon U. S. A. Granted leave of absence for two months on surgeon's certificate of disability. Par. 11, S. O. 249, A. G. O., October 25, 1889.

By direction of the President, the Army Retiring Board convened at Vancouver Barracks, W. T., by War Department order dated December 15, 1888, published in S. O., No. 292, December 15, 1888, from Headquarters of the Army, is dissolved. Par. 1, S. O. 250, A G. O., Washington, October 26, 1889.

By direction of the Secretary of War, Captain William C. Gorgas, assistant surgeon, is relieved from temporary field duty in the Department of the Missouri, and will join his proper station (Fort Barrancas, Fla). Par. 2, S. O. 251, A. G. O., October 28, 1889.

By direction of the Secretary of War, so much of Par. 2, S. O. 241, October 16, 1889, from this office, as relates to Lieutenant Colonel Anthony Heger, surgeon, is amended to read as follows: "Lieutenant Colonel Anthony Heger, surgeon, is relieved from further duty in the Division of the Atlantic, and will at once report to the Major General Commanding the Army for duty in this city" Par. 5, S O. 252, Headquarters of the Army, A G. O., October 29, 1889.

By direction of the Secretary of War, Par. 3, S. O. 241, October 16, 1889, from this office, is so amended as to grant Major Robert M. O'Reilly, surgeon, leave of absence for six months, with permission to leave the United States, to take effect November 1, 1889. Par. 6, S. O. 252, A. G. O., Washington, D. C, October 29, 1889.

War Department, Washington, October 30, 1889. By direction of the President, Major William H. Forwood, surgeon, is detailed as a member of the Army Retiring Board at St. Paul, Minn, convened by W. D. order, dated January 12, 1889, published in S. O No. 10, January 12, from Headquarters of the army, Vice Captain Edgar A. Mearns, assistant surgeon, is hereby relieved. Par. 12, S O. 254, A. G. O., October 31, 1889.

APPOINTMENTS.

First Lieutenant, Charles Willcox, assistant surgeon U. S. Army, to rank from October 29, 1889.

First Lieutenant Harlan E. McVay, assistant surgeon U. S. Army, to rank from October 29, 1889.

First Lieutenant E. B. Frick, assistant surgeon U. S. Army, to rank from October 29, 1889.

Taylor, Morse K., major and surgeon U S. Army, retired. Died October 20, 1889, at San Antonio, Texas.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 2, 1889.

Nash, F. S. past assistant surgeon, detached from duty in Bur. Med. and Surg., and to the "Petrel," November 14, 1889.

Bogert, E. S., medical inspector, ordered to examination preliminary to promotion to medical director.

Morton, O. D., assistant surgeons, **J. W. Kite**, and **E. P. Stone**, ordered to examination preliminary to promotion to passed assistant surgeon.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A Regular Meeting of the Society will be held at the Medical Library on Monday, November 11, at 8 o'clock, P. M. Reader: Dr. C. P. Strong, Subject, Cases illustrative of some of the more unusual forms of Bladder Diseases Among Women. Dr. O. K. Newell, will report a Case of Stone in the Bladder. Dr. J. J. Putnam, will show a New Apparatus for direct Transfusion.

F. B. Harrington, M.D., *Secretary.*

The American Academy of Medicine. – The American Academy of Medicine will hold its Thirteenth Annual Meeting at Leland's Hotel, Chicago, Ill., on Wednesday and Thursday, November 13 and 14, 1889.

Richard J. Dunglison, M.D., *Secretary.*

Nashville Prison Congress. — The Annual Congress of the National Prison Association of the United States, will convene in the Senate Chamber of the Capitol at Nashville, Tennesee, at 10 A. M, Saturday, November 16, and will continue its sessions until the evening of Wednesday, November 20.

The Medical and Chirurgical Faculty, of Maryland, will hold its Semi-Annual Meeting in Hagerstown, Md., on November 12 and 13, 1889. Regular practitioners are cordially invited to be present.

BOOKS AND PAMPHLETS RECEIVED.

Listerism. By James B. Bell, M.D., Boston. Reprint. 1889.

Diphtheritic Paralysis. By Lewis H. Adler, Jr., M.D. Reprint. 1889.

Atropine in Enuresis. By Wm. Perry Watson, A.M., M.D., Reprint. 1889.

The "Perfected Evacuator." By Fessenden N. Otis, M.D. Reprint. New York: D. Appleton and Company. 1889.

Résumé of the Experience of Seventeen Years in the Operation of Dilating Urethrotomy. By Fessenden N. Otis, M.D. Reprint. 1889.

Air, Its Uses and Abuses. How Perfect Ventilation Can be Secured under all Circumstances. New York: The Gouge Heating and Ventilating Company. 1889.

Prolapse of the Womb, with Especial Reference to the (So-called) Hypertropic Elongation of the Supra-Vaginal Portion of the Cervix, with Report of a Case. By Lewis H. Adler, Jr. Reprint. 1889.

Address Delivered at the Forty-Third Annual Meeting of the Association of Medical Superintendents of American Institutions for the Insane, Newport, R. I, June, 18, 1889. By John P. Chapin, M.D, President of the Association, Physician and Superintendent of the Pennsylvania Hospital for the Insane, Philadelphia.

Original Articles.

ON THE PRESENT METHODS OF DIAGNOSIS IN DISEASES OF THE STOMACH.[1]

BY GERTRUDE W. VAN PELT, M.D.

A LONG felt need for the means of making an accurate diagnosis of the diseases of the digestive organs is being daily more and more nearly met. The stomach, seemingly so accessible, has been until recently enveloped in mystery, and we have been obliged to discover its pathological conditions only by means of subjective symptoms and physical signs, often obscure, uncertain and contradictory. The same treatment could not be counted upon to relieve conditions, which to all appearances were the same; often grave diseases could only be suspected, while now they can generally be discovered early in their course. The study of the subject by books could not give great assistance, for the numerous symptoms given seemed to apply equally well to a variety of cases — headache, distress in the epigastrium, eructations, malaise, debility, constipation, etc., were certainly symptoms of indigestion but of what kind? Our old methods of palpation, percussion, etc., generally enabled us to determine the presence and degree of dilatation, but was it due to a partial paralysis of the muscles; to a hypersecretion of acid preventing the starchy digestion, or perhaps causing a spasmodic contraction of the pylorus; or to a lack of hydrochloric acid, causing a prolonged retention of the ingesta; to abnormal fermentation; to pure mechanical insufficiency; to chronic constipation, causing a pseudo-dilatation from the backing of gas; to a catarrhal condition; or to a much more serious one, atrophy of the glands? An accurate answer to these questions was rarely possible. Now, however, it is becoming so. Much remains yet to be done, and the study is probably in its infancy, but compared to the blind gropings of ten years ago we seem to have advanced. All this has been accomplished by a study of the contents of the stomach by means of the sound. The first analyses of the gastric juice were made by Leube in 1874, since which time numerous clinicians have developed the idea, more especially in Germany, but of late also in other countries. Some of the names prominent in this field are Ewald, Riegel, Jaworski, Von den Velden, Litten and Rosenheim. The only book on indigestion, written from the light of the science of to-day is Ewald's "Klinik der Verdauungskrankheiten" a new edition of which has just been published. Literature in the form of pamphlets and articles to medical journals is abundant, but because it is so scattered and not always easy to obtain, it has occurred to me that a detailed account of the present methods of work in this direction might be of general interest. It will be my aim in the following article to give as fully and clearly as is possible in a short space, the technique of examination, and also so far as I can, references for those who wish to study the subject more carefully.

The examination should always begin with a study of the physical signs for dilatation, though there is not much that is new to be said under this head. Riegel gives the patient four to eight grammes of natrium carbonate in about half a glass of water, and immediately after one-half that quantity of acid. tartaricum, instructing him to prevent the gas escaping from nose or mouth. As a rule this succeeds admirably. I have seen by this method the stomach as clearly outlined as if it were removed from the body. But if the instructions are not obeyed, or the pylorus is too lax, or the abdominal walls too thick, the experiment may be a failure. The method of Dr. Obrastzow[2] of Kiew, which is ordinarily less accurate but more agreeable to the patient, consists in pressing the fingers perpendicularly over the gastric region with the patient in the recumbent position, thus bringing the anterior wall of the stomach in contact with the stomach fluid, and by sudden movements producing a splashing sound, noting the outlines of this sound-producing area, and then giving the patient one to two glasses of water, and repeating the same thing. Professor Dehio, of Dorpat, modifies this method slightly by giving glasses of water by degrees and examining the patient alternately standing and recumbent, both by percussion and by noting the splashing sound. Dulness, of course, increases as more water is taken. According to the observations of Dr. Obrastzow, the lower border of the stomach in both sexes is most generally to be found in the lower supra-umbilical third. In the men of the middle classes it lies somewhat higher than in the women. In the working classes it lies higher than in the upper classes. In children under fifteen years it is seldom as high as the umbilicus. After pregnancies it is lower.

The most important results, however, to the study of indigestion have been obtained by the chemical examination[3] of the gastric juices, for which the gastric contents have been removed by a stomach sound at various periods of digestion. Which of these various periods is the best is a matter that has been much disputed, and about which there are as yet many opinions. Leube[4] for years advised the introduction of the sound after exposing the empty stomach to a thermic or mechanical irritation, sufficient to cause the flow of gastric juice, but this exposes the results to numerous errors[5] and has been abandoned for the most part for the use of the sound after the more normal stimulus of food. Ewald gives in the morning a test-meal of one-third litre of water or tea without sugar or milk, with one or two white rolls and examines in one hour.[6] Gluzinski and Jaworski give egg albumen simply.[7] Perhaps more rational than any of these is Riegel's method of examination after a meal which resembles as nearly as possible an ordinary digestible one, supplying the stomach with the three kinds of food necessary to the system. This literally is a test-meal which the others can hardly be said to be. It consists of a bowl of soup, a piece of broiled beafsteak, bread, potatoes, and a small quantity of butter. No coffee or wine is permitted.[8] The sound is used five hours later or at about the end of digestion. Germain Sée, of Paris, gives about the same meal, but examines three-quarters to one hour after, on the ground that the hydrochloric acid is then at its height. If hydrochloric acid were the only substance to be sought, two or five hours later would be indifferently good, the per cent. being about the same for both periods, but by examining five hours after eating it is possible to obtain an idea of other important factors, and better to estimate the digestive capacity of the juices.[9] It is, of course, unnecessary to add that after any of these test-meals the patient is allowed to take nothing until the sound has been used.

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[1] The publication of this paper, forwarded from Paris in July, has been unavoidably delayed. [Ed.]

[2] Zur physikalischen Untersuchung des Magens und Darms. Deutsches Archiv. f. klin. Med., Bd. 43, 1888.

[3] Ueber Diagnostik und Therapie der Magenkrankheiten. Riegel Sammelung klin. Vortage, No. 289, 1886.
Deutsche Medicinische Wochenschrift. No. 24-26, 1887. (Boas.)
Münchener Med. Wochenschrift No 34, 1887.

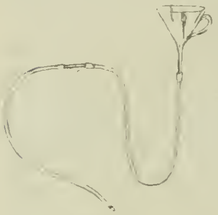
[4] Beiträge zur Diagnostik der Magenkrankheiten. Deutsches Arch. f. klin. Med., Bd. 33, 1883.

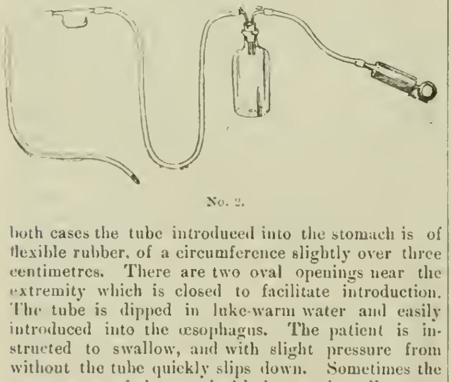
[5] Beiträge zur Pathologie und Diagnostik der Magenkrankheiten. (Riegel) Deutsches Archiv. f. klin. Med., 1885.

[6] Zur Diagnostik und Therapie der Magenkrankheiten. Berliner klin. Wochenschrift, No. 3, 1886.

[7] Methode für die klinische Prüfung und Diagnose der Störungen in der Verdauungs Function des Magens. Berl. klin. Wochenschrift, No. 3, 1884.

[8] Berliner Klin. Wochenschrift, xxv, 36, 1888.


No. 1.


No. 2.

The two forms of sounds, which with slight modifications are most generally in use, are represented in the two accompanying cuts. No. 1 is all sufficient for purposes of lavage, and by many is also used entirely for obtaining a specimen of gastric contents for diagnosis, which it is self evident must be undiluted. The patient is, however, for that, sometimes obliged to make violent efforts to express the fluid, which are often disagreeable and occasionally are unsuccessful. No. 2 is attached to an aspirator at its free extremity, so that the fluid can be easily and quickly extracted. In both cases the tube introduced into the stomach is of flexible rubber, of a circumference slightly over three centimetres. There are two oval openings near the extremity which is closed to facilitate introduction. The tube is dipped in luke-warm water and easily introduced into the œsophagus. The patient is instructed to swallow, and with slight pressure from without the tube quickly slips down. Sometimes the mere contact of the sound with the gastric walls causes such violent contractions that the contents are thrown forward with force, but generally if No. 1 sound is used efforts at expulsion and pressure over the epigastrium are needed, or the patient is instructed to cough, or the tube is gently pulled in and out a few centimetres, before the gastric contents will appear in the tube. If the aspirator is used, the sound can be withdrawn if desirable as soon as the little glass pocket, represented in cut No. 2, is filled, as only a few cubic centimetres are absolutely necessary for the analysis. It has been objected that the use of the aspirator is dangerous, and that it is possible with it to remove a piece of the mucous membrane. But if care is taken to aspirate gently, progressively and always incompletely, this unfortunate accident need not be feared.

The specimen obtained, it should be filtered and examined in regard to its hydrochloric acid, organic acids, mucus and pepsin. It is always interesting to study the solid residue with the microscope, though sometimes I have found it misleading if not done very thoroughly; for example, in a specimen rich in hydrochloric acid, I have found large bundles of striped muscle fibre, to be explained, of course, by the relatively small amount examined. The best results here will probably be in the study of bacteria, etc., but as this subject has been but imperfectly worked up, I will not attempt to discuss it. Probably the most important part of the examination is the analysis for hydrochloric acid, for which there are several tests.[10] The various chemicals used are the following:

(*a*) Congo Paper[11] which is turned blue in the presence of free hydrochloric acid. It has been much and justly criticised [12] as an unworthy test, responding also to lactic acid. It is true that the same faint blue color is produced when lactic acid is present in the strength of 1 to 1,000 as when free hydrochloric acid is present in the strength of ¼ to ⅛ for 1,000, so that a faint blue color proves nothing. When, however, it turns a deep blue color, we have a certain proof that sufficient HCl is present for the purpose of digestion, since lactic acid is not found in large enough quantities to give the deep color. The test is useful, because it can be used so quickly, even before the specimen is filtered and because it is often useful, in office practice, to be able to know immediately whether hydrochloric acid is in abundance.

(*b*) Tropaolin,[13] which is an aniline dye. The solution is made by dissolving the powder in distilled water, until the liquid has a bright orange color, then heating and filtering. This color in the presence of free hydrochloric acid is turned to a deep red verging to brown. It responds to ¼ for 1,000 of HCl, and is the only one of the aniline dyes which is absolutely uninfluenced by the presence of free organic acids.

(*c*) Methyl violet, also an aniline dye, is made into solution the same as tropaolin, sufficiently strong to produce a deep dark violet color. The addition of free hydrochloric acid changes this to blue.

(*d*) Carbolic acid 2% with a few drops of ferri sesqui chlorate to half a test-tube becomes steel blue, (this should always be added just before using). In the presence of free HCl, the liquid becomes immediately decolorized or is tinged with a dull leaden gray. If, however, it turns yellow, it is an evidence of the presence of lactic acid for which it forms one of the best tests. In fact, it is so much more sensitive to the latter that it should be reserved for it.

(*e*) Resorcin, 5 grms., sugar 3 grms., spirit. dilutum ad 100 c.c., is recommended by Boas.[14] But the certain and at the same time most delicate test that we have at present, is —

(*f*) The Phloroglucin-vanillen [15] test of Gunzburg. It is in the proportion of vanillen 1, phloroglucin 2, absolute alcohol 30.[16] One drop of the solution with a drop or so of gastric juice in a porcelain dish is slowly dissolved over an alcohol lamp. If free HCl be present even to the amount of $\frac{1}{20}$ for 1,000, the bottom of the porcelain dish becomes colored a bright rose. This forms also a most excellent and reliable quantitative test for HCl[17] which in health at the height of digestion should be from .15% to .2%. For this purpose the juice must be diluted gradually until it no longer colors the solution a bright rose, but on the contrary leaves a yellowish sediment on heating. The last dilution which produces the bright rose color corresponds to a solution of $\frac{1}{20}$ for 1,000 of hydrochloric acid. If, then, the number of dilutions be multiplied by $\frac{1}{20}$, the results will give the strength of the undiluted juice. for example, if diluted twenty times the juice contains .1% HCl.

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[9] Beiträge zur Pathologie und Diagnostik der Magenkrankheiten (Riegel) Deutsches Archiv. f. klin. Med., Bd., xxxvi, und Zeitschrift f. klin. Med., Bd. x.

[10] Ueber Vorkommen und Mangel der freien Salzsäure in Magensaft bei Gastrektasie (Von den Velden) Deutsches Archiv. klin. Med., 1879. Ibid, 1880.

Die Säuren des gesunden und kranken Magens (Cohn und Von Mering) Deutsch. Arch. f. klin. Med., 1886.

[11] Ein neues Reagens auf freie Säuren.

Münchener Medicinische Wochenschrift), No. 6, 1886.

[12] Die moderne Magendiagnostik. (Dr. Frh. v. Sohlern) Petersbg. Med. Wochenschrift, xiii, 51, 52, 1888.

Dr. Shaffer. Centralblatt f. klin. Med. ix, 16, 1888.

[13] Münchener Med. Wochenschrift, No. 5, 6, 1888. (F. Haas.)

[14] Centralblatt f. klin. Med. No. 40, 1888.

[15] Ueber den Werth der Farbstoffreaktionen auf freie Salzsäure im Mageninhalt. Dr. Shaffer. Zeitschrift. f. klin. Med., xv, 1888.

Centralblatt f. klin. Med., No. 40, 1888.

When no lactic acid is present, we have a cheaper and somewhat simpler test by the well-known trituration method. The normal solution of natrium hydrate (NaHO) is used, of which 1c.c. will neutralize .365 grms. of HCl. The solution is diluted one tenth to make the test more delicate. Litmus tincture is the indicator of the neutralization of the acid. If then, for example, at the moment it ceases to respond, 9.8 c.c. of natrium hydrate solution have been used, there is .3577% of acid present. But as this test responds also to other acids it is, of course, only useful for obtaining the per cent. of hydrochloric acid in their absence. Another quantitative test, not however so much used, is the "vert brillant."[18] The best test for lactic acid is Uffelman's or the iron and carbolic acid test mentioned above. Lactic acid will color it yellow in the strength of $\frac{1}{5}$ for 1,000. If the presence of HCl interferes with this test — which it rarely does — Haas recommends diluting the juice. It is not of practical value to apply the complicated tests for acetic or butyric acids, as they make themselves known to the sense of smell when present.

Examination for Pepsin. By chemical tests this is difficult and tedious. The same purpose can be served by the simple process of testing the digestive capacity of the juice in an oven kept at the body temperature. Or in place of such an oven, which is expensive, a water-bath with an arrangement for keeping the temperature uniform, serves the purpose equally well. If hard white of egg of 8 mm. diameter and 1 mm. thickness be put in a test-tube somewhat over one-half filled with normal gastric juice, which has been removed five hours after Riegel's test-meal, it should be digested in an oven in from thirty to sixty minutes. If, therefore, a specimen containing .15% to .2% of hydrochloric acid should require longer than one hour to digest the albumen, we would infer that it was deficient in pepsin, and if it failed to digest at all we would conclude that pepsin was lacking. Should the specimen under consideration have a low per cent. of hydrochloric acid that must of course be raised to about .2% in order to judge of the quantity of pepsin. It is often interesting to prepare several fluids for artificial digestion, as may be suggested by the particular case, one as it is extracted from the stomach, always for comparison, and others with hydrochloric acid or pepsin or both added, noting the time of the disappearance of the albumen in each case.

The secretion of rennet[19] has been studied, but so little has been verified that I will only mention it so far as to say that its presence is sought in the same way as pepsin, except that milk is used instead of egg albumen. Under normal circumstances of course the casein is soon precipitated. The ordinary test of sodium chloride and acetic acid is used to discover mucin.

Besides being chemically disturbed, the stomach may be abnormal in regard to its mechanical or absorbing functions. Much has been written lately about the value of salol in studying the motor activity of the stomach. It is composed of phenic and salicylic acids, and is insoluble in an acid medium but soluble in an alkaline. The theory is that as it cannot, therefore, be broken up in the stomach, an estimate of the muscular activity can be formed upon an observation of the time elapsing between the taking of salol and the appearance of salicylic acid in the urine. This should be from thirty to sixty minutes. The method was first recommended by Ewald[20] and has since been used by many with different opinions as to its usefulness. Dr. Bourget,[21] of Geneva, has experimented considerably with this drug recently, and his results are very interesting. He found that in normal stomachs he could vary at will the time between the ingestion of salol and the excretion of salicylic acid by simply changing the diet to one which was more or less stimulating to the gastric juice. If this is true in normal stomachs, the inaccuracy would of course be much more marked in disease where there are such varying amounts of acidity in the stomach. Klemperer later recommended oil as a means of judging of the motor efficiency.[22] He gives the patient 105 grms. of oil and in two hours washes out the stomach. Normally about 70 to 80 grms. should be found at that time. As only 1% to 2% of the oil is decomposed, forming fatty acids, and as none is absorbed from the stomach, its motor activity can be the sole cause of the disappearance of the oil. But nothing better than Leube's method has as yet been proposed; namely, that of washing out the stomach *seven* hours after a test-meal. Riegel[23] has slightly modified and carefully applied this by washing the stomach *five* hours after *his* test-meal, which was described above. If he finds it empty, he knows at least that the motor activity is not at fault. If he finds a small quantity of food, he considers it not seriously affected and uses the substance obtained for the further necessary examination. A stomach which is not empty seven hours after eating an ordinary meal, shows only a high grade of motor disturbance. Although there is nothing mathmetically exact in this method, it is sufficiently so for all practical purposes, and, after some experience, one is able from the quality and appearance of the undigested mass to form a fairly accurate idea of the motor deficiency.

The examination of the absorptive function of the stomach is not very satisfactory. It consists in giving two grammes of potassium iodide in a gelatine capsule and examining the saliva from minute to minute for the appearance of iodine. In health it should be found in from six-and-one-half to eleven minutes if taken on an empty stomach, or, if taken immediately after a meal, in from twenty to thirty-seven minutes.

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[16] Ein neues Reagens fur den Nachweiss freier Salzsäure im Mageninhalt. Centralblatt f. klin. Med., No. 45, 1888.

[17] Centralblatt f. klin. Med. No. 40, 1888.

[18] Hyperchlorhydrie et Atonie de l'estomac, par Germain Sée.

[19] Untersuchungen über das Labferment und Labzymogen im gesunden und Kranker Magen. Boas. Studien über das Vorkommen des Labfermentes im Magen des Menschen unter pathologischen Verhältnissen. Johnson. Die diagnostische Verwerthbarkeit des Labfermentes Klemperer. Zeitschrift f. klin. Med., Bd. 14.

Ueber die Labferment. Carl Rosenthal. Berliner medicinische Wochenschrift, xxv, 1888.

[20] Therapeutische Monatshefte, No. 8, 1888.

[21] Revue Médicale de la Suisse, Rom viii, December 20, 1888.

[22] Deutsche Medicinische Wochenschrift, No. 47, 1888.

[23] Ibid.

This concludes a brief description of the ordinary technique of examination which is used at present, though variations and additions will constantly suggest themselves in the study of individual cases.

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A CASE OF OVARIOTOMY COMPLICATED BY PREGNANCY.[1]

BY MAURICE H. RICHARDSON, M.D.,
Surgeon to the Massachusetts General Hospital.

In the diagnosis of abdominal tumors in women of child-bearing age, the possibility of the existence of a gravid uterus should never be forgotten. It has happened sooner or later in the experience of the most expert operators and experienced diagnosticians that a pregnant uterus has been opened by mistake. In some cases it is extremely difficult to exclude pregnancy, especially when the abdominal tumor is of moderate size. In many the history and surroundings have been such that the idea of gestation has not been prominent enough to receive serious consideration. It is well to bear in mind that a pregnancy may exist without any of the ordinary signs beyond enlargement of the abdomen. The tumor itself may resemble a cyst so closely as to deceive the most expert fingers. When, in addition to a negative history and a physical examination strongly suggestive of a cyst, is added the fact that fœtal heart-sounds cannot be heard, it is not strange that mistakes have been and will continue to be made.

The difficulty of exactness in diagnosis is not over when the abdomen has been opened. It is clearly impossible to get an extensive examination of a large tumor through the small median incision usually made. One must judge by the color, consistence, fluctuation and other physical appearances, as determined by an inspection and palpation of a small portion of the tumor. In a case of hysterectomy reported some years ago[2] it was impossible for me to say whether the tumor contained fluid or not till the introduction of the trocar. In a solid tumor this method of diagnosis presents no serious objections; but if the case is one of pregnancy, the dangers are obvious.

In the following case these questions arose, and gave rise to a good deal of embarrassment, not unattended by danger to the patient, which were happily averted. It is quite probable that there would have been no difficulty in diagnosis had the patient been able to speak English.

Annie K., age thirty, a Pole. Entered the Massachusetts General Hospital July 6, 1889. Speaks little or no English. Married eleven years. Seven children; youngest child sixteen months. Family history negative. She stated that two years ago she noticed a tumor in the right hypochondrium, which has increased steadily ever since. Has had much pain, which has increased and been worse the last few months. Catamenia regular, and not excessive, except that for four months before her last child was born she flowed. Catamenia now due in about a week. Patient well-developed and nourished. In the right upper quadrant of the abdomen there is a mass the size of a child's head, which is elastic and distinctly fluctuating. Dull over tumor, but tympanitic between it and the border of the liver. Tympanitic also to the right of the mass and between it and the pubes. The tumor extends beyond the median line. In the left inferior quadrant there is another and similar mass, with a resonant sulcus between the two. Umbilicus not prominent. Lower mass fluctuating, and both freely movable. Resonance not materially altered by change of position. At a vaginal examination made at a consultation of the staff the cervix was found drawn back, fundus forward. The mass in the left was thought to rise from the pelvis, and seemed to be independent of the uterus.

July 9th. By incision in the linea alba, below the umbilicus, the lower tumor was exposed. It was found to have a smooth reddish surface, such as is found in ovarian cysts recently inflamed, there was distinct fluctuation; though it had a rather doughy feel. It did not look like the usual ovarian cyst and from this fact it attracted particular attention. Having determined, however, that it was probably a cyst, of the left ovary, as was thought by several of those who had previously examined it, I tried to introduce the large trocar, for the purpose of evacuating it. The point entered the mass with great difficulty, so that I withdrew it. There was a spurt of blood from the puncture which was very severe. This was controlled temporarily by the superficial application of a clamp. On enlarging the wound enough to make a thorough examination by drawing out the whole tumor I found it to be a symmetrical enlargement of the uterus. Even then I did not think of a pregnancy, for beyond its symmetry there was nothing to suggest it. The question was raised, however, and I replaced the uterus temporarily, meanwhile removing an ovarian cyst of the right ovary, which was filled with a thick gelatinous gray-colored fluid, and had a very long pedicle. The removal of this tumor gave us a better chance to examine the other. It was impossible to make out definitely what the enlargement of the uterus meant at this time. It was thought best, however, not to remove it. The puncture was sewed up with two catgut sutures and the whole replaced.

The temperature never reached 99° after the operation, and she was discharged well in three weeks, though suffering from an attack of diarrhœa at the time she was taken home. There was never any evidence of pregnancy, and nothing resulted from the necessarily rough manipulations of the uterus during the operations. When she was made to understand the question, she said that she expected another baby in about four months.

In reviewing this case it is difficult to see how the mistake could have been avoided, basing our opinion upon all the facts obtained. There would have been no doubt had she been able to express herself. The absence of the usual signs of pregnancy, with the physical examination made at the time of the consultation, and the displacements of the parts by the complicating tumor, made the diagnosis very uncertain. It is, nevertheless, quite remarkable that no mention should have been made of a possible pregnancy before the operation, and quite as much so that there should have been so much trouble in making out the cause of the uterine enlargement at the time the tumor was exposed.

Note. — November 10th. I have just learned that this patient has been under observation at the Out-Patient Department of the Lying-In-Hospital, and that she was, at last accounts, very near the completion of her term, and that everything was going on well.

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[1] Read before the Boston Society for Medical Improvement, October 14, 1889.

[2] See Boston Med. and Surg. Journal, September 8, 1887.

REPORT ON PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

MILK SUGAR AS A DIURETIC.[1]

Professor Sée has recently presented the result of his study of the diuretic action of milk sugar, which he considers the most reliable of all diuretics. In diseases of the heart and stomach, and also in renal or cardiac affections accompanied by dropsy, its diuretic qualities render it very servicable. Milk in these cases, as is well known, is of great value, not only on account of its diuretic properties, but also because it is so complete a food. Three or four quarts of milk a day may be used with advantage, but the proportion of sugar in milk is rather too small. Professor Sée has discovered, by experimenting successively with different constituents of milk, that lactose is the active agent. The action of the other constituents of the milk, such as the water and the salts, is inconsiderable, the chloride of sodium adds nothing, and the salts of potassium very little, to the polyuria induced by the sugar of milk.

This sugar is found in all kinds of milk, is crystalline, and quite soluble in water. About three ounces of it dissolved in two quarts of water, with complete suppression of every other liquid, as soup, tea, wine, mineral water, etc., will afford marked diuresis in all cardiac troubles, no matter what the lesion may be, though the results are less constant in arterio-sclerosis.

In twenty-five cases abundant diuresis resulted, at least eighty ounces of urine were passed, usually one hundred or more, in the twenty-four or forty eight hours subsequent to beginning the treatment. As soon as the treatment was stopped the amount of urine fell off to what it had been before the administration of the diuretic. Professor Sée, therefore, considers lactose to be, not only the most efficient diuretic, but also the least harmful. If milk is used, and two quarts only are taken, diuresis follows; if four quarts of milk, containing six and one-half ounces of sugar of milk, marked glycosuria is produced; at the same time there is considerable excretion of urea, indicating a destruction of the albuminates. With the sugar alone these disadvantages may be avoided, for three and a quarter ounces of milk sugar in water will set up a copious diuresis, such as we cannot be sure of having from even four or five quarts of milk.

The polyuria resulting from this treatment surpasses that from all other methods; the amount of urine rises rapidly to two, two and one-half, usually to three or three and one-half quarts, and even to four or four and one-half quarts on the third day. After this it remains at that point, or drops to two and one-half quarts for some days. After a few days the same treatment may be employed to repeat the diuresis.

It is fair to say that this action of the lactose may be relied upon in cases of cardiac dropsy, but in those of renal origin its effects are slight. In cardiac disease it never fails unless the kidneys are diseased, and the amount of albumin is considerable. When the amount of albumin is small, the result is favorable, from which it may perhaps be inferred that there is at present only a simple venous congestion. It is suggested that the diuresis may serve as an indication of the condition of the kidneys. Various conditions may affect the diuresis; sometimes diarrhœa occurs, and this diminishes the amount of urine, or the patient may have been subject to profuse sweating, which would also lessen the quantity of the urine.

As a rule the remedy is well borne. It may be prescribed for eight or ten days and then omitted for a few days and again renewed. If the simple solution is not well tolerated, brandy or peppermint may be added to it. All other liquids should be reduced in amount or omitted while this treatment is pursued. This method presents great advantages over many others, and the patient may partake of any food; a meat diet, if the physician so desire. Professor Sée considers that the physiological action of lactose is upon the kidneys, since it does not exert any influence upon the circulation. He classes it with caffeine, as he believes that caffeine acts upon the kidneys only, and not through the circulation, as do digitalis and strophanthus.

Lactose is regarded as superior to caffeine, as it does not effect the brain and nervous system.

CODEINE AND MORPHINE IN DIABETES.

Dr. Mitchell Bruce has compared the effects of these alkaloids in two classical cases of diabetes.[2] The observations extended over several months and were made with great care. The sugar in the urine was first reduced to a minimum by a strictly anti-diabetic diet, and then one of the drugs was administered to both patients, and its effects on the sugar were noted. Phosphate of codeine was given subcutaneously, and the dose was gradually increased to more than twenty grains a day. After an interval on strict diet, acetate of morphine was given to both patients, up to as high as five or six grains per diem; of the two drugs, the morphine proved to be more efficacious, as under it the sugar was more completely controlled. Codeine is much more expensive than morphine, and large doses of it are necessary. Narcotic effects from morphine seldom presented themselves so long as the sugar continued to fall.

Dr. Bruce found some difficulty in removing the last traces of sugar, and he suggests that in practice we should be satisfied with reducing the sugar to a small amount. rather than use the large doses required to free the urine from it completely.

CODEINE TO RELIEVE ABDOMINAL PAIN.

The fact that many practitioners still prefer opium to morphine in the treatment of abdominal pain, led Lauder Brunton[3] to question whether some other alkaloid than morphine was not more powerful in cases of this sort. Barbier, in 1834, found that codeine had an especial action in lessening pain from irritation of the solar plexus, while it did not disorder digestion, and rather aids the action of the bowels. Brunton concluded from these and other experiments that codeine is likely to be of value in relieving abdominal pain, and has employed it with success especially in painful affections of the intestine and lower part of the abdomen. It is particularly valuable where morphine is to be avoided on account of the condition of the heart or lungs, or where it is desired not to interfere with the action of the bowels, on the other hand, where there is much diarrhœa it is not so serviceable as morphine or opium, because it does not lessen peristaltic movement. The dose employed is half a grain in pill.

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[1] L'Union Médicale, June 15, 1889. American Journal Medical Sciences, October, 1889.

[2] Practitioner, July, 1888.

[3] British Medical Journal, 1888.

CAFFEINE SUBCUTANEOUSLY AS A CARDIAC TONIC.

Henchard[4] gives the preference to caffeine over any cardiac stimulant for the relief of heart weakness dependent on any peripheral condition as, for example, pneumonia. Its action is rapid, its elimination quick and it is harmless. Digitalis is too slow. Caffeine acts as a tonic, as a cardiac tonic, and as a diuretic.

NITRO-GLYCERINE, ESPECIALLY IN CASES OF EMERGENCY.[5]

Dr. Joseph B. Burroughs has recently called the attention of the profession to the effects of this drug, the rapidity of its action, and the lack of taste when taken in water. It is least liable to change, and is the handiest to use in the form of a one per cent. solution — one drop is a dose of a one per cent. solution; this may be taken in water, the physician dropping ten drops into a tumbler and adding ten teaspoonfuls of water; one teaspoonful now representing one drop of the remedy. If there is need of great haste, or if the patient cannot swallow, from being unconscious, one drop can be placed within the lower lip or upon the tongue; the drug may be given subcutaneously, but so rapid is its absorption through the mucous membrane of the mouth, that unless the syringe should happen to be filled it is doubtful if time would be gained.

Patients differ in the amount required to produce an effect; some requiring less than one drop, others requiring three or four drops to produce the same effect; the usual dose, however, is one drop.

Patients also differ in the duration of the effect of the drug; usually the effect lasts three or four hours, but in a few cases the effect has ceased in twenty or thirty minutes.

When given by the stomach the effect is apparent in a few minutes, the pulse being increased from ten to twenty beats, and becoming full and regular. In a few cases there is slight headache, lasting for a few minutes. In larger doses the face becomes flushed, a severe headache is experienced, accompanied with a feeling of fulness, singing in the ears, flashes before the eyes, and all the symptoms of an increased supply of blood to the brain. On account of this effect on the cerebral circulation, care should be taken in administering the remedy to the aged, as the sudden expansion of the cerebral vessels might cause a rupture of their weakened calcareous walls.

Cases are reported of its use in angina pectoris, faintness during a minor surgical operation, rapid prostration in typhoid fever, in opium poisoning, in uræmic coma, in nephritis.

SULPHONAL.

Dr. Kast, the discoverer of sulphonal, gives some experimental conclusions about the retarded activity of sulphonal.[6] Many have found its primary hypnotic action postponed too long, that is, two or three hours or more, and that the effect lasts even into the succeeding day. Two qualities distinguish sulphonal: first, its insolubility; second, its resistance to chemical change. It is easily soluble in concentrated mineral water. It should be given in the early evening hours in a good quantity of warm water; but with the supper. In this way advantage is taken of those conditions favoring rapid solution, namely, a fairly large quantity of water with a good proportion of hydrochloric acid, and salts of peptones in rich abundance.

Dr. William H. Flint, gave sulphonal in thirty-three cases with a result of six hours sleep in 82% of the trials. The general conclusion which may be drawn from his observations is, that sulphonal, even in single doses of twenty to thirty grains, is a safe, and, in the main, reliable hypnotic, free from unpleasant concomitant effects. He noticed moderate somnolence on the morning following the administration of the remedy.

Sulphonal is of exceptional value in insomnia occasioned by debility, neurasthenia and mental perturbation, and it has no appreciable anodyne properties.

The experience with sulphonal at the Richmond Asylum, Dublin, under Mr. Norman, was favorable. The advantages of sulphonal are: that it has no odor, is almost tasteless and produces no gastric derangement and no troublesome head symptoms. Its disadvantages are its bulk and insolubility; its action is slow. Dr. Bornemann[7] gives an account of a case of poisoning by sulphonal. The patient was a physician, fifty-three years old, a victim to the opium habit. On one occasion sixty grains were given shortly after nine o'clock in the evening, and thirty grains more an hour after midnight. Sleep did not follow promptly, but the patient showed symptoms of muscular incoördination of a decided character. It took six days for the ataxia to subside, and during a portion of that time there was great mental depression. The agreement among observers as to the unqualified merit of sulphonal is remarkable. Oesterreicher finds it somewhat slower in action than the other hypnotics, and advises its administration several hour before bed-time. It seems to be especially useful in nervous diseases.

Schwalbe's account is very complete and his trials were carefully conducted: out of fifty patients, in 66% a prompt and satisfactory action was obtained; in 24% the result was relatively poor, and in 10% negative. The patients had various diseases, but analysis shows the important fact that in twenty-four cases of purely nervous insomnia success was complete in 90.3%. On the contrary, when the primary affection determined the sleeplessness, the test was satisfactory in only 44% of the cases. Schwalbe concludes from this that sulphonal is purely a hypnotic and not a narcotic: that it has power to quiet the excited brain and restore the equilibrium, if disturbed by a minor influence only. Unlike morphine, it does not first diminish pain before sleep, nor in cases of cough did it diminish the tendency thereto during sleep.[8]

It is of importance that the profession should be informed as early as may be of the drawbacks which attend the use of any new and powerful drug, and no better discussion is to be found than that of Dr. J. P. Crozer Griffith. He considers sulphonal a valuable agent, but not without the power of producing undesirable and quite unpleasant secondary effects. First to be noted among the disadvantages of sulphonal is its slow action. This is to be carefully borne in mind in determining the hour of its administration; and the patient should perhaps be notified of its peculiarity, or disappointment may follow. Another peculiarity of sulphonal is the marked tendency which its hypnotic action has to persist during the succeeding day. To overcome this difficulty one can do nothing more than give the remedy early in the evening, at seven or eight o'clock with the evening meal, and to adapt the dose to the individual. But this determination of the individual dose constitutes a sometimes insurmountable obstacle to the use of sulphonal. The dose probably most often recommended by writers is from fifteen to forty-five grains, and it has been repeatedly claimed that unpleasant after-effects only follow the administration of a dose unnecessarily large. But this is not the fact. Rosin found that fifteen grains were seldom, if ever, enough to cause sleep, except in three cases in which starch, given under the name of sulphonal, had an equally good effect. Other observers believe that an efficient dose for men is sixty grains, and for women thirty grains, and that the best results are not obtained until the third night of administration. Unpleasant secondary effects have been observed in a certain proportion of cases. Prominent among them may be mentioned a condition of excitement instead of the wished-for sleep. Temporary delusions after the ingestion of the drug, nausea, dizziness, and headache, are effects which may follow the ingestion of sulphonal. The production of a marked sense of fatigue, of depression, and of confusion of mind is not infrequently referred to by authors. Severe motor incoördination and a somnolent condition are liable to appear if sulphonal be given at the same time with opium or to opium habitués. Unpleasant results following the administration of sulphonal in a case of angina pectoris are reported.

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[4] Le Bull Méd., 1888, p. 705.

[5] Lancet, June 22 and 29, 1889.

Therap. Monatshefte, 1888.

[7] In the Deutsche Medizinal Zeitung, November 6, 1888.

[8] American Journal Medical Sciences, 1888, p. 285.

The large majority of writers pronounce favorably for sulphonal as a hypnotic. Its chief disadvantages are: the slowness of its action, that it may prolong its effects into the following day, it is difficult to determine the suitable dose, it may produce unpleasant secondary effects, and it very often fails to exert any hypnotic action.

Paraldehyde, and especially amylene hydrate, is preferred to sulphonal, and disagreeable results following the administration of amylene hydrate are much less frequently reported in the journals than is the case with sulphonal.

The disagreeable taste of amylene hydrate is entirely removed by giving the full dose, forty-five minims, in three capsules of fifteen minims each. It is especially to be preferred where a rapid hypnotic action is desired, or where there is not time to learn by repeated trial the amount of sulphonal suited to the patient in question. In cases where the stomach is irritable, it is probable that sulphonal will usually be more easily tolerated.[9]

HYOSCINE.[10]

In Professor Jolly's wards, in Strasburg, hyoscine was given in twenty three cases, chiefly mania, melancholia and dementia. In 80%, five to seven hours sleep was obtained; in 14%, three to four hours, and in 5% the result was negative. Among them two cases after a subcutaneous injection of $\frac{1}{100}$ to $\frac{1}{120}$ of a grain, became pale, complained of dizziness, heaviness in the head and indisposition, and there was no sleep. In a paralytic $\frac{1}{100}$ grain brought on a delirium, which continued several hours without sleep. Better results followed the administration by the mouth than when given subcutaneously; the action comes on more slowly but continues longer and is less dangerous; the dose is about twice as much, $\frac{1}{50}$ to $\frac{1}{60}$ of a grain. By whatever channel the drug is absorbed the system is soon accustomed to it, and it becomes necessary to increase the dose, sometimes up to $\frac{1}{20}$ grain a day. It is then advisable to give up its use and choose some other hypnotic for a few days. It is an inexpensive drug, and it diminishes excessive perspiration. In insomnia of patients with active motor disturbance, hyoscine seems to be the best hypnotic; with quiet but sleepless patients, chloral, amylhydrate, sulphonal and paraldehyde are better. Hyoscine excites undesirable symptoms more readily in nervous diseases not accompanied by cerebral affection.

Buddee in his thesis[11] published the following results of trials: "On the tremor of paralysis agitans, and in tremor senilis and alcoholicus, it acts promptly, also procuring sleep in these cases; the influence on the tremor is not permanent, however. A constant effect is a sense of fatigue. Habituation is quickly established, so that the dose must be increased.

Dr. Fischer[12] found it very successful in the treatment of mania, and as a hypnotic in the dose of $\frac{1}{120}$ to $\frac{1}{60}$ grain in distilled water subcutaneously. Purely as a hypnotic Fischer discourages its use until other drugs have failed, because its depressing effect is felt by the whole system.

Salgo, chief of the insane asylum in Budapest, founds his opinion on several hundred trials[13] and declares its action in raving, excited patients extraordinarily successful. In these cases, however, one may scarcely speak of a genuine, full sleep; the patients are always sleepy, and yet always awake. They may even take their food while under the influence of hyoscine.

COCAINE.

Dr. Szumann in the *Therapeutische Monatshefte* suggests some limits within which cocaine may be used with safety, a point of very practical interest. With doses for adults of one-half to three-fourths to one grain subcutaneously he saw no untoward effects; one grain, however, is adapted only to robust individuals. Some patients will, of course, bear very large doses, among them certain opium takers, who have used as much as seven to thirty-seven grains daily, though one may get toxic symptoms in such patients from an injection of one and a quarter grains.

With nervous patients, and also with those having cardiac disease, as well as those inclined to cerebral congestion, large doses of cocaine may prove dangerous on account of the marked effect on the heart and circulation. Where injections of cocaine are made about the head, not more than half a grain should be used.

COCAINE IN CANCER.[14]

After the removal of the entire left breast for cancer the disease reappeared. During three months the usual intense pain which accompanies such cases set in, and was not relieved by the ordinary treatment after a fair trial.

An ointment of cocaine, one in twenty, had a marvellous effect. The pain was subdued almost immediately, and continually kept under control by its use. It was used for two months, there having been no occasion during that time to increase the strength. The patient died without the least suffering.

(To be continued.)

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[9] Therapeutic Gazette, May, 1889.
[10] Berliner klinische Wochenschrift, December 10, 1889.
[11] Quoted in Deutscher med. Wochenschrift, 1888, p. 407.
[12] Lancet, 1888, p. 1311.
[13] Therap. Monatshefte, 1888, p. 298.
[14] Lancet, January, 1889.

Clinical Department.

RUPTURE OF KIDNEY. — RECOVERY.

BY J. ARTHUR GAGE, A.M., M.D., LOWELL.

THE patient, L. S., is a male, single, twenty-three years of age, and of temperate habits. His family is phthisical. The patient himself is of good muscular development, accustomed to athletic work and generally free from sickness. For the last year he has been under the writer's treatment for occasional attacks of colic with suppression of urine. During these attacks the urine contained albumen and casts. During the last winter the patient has been somewhat paler than usual, and after successive examinations a diagnosis of commencing Bright's disease was made.

On January 13, 1889, while skating, he was struck by the shoulder of a skater coming in the opposite direction, in the left hypochondrium, and thrown upon his back. He started to rise, but fell back upon the ice, complaining of severe pain in the left side. He was placed upon a door, and carried to the house, where he was given some whiskey and a small dose of opium. A doctor present reported that he vomited, and that his pulse was fast and irregular. About an hour after the accident I first saw him with Dr. Charles Dutton, of Tyngsboro. The patient looked pale (his usual condition), but the pulse and temperature failed to show any unusual elevation. Physical examination with the patient on his back showed nothing abnormal about the abdomen, and no special spot of tenderness (a hæmorrhagic spot appeared later over site of blow). He remained quiet for an hour, when, in attempting to raise him to a sitting posture, he complained of pain in the left side just below the ribs, and of faintness. He was given a subcutaneous injection of one-eighth of a grain of morphia, and placed upon a mattress, upon which he was carried in a market-wagon to his home, four miles distant. He complained of considerable pain during the ride. He slept some that night, and felt comfortable the following morning. I was, however, obliged to catheterize him obtaining about sixteen ounces of simply high colored urine. (Three days later he confessed that on the 14th, in the forenoon, he stood upon his feet, and tried to walk while the attendant was out of the room.) On the evening of the 14th he was restless; temperature 100° F., pulse 120; and fresh blood in considerable quantity was withdrawn with the urine through the catheter. On physical examination dulness was found over the left side, extending from the median line of the back to within two inches of the umbilicus, and from the margin of the ribs to the top of the pelvis. There was also slight swelling over the left back as compared with the right, and this was tender to the touch. During the night the pulse went up to 130; he vomited, and only slept about three hours with the aid of morphia. On the morning of the 15th, Dr. J. C. Irish saw him with me in consultation, and the diagnosis of a rupture of the kidney with hæmorrhage, was confirmed. The treatment was absolute rest upon his back, subcutaneous injections of morphia, p. r. n., and what milk and water his stomach could retain. Blood was now obtained in every specimen of the urine, of which twenty-seven ounces were drawn on the 16th, his temperature being 100° and his pulse 100. Microscopic examination showed plenty of fresh blood and some broken-down corpuscles, but no casts could be found. On the 17th, thirty-five ounces were obtained, and there was a large chocolate-colored sediment in each specimen. The temperature was still 100°, and the pulse 80. He rested better, and was able to take considerable quantities of milk and pure water. On the 18th there were thirty-one ounces with a large sediment, and his pulse had dropped to 77. On the 19th his pulse had dropped to 70, and there were thirty-two ounces. The microscope showed a few pus corpuscles; otherwise the sediment consisted of broken-down blood. The line of dulness on the front of the abdomen was receding about a finger's breadth a day, and the tenderness was also diminishing. During the 20th and 21st his temperature remained at 99° F., and his pulse at 70. The amount of urine increased. On the 22d he passed the urine himself for the first time. He was now ordered five grains of acetate of potash three times a day. During the next week his temperature gradually declined to normal; his pulse remained at 70, and of good strength; the amount of urine averaged about fifty ounces per day; and he was able to take light nourishment. The sediment in the urine slowly diminished in quantity, but did not change its character; but at no time was the amount of pus sufficient to be noticeable. On February 3d the temperature and pulse were normal, and the dull area on the left side had diminished to a spot about the size of an orange, in the back. The patient passed sixty-three ounces of light-red urine. The sediment showed broken-down blood corpuscles and considerable granular débris with a few pus corpuscles. The patient was free from pain, was eating well, and for the first time in three weeks was turned from his back toward the injured side. This caused him no inconvenience except slight dizziness, and he was now turned daily, allowed to sit up at the end of the week; and in five weeks time from the accident was up and about the house. At the end of two months he had returned to his work, that of a bookkeeper, which he has been able to continue uninterruptedly since. At the time of writing the condition of the urine is as follows: specific gravity 1,016; albumen, slight trace; sediment, no casts found.

Comments. — The picture which this case presents of hæmorrhage from the urinary tract, accompanied by a tumor lying under the margin of the ribs, the whole following upon a severe blow, is sufficient to indicate an injury to the kidney; but the nature and extent of the lesion offers a question of some interest when taken in connection with the sequence of symptoms. The blow which caused the accident was not of an unusually severe character to be encountered by a healthy individual, and was not so regarded by the patient until he found that he could not rise without severe pain. In short, the diseased structure of the kidney must be held partly responsible for the result. Again, although undoubtedly the chief injury of the kidney occurred at the time of the accident, it gave rise to no hæmorrhage (visible in the urine), and no tumor appreciable upon examination over the anterior and lateral wall of the abdomen until more than twenty-four hours after the accident; and this followed upon an effort of the patient to get up and walk about his room. (It is possible that there might have been a slight hæmorrhage outside of the kidney that was not detected at the first examination.) It seems probable that the original blow caused a tear of the kidney structure, and that the motion of the patient sixteen hours later extended this into the pelvis of the kidney. Some interest also attaches itself to the result. It was confidently expected by the physicians that a lesion of this character would inevitably result in an abscess, yet the urine showed at no time any unusual amount of pus. The recovery in this case must, I believe, be attributed largely to the almost complete surgical rest obtained through the intelligent co-operation of the patient, there being neither active or passive motion of the patient's body for twenty-one days. I was asked by the patient what result the accident would have upon the course of his kidney disease. I told him that I did not think it would aggravate the disease in any marked degree. Indirectly, it has been of some benefit, since it has impressed upon his mind the importance of proper care in his general mode of life; and for the past six months he has been nearly free from his usual attacks attributable to the kidneys.

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INTUSSUSCEPTION AND RUPTURE OF THE INTESTINE; LAPAROTOMY AND DEATH.[1]

BY F. B. HARRINGTON, M.D.

A male child, five months old, was sent to the Massachusetts General Hospital by Dr. G. W. Mills, of Medford, and Dr. T. M. Rotch, who saw the case in consultation, with a diagnosis of intussusception or of twist of the intestine. The child came under my care during the temporary absence of Dr. M. H. Richardson. Five days before entrance, having been previously healthy and without antecedent constipation, he was seized with sharp abdominal pain, which was shortly followed by a discharge of mucus and blood. On the following day there was vomiting, and several more discharges of blood appeared. Dr. Mills did not see the case until the third day, when he at once suspected the condition, and gave enemata of warm water.

When admitted to the hospital, two days later, after having been seen by Dr. Rotch, he appeared a robust child, but evidently suffering from severe pain, having the expression of those ill with peritonitis. The abdomen was somewhat distended, and there was frequent vomiting. A mass could be felt distinctly, lying midway between the spine of the ilium and the umbilicus. The temperature was 103.2°, the pulse was 150.

Ether was given, and a pint of water was injected at an elevation of three feet, and was at once discharged on removal of the syringe. Water was again injected with a pressure of four and one-half feet of elevation. The bowels were then gently kneaded, the water being retained by means of pressure upon the anus. This produced little or no apparent effect, and the water was at once discharged.

The abdominal cavity was then opened by an incision in the linea semilunaris. There was an escape of water, showing that an opening existed in the intestine. Coils of comparatively healthy intestine were found presenting. Below these a mass of intestine was found, which presented its mucous membrane, being an inverted tube with an apparent length of four or five inches. At the end of this tube of inverted intestine was an opening, which admitted a probe for a considerable distance, showing that the intestine was doubled upon itself, and that the condition was an intussusception which had escaped through a rupture in the intestinal wall. The intussusception was, with considerable difficulty, reduced. It was found to consist of the cæcum and the colon, the latter containing a longitudinal slit, an inch and a half long, which had apparently existed for some time.

The appendix cæci was in a sloughing condition and was removed, there being a distinct line of demarkation, the result probably of pressure. At a short distance from the tear in the colon was a surface from which blood oozed and which was so thin that the serous walls were sewed together with several stitches.

On examination of the small intestine a tight constriction was found two inches from the cæcum. Above this point the gut was distended. There was no escape of gas or fæces after the reduction and firm pressure caused only the escape of minute amounts of gas through this constriction. This constriction made it necessary to open an artificial anus above that point. The edges of the ruptured colon were sewed to the edges of the abdominal wound. The small intestine was attached above the constriction to the abdominal incision, and when all was tight, an opening was made and a small amount of gas and fæces escaped Before closing, the abdominal cavity was hastily washed with warm water.

The operation was long and difficult, the abdominal cavity being open for more than an hour.

The child died one hour after being taken back to the ward.

The following is a demonstration of the specimen by Dr. R. H. Fitz, after its removal from the body:

The mucous membrane of the colon, for five inches below the valve, was extensively, uniformly and deeply injected. The lining membrane of the ileum, for two inches above the valve, was also injected, though not so intensely as that of the colon. In the cæcum, near the origin of the vermiform appendix, was an elevated, button-shaped patch of thickened, necrotic mucous membrane, a third of an inch in diameter. Four and a half inches below the valve was a line of sutures in the intestine, one inch long, and a short distance above it was a linear thinning of the intestinal wall, perhaps a half-inch long, apparently the result of a rupture of the muscular coat. A longitudinal rent through the bowel, two inches long, began twelve inches below the valve. Its edges were slightly everted, the mucous membrane along the rent deeply injected, and at the lower end was a gangrenous patch separated by a narrow bridge. The peritoneal surface of the colon along the rent showed a narrow margin of false membrane. There was also a linear cut, an inch long, in the ileum, some four inches above the valve, without everted edges or adherent false membrane.

The appearance of the specimen suggested that the invagination was ileo-colic, the cæcum being forced into the colon, and the strangulation affecting the upper part of the colon.

— The German correspondent of the *Medical Press* gives the following remedy for tapeworm, recommended by Dr. Numa Canopi. In the evening a dose of castor oil. The following morning eight grammes of thymol divided into twelve doses are to be taken, a dose every quarter of an hour, and after the last dose of thymol, a dose twenty grammes of castor oil. A few minutes after the last dose of castor oil is taken the tapeworm is expelled entire.

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[1] Read before the Boston Society for Medical Improvement, October 14, 1889.

A CASE OF INTUSSUSCEPTION IN A CHILD THREE YEARS OF AGE, SUCCESSFULLY TREATED BY RECTAL INJECTION.[1]

BY JOHN W. FARLOW, M.D.

N. R., a three-year-old boy, had always been well. I saw him March 7th, with the story of having been somewhat under the weather. His mother had given him castor oil, which produced four or five loose stools. I saw him in the morning, and found him crying at intervals and putting his hand near his umbilicus. The anus was rather relaxed and he passed a little blood and slime from time to time. Nothing was felt in the abdomen.

At 4 P. M. the pain had increased and was paroxysmal; at 9 P. M. the same condition, only more pain. The next morning early I found that he had slept some in the night, but since six o'clock he had cried and thrown himself round on the bed and over on to his face. He still passed the blood and slime, but no fæces. He kept putting his hands near the umbilicus and said the pain was all there. To the left of the umbilicus a very marked fulness could be seen, the lower part of which was dull and rather firm, while the upper part was tympanitic. The diagnosis seemed assured.

The boy was inverted, and his feet held up high. By means of a Davidson's syringe I injected slowly into his rectum one and one-half pints of luke-warm water, at the same time trying to press back the tumor from the outside. The child only cried the harder. About fifteen minutes later he got up and passed the water. Nothing but a little blood came with it, but on getting back to bed he stopped crying, and from that moment the pain entirely ceased and the tumor was no longer felt.

The case was uneventful after that. He had a fair stool March 11th, three days after the intussusception was reduced. I have seen him several times since, and he continues in good health.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

Meeting of October 14, 1889. Dr. W. L. Richardson, President, in the chair.

Dr. E. J. Forster read a paper on

MUSHROOMS AND MUSHROOM POISONING.[1]

Professor Farlow and Dr. Sabine discussed the paper.

Dr. M. H. Richardson reported a

CASE OF PREGNANCY COMPLICATING OVARIOTOMY.[2]

Dr. F. Minot asked whether an attempt had been made to hear the fœtal heart, which was generally audible even through the abdominal walls at the fifth month; and one would suppose could be detected still more easily in case of pregnancy if the stethoscope were applied directly to the uterus itself.

Dr. J. Homans cited a case in which Dr. C. C. Lee, of New York, punctured a uterus with a trocar and drew off some fluid, and yet the woman went on to full term and had a normal delivery. The appearance of the pregnant uterus is such that one can almost always recognize it. It is covered with peritoneum, beneath which one sees the pinkish muscular fibres. It might be mistaken for a succulent fibroid, but hardly for an ovarian tumor. I have had but one case similar to the one reported. In that the uterus was much smaller. The patient recovered perfectly from the operation, and about eight weeks later aborted, the fœtus being about two months old. She has since been delivered of a healthy child.

Dr. Homans then related a case of pregnancy, complicating the removal of an uterine fibroid by laparotomy, in which he had diagnosed uterine fibroid in a young woman and had advised against marriage. Several months later he was called to see her, and found a rapidly growing tumor which was causing a good deal of discomfort. The woman had been married three months, and had not been unwell since her marriage. There being some question as to the diagnosis, the uterus was punctured, a section of the tumor procured and sent to Dr. Whitney, who pronounced it fibro-myoma. Immediately upon puncturing the uterus the woman was in great agony, and became insane. She refused food, and her condition was such at the end of a week that hysterotomy was done and the tumor removed. The tumor had grown from the uterus in such a way that it was shaped something like the blowing part of a pair of bellows. The tumor weighed about fifteen pounds. It was a very solid fibrous tumor. Neither ovary was removed, nor either broad ligament disturbed. The operation brought no immediate relief. Ten days later she aborted, the fœtus being about three months old. Her mind then began to clear up, and she recovered perfectly. My action in this case might be criticised, but the pregnancy could not be made out with certainty, and it was impossible that the uterus and the tumor should go on increasing and the woman live, except in agony. The insanity following the puncture was, I suppose, puerperal mania. Menstruation has taken place somewhat through the scar.

Dr. J. C. Warren: I had one case of ovariotomy complicated by pregnancy of about three or four weeks, as well as I could calculate. The patient went on to full term and had a healthy child.

Dr. Homans, in reply to a question, said he could discover no cause for the acute onset of the pain following puncture.

Dr. M. H. Richardson, in closing the discussion, said there were two reasons why he did not use the stethoscope, there was no very urgent reason for removing the uterus in the uncertainty and he would not use a stethoscope which had not been specially prepared to insure asepsis.

Dr. F. B. Harrington reported a

CASE OF INTUSSUSCEPTION AND RUPTURE OF THE INTESTINE IN A CHILD OF FIVE MONTHS, WITH SPECIMEN.[3]

Dr. G. W. Mills of Medford: I was called to this case, October 4th, about 4 P. M. The child was said to have passed blood. I found a well-developed infant of five months which had been nursed at the breast since birth. It was then in a somnolent condition. It had been under the care of a homœopathic physician for four days previous. The parents informed me that about 5 P. M., October 1st, the child was taken screaming, cramps in the bowels, tossing about of the arms and legs, vomiting and straining. Later, about 8 P. M., it had two dejections of blood and mucus. The day previous (September 30th) the child had two dejections, natural in appearance, and up to that time had been a healthy child.

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[1] This paper will be published in full in the Journal.
[2] See page 480 of the Journal.

[1] Read before the Boston Society for Medical Improvement, October 14, 1889.

[3] See page 185 of the Journal.

The history during the time previous to my visit was that the child had attacks of pain, screaming and vomiting, with rectal tenesmus, passing only bloody mucus, and then intervals of tolerable quiet. Vomited the mother's milk, but retained small quantities of water and Mellin's food.

On examination, I found the temperature 100.8°, pulse about 130, respiration very rapid. Abdomen tympanitic, and on the right side in the inguinal region some tenderness, and what I thought might be a tumor. There was marked dulness there, and also on the left, I thought. The examination by the rectum was negative. The parents had given it a small enema two hours previous, the first mechanical treatment, and nothing passed but mucus and blood. I gave it an enema, about a pint of water, which came away tinged with bloody mucus. The dulness remained in the right inguinal region, and the child seemed to be in considerable pain, for which I gave an opiate. Stimulants were ordered.

I found the pulse in the evening (9 P. M.) 140, respiration 48, temperature 101.3°. Vomiting, straining and distress continued unrelieved, and the child evidently very weak. I told the parents that I would take counsel in the case, and that it might be necessary to open the abdomen to relieve the invagination which I thought existed.

October 5th, 3.30 A. M., pulse 140, symptoms unchanged; 8.45 A. M., pulse 140, temperature 99.3°; 3.30 P. M., pulse 136, respiration 36, temperature 100.1°; 10.45 P. M., pulse 120, temperature 101.7°. Abdomen tympanitic; symptoms unabated.

October 6th, 11 A. M., Dr. T. M. Rotch saw the patient in consultation, confirmed the diagnosis, and took charge of the case until it went to the hospital.

Dr. T. M. Rotch: The physical examination was almost negative. Usually in these cases by examining per rectum I can find a tumor by which I can make the diagnosis. In this case it felt to me as if something were pressing the intestine down, but I could not feel the invaginated portion. The abdomen was tympanitic, but nothing that could be called dulness was found at that time. There was a slight sensation on palpation of a tumor in the right inguinal region, but nothing very definite. The general symptoms were those of invagination and I decided to try hydrostatic pressure to a very limited extent, as the symptoms began on Tuesday and I saw the case Sunday morning. It is rather rare for a child to live as long as that with invagination. I suppose adhesions must have taken place and possibly sloughing. I tried hydrostatic pressure with a column of water six feet. I then decided that laparotomy should be performed at once.

Dr. R. H. Fitz remarked that the case illustrates thoroughly the importance of one of the conclusions he had arrived at in a paper read before the International Medical Congress a year ago, that after two or three days it is inadvisable to use forced injections for reduction. It seems as if the best hope for relief then lay in laparotomy; but if a still longer time, say a week, has elapsed, it is a question whether laparatomy would be as efficacious as purely medical treatment.

Dr. J. W. Farlow reported

A CASE OF INTUSSUSCEPTION SUCCESSFULLY TREATED BY RECTAL INJECTION.[4]

Dr. J. Homans: These are very hard cases to reduce after the abdomen has been opened, particularly where they have existed three or four days and cathartics have been given. I remember a case in a child of six months, where the tumor was in the left iliac region and on doing laparotomy the whole of the cæcum and the whole of the colon were invaginated into the upper part of the rectum. The practical point about reducing those cases is that you cannot pull the invagination out, but you have gradually to skin it out as you would put a glove on a finger.

Dr. T. M. Rotch: That is true where adhesions have taken place. The age of the child is an important element. The greater number of cases of invagination occur between the fifth and tenth months, propably the greater length of the mesentery at that time allowing a greater play of the intestine.

Dr. J. W. Farlow: It is a question with me whether opium in large doses in these cases is not contraindicated as increasing the relaxed condition of the bowels and whether it is not better to give it moderately rather than try to overpower the pain so that the child may keep quiet.

Dr. T. M. Rotch: It is very seldom that opium is needed in young infants with intussusception, they seem to suffer very little pain. They look very well and keep on nursing, and even after the operation they may nurse until near the time of death.

Dr. Farlow showed a

CONCRETION FROM THE TONSIL,

originally the size of the head of a large shawl pin, which he had removed from the tonsil of a girl of eight years. She had been troubled for some time with a hard paroxysmal cough, worse at night, and bad breath. She had been seen by several physicians who had simply considered the tonsil enlarged and had prescribed cough syrups in vain. By hooking forward the anterior pillar of the fauces, in a depression between the large, lower lobe of the tonsil and a smaller upper lobe, could be seen this large concretion which was removed by the dull curette. The cough was cured and the breath was no longer offensive.

Dr. Farlow thought that these depressions which are often concealed by the anterior pillar of the fauces and which are frequently the seat of these large concretions, are generally overlooked in examining the throat.

Dr. F. I. Knight: I once saw a case of exactly the same kind only the concretion had become very hard and calcareous. It was in a lady between forty and fifty years old, who had had paroxysmal cough and pain in the side of the throat for many months. I saw her three or four times before I discovered this thing. On probing into the crypts of the tonsils I struck something hard, and on enlarging the opening and putting in a bent probe I hooked out this mass which was as large as a pea, and the removal of which gave instant relief to the cough.

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[4] See page 486 of the Journal.

Dr. J. C. Warren exhibited a case of Trephining Instruments selected by Dr. W. W. Keene, of Philadelphia.

Dr. Wyman showed a

NEEDLE TAKEN FROM THE BREAST OF A CHILD OF EIGHT MONTHS.

The history of the case is as follows: The child was brought to my office October 12th, the mother thinking there was something alive in the right chest. On examining I found midway between the nipple on the right and the central line of the sternum a pulsating area a little smaller than a quarter of a dollar, the skin of which was red and the pulsation over it could be plainly seen. On putting the hand over it, I could feel very plainly the pulsation and in the centre of it there seemed to be a foreign body which felt like the head of a pin pulsating with each pulsation of the heart. The heart-sounds, however, were found to be normal. As the diagnosis was doubtful, Dr. F. C. Shattuck was called in. We decided to cut down upon the prominent point and this needle was found and withdrawn. The direction of it seemed to be toward the right ventricle. The child is now all right.

Dr. F. C. Shattuck: Every cardiac systole was distinctly communicated to the foreign body which must therefore have been in immediate contact with the heart valve or pericardium if its point was not imbedded in the muscle of the right ventricle. Dr. George L. Peabody, of New York, showed a year ago in Washington at the meeting of the Association of American Physicians a pin which was imbedded in the wall of the left ventricle and a portion of which projected into the cavity. It was evident from the condition of the pin and the presence of a cicatrix that the pin had lain there for some time. The immediate cause of death seemed to have been Bright's disease.

Dr. T. M. Rotch: It is possible that in this case the foreign body had penetrated the heart. About a year ago I showed a slate pencil which in all probability had penetrated one of the ventricles. The child recovered. Dr. Dwight's anatomical opinion on examining the child was that it must have entered the heart.

Dr. M. H. Richardson showed a

SUBMUCOUS FIBROID OF THE UTERUS

which he had removed without difficulty, the operation requiring but ten minutes.

Dr. J. Homans thought these tumors were usually difficult to remove. The removal had required two hours in some of his cases. He had sometimes had to resort to midwifery forceps to remove the tumor after cutting off the presenting part with the écraseur.

Dr. J. C. Warren thought in some cases the operation was very difficult. A method he had found to work very well was to make spiral incisions instead of attempting to get the knife or scissors through the pedicle at first. Begin perhaps half-way up the pedicle from the fundus and remove the tumor. The tumor yields at that point, comes down and by twisting round in a spiral way you gradually get to the pedicle. I found that quite an easy method in one case in which I tried it.

Dr. A. T. Cabot: In the polypoid form of growth the écraseur seems to me a very good instrument. I have removed several where they have been distinctly polypoid, one the other day as large as the fist, a sloughing fibroid; and after it was cut off with the ecraseur, which was done very readily, it left hardly an inequality on the surface of the cervix from which it came. I think where you can get the distinct neck of the polyp, I should prefer the écraseur to any other instrument, because you can place it so far up.

Dr. M. H. Richardson: In this case, if the wire had not broken I should have left more than half the tumor in. It was hour-glass shaped.

Dr. J. Homans showed an

INTRALIGAMENTOUS CYST.

The history is as follows: A woman, thirty-eight, came to me a fortnight ago with a tumor in the left iliac and left abdominal region about the size of a small football, tense, rather tender, and on vaginal pressure with the finger she became nauseated. She first noticed a slight enlargement in February. Since April she had had no catamenial flow whatever. The uterus was distinct from the tumor, as far as could be made out, although the tumor was closely approximated to it; and from the length of time it had existed, I judged there was no extra-uterine or intra-uterine pregnancy. The tumor had been rather rapidly growing during the last month or so, and the great trouble was the extreme pain. She was a domestic, a poor woman. I thought, from the fact that she had not been unwell, that there was the possibility of retention of menstrual fluid, but could not make out that the uterus was enlarged, and that fluid is generally retained in the vagina, and not in the uterus. On operating, I found on the left an intraligamentous cyst, which I tried to enucleate but could not. The Fallopian tube opened directly into this tumor. The fluid was dirty looking, not particularly sticky, about three and one-half pounds.

Dr. W. F. Whitney: There is, as stated, a communication between the tumor and Fallopian tube. As far as I can see, the membrane is continuous directly from one into the other, and the growth is a dilatation of the end of the Fallopian tube. It has grown deeper in than usual. I do not find any remnants of the ovary suggesting ovarian origin, and I think it is of purely tubal nature.

CORPUS LUTEUM.

In connection with this specimen, Dr. Whitney showed two tubes sent him for examination. They were quite large, thick walled, cavity dilated, more or less tortuous, and the membrane thrown into folds, red and shaggy, forming villosities which were markedly injected. One had a hole in it when received, so it was not known whether it contained fluid or not. The other was unopened and contained no fluid. Both were directly continuous with the normal Fallopian tube, and through it a bristle could be easily passed into this dilated cavity, showing an unobstructed passage from the uterus towards this cystic growth. The fact that the ovary was connected with one of these is interesting, and in that one was a large corpus luteum, which would be hard to differentiate from the true corpus luteum of pregnancy. That impregnation should take place under such circumstances seems a physical impossibility. As the tubes were dilated and grown together, the ovum could not get one way or the spermatozoa the other. At first the possibility was suggested that this vascular and filamentous condition of the tube was the result of a tubal pregnancy. Microscopic examination, however, failed to reveal any of the characteristic structures of impregnation, and showed an extremely filamentous condition of the membrane, but which had nothing of the villi of the chorion about it. This is a case of chronic salpingitis, and there is a corpus luteum, which for all practical purposes would be regarded as one of true pregnancy.

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AMERICAN GYNECOLOGICAL SOCIETY.[1]

THE SURGICAL TREATMENT OF POSTERIOR DISPLACEMENTS OF THE UTERUS,

by **Dr. Wm. M. Polk**, New York.

The author considered only those forms of retro-displacement which could not be benefited by pessaries. Operative procedure in these cases was divided naturally into direct and indirect methods. The indirect methods are Alexander's operation of shortening the round ligaments, anterior fixation of the uterus by suturing through the anterior vaginal wall, or the fixation of the cervix in the posterior vaginal cul-de-sac. Alexander's is the only one of these methods considered, the author's faith in it having been confirmed by fifty-two operations since June, 1883. The indications which he had given in 1886, he now modifies slightly. In extreme cases of retroflexion with prolapsed and tender ovaries benefit is usually only temporary. The benefit of the operation is questionable in ovarian prolapse, because there is usually accompanying disease of the organ itself or of its tube. The operation gives the most brilliant results in retroversion. In cases of prolapsus, it has a distinct and useful position as an adjunct to measures for restoring the pelvic floor and should always be employed. When Alexander's operation is contraindicated, or inefficient, the direct methods are to be employed. These methods fall into two distinct varieties: one utilizing the natural supports, the other creating new supports. Each has its own sphere, and experience must teach us which is the best in any particular case. The author has used them all and found none difficult of execution. The conclusions reached are, that when amputation of the appendages is demanded, reefing the upper portions of the broad ligament, including the round ligament (Tait's operation), is all sufficient. When the appendages are to be saved, the choice lies between the modifications of veutro-fixation, Wylie's operation of folding the round ligament, and the union of the round ligaments in front of the uterus, a method which the author has devised.

DISCUSSION.

Dr. W. H. Baker, Boston, accepts the preference given to Alexander's operation. Rather than do vaginal hysterectomy in prolapsus he would shorten the round ligaments and follow this by operations designed to narrow the pelvic outlet. He would do laparotomy where there was marked retro-displacement with adhesions. Central fixation would be found the best method in cases where the tubes and ovaries are not to be removed.

Dr. H. A. Kelly would restore the inferior supports before resorting to laparotomy for the relief of retroflexion. He thought the direct attachment of the uterus to the abdominal wall by suture was the ideal method, and he preferred to fasten the uterus by the ovarian ligaments rather than the broad ligaments, as the uterus was then held in a most favorable position of anteflexion, and there was a tendency to carry the cervix back toward the sacral hollow instead of forward, as in the former methods. Where the uterus was easily replaceable, he had several times done hysterorrhaphy without laparotomy by holding the uterus firmly forward in anteflexion against the anterior abdominal wall and passing several sutures from without through the abdominal wall, uterine tissue, and out again, the sutures being fastened by shot under which a silver coin or plate with a slit in it was slipped. The sutures should be well watched, kept antiseptic, and removed in two weeks, the patient in the meantime being kept in bed.

Dr. T. A. Emmet said that Dr. Marion Sims had a hollow canula made in 1859 for carrying the silver wire to be used in stitching the uterus to the anterior abdominal wall. He had passed this to the fundus in a case, but here his courage failed him and he did not finish the operation.

Dr. Polk, in closing the discussion, said that as vaginal hysterectomy is now done with so little risk, he might do it for prolapsus in a patient near the menopause. He thought that slight suppuration of the external wound was not injurious in Alexander's operation, as it insured a more certain result. Kelly's method he thought good, but the tension in certain cases might be too great. In his own device, he grasped the round ligaments three-quarters of an inch from each uterine cornu and tied them after bringing them together in front of the uterus. If necessary, a second ligature might be passed an inch or so in front of the first.

THIRD DAY. — MORNING SESSION.

THE RELATION OF UTERINE RETRO-DEVIATION TO PREGNANCY,

by **Dr. A. Martin**, Berlin, Germany.

While it was an admitted fact that pregnancy was impossible in certain cases of uterine retroflexion, he questioned whether it was so serious an obstacle as it is usually thought, and whether gravidity in these cases is such a dangerous condition. His paper was based on a study of one hundred and twenty-one cases. These all complained of the typical symptoms of the condition. Many cases had first applied for treatment for uterine catarrh, hemorrhages, tubal disorders, or perimetritis, and after the cure of these conditions had come back gravid. In the treatment, the bladder should first be emptied, then reposition effected by the fingers without the use of undue force, the patient being placed in the knee-chest position. A pessary should then be introduced and worn until the uterus will remain above the brim. If the pessary was inadmissable, a vaginal tampon of cotton-wool might be employed. Where the displacement recurred persistently, it was sometimes necessary to keep the patient in the prone position for a week or more. He concludes that congenital or acquired retroflexion is not the main obstacle to conception, but the congestion or endometritis which so often accompanies it. Most cases of retro-displacement of the gravid uterus do not attract attention and go on normally to term. In cases of incarceration, if replacement fails, we must consider the propriety of emptying the uterus or even of extirpating it.

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[1] Concluded from page 466 of the Journal.

DISCUSSION.

Dr. Bache Emmet had seen but few cases in which pregnancy had been complicated with retroflexion and had usually considered such a displacement as a barrier to conception.

Dr. Howard Kelly thought the tendency was to a spontaneous reduction and that only a small percentage of retroverted gravid uteri resulted in incarceration or abortion.

Dr. T. A. Emmet considers that retroflexion never occurs except as a sequence of pelvic inflammation. Such a displacement had little to do with the prevention of conception so long as the tubes were permeable. He had sometimes succeeded in preventing abortion in these cases in the use of vaginal tamponing. He prefers to place the patient in the knee-elbow position for replacement, and would employ patience rather than violence. He thought the use of a pessary rather dangerous in these cases.

Dr. A. J. C. Skene could not conceive how any condition could arise which would justify the extirpation of a retroflexed gravid uterus.

Dr. H. T. Hanks, New York, agreed with Dr. Skene. In the treatment of retroflexion during pregnancy he preferred vaginal tampons rather than pessaries.

Dr. Skene considered Peaslee's flexible ring perfectly safe for use after replacement.

Dr. Kelly would first try gentle measures, then allow nature to have a chance and in case of need would not hesitate to do laparotomy and raise the uterus from above.

Dr. J. R. Chadwick had always found the uterus replaceable. He advised gentle manual and postural replacement, repeated several times if necessary. He was surprised at the desperate measures which had been advised.

RESULTS OF SUPPRESSION OF MENSTRUATION,

by Dr. E. C. Gehrung, St. Louis.

He maintained that menstruation was not absolutely necessary. That under certain conditions it was a hæmorrhage and consequently a waste which frequently caused impoverishment of the blood, with its many morbid sequences. This bleeding can be lessened or arrested by the use of a careful vaginal tamponade, not only with impunity, but with a very beneficial result in curing the anæmia and its consequences. He recorded a series of interesting cases and cures which corroborated his views. He had never seen the method attended by any bad results, and it would relieve many cases which otherwise might necessitate much more serious procedures.

DISCUSSION.

Dr. Boldt could not consider menstruation ever a pathological condition. Anæmia from free menstruation was relatively rare, and might persist after the uterine appendages were removed and menstruation had ceased, thus proving its entire independence of this function. The method might have a certain limited field or value.

Dr. Arthur W. Johnstone, Danville, Ky., thought the essayist mistaken in considering menstruation a pathological condition. It was as necessary as respiration, its object being to wash away over-ripe lymphoid corpuscles. The lower animals with whom the uterus was in a horizontal position did not menstruate, while in the anthropoid apes and in certain monkeys which stood erect menstruation was regularly performed. If the vagina were tamponed, he thought there was danger that the blood would be forced into the tubes. He did not think the vascular system controlled menstruation, but the sympathetic nerves of the pelvis and the spinal cord. It was not the removal of the appendages which stopped menstruation, but the severing of the pelvic sympathetic nerves. He believed that menstruation was a part of the mechanism which prepared women for pregnancy.

Dr. A. Reeves Jackson said that while Gehrung might be wrong in theory, his experience had shown that his results were correct. He cannot see why the excessive loss of blood should not be prevented, and when the method was applied to prevent an excessive flow he decidedly indorsed it.

Dr. Gehrung did not propose to repress menstruation except where the patient was so anæmic that the loss of blood could not be well sustained. If his theory might not be correct, his results were certainly very gratifying.

INTERMEDIATE TRACHELORRHAPHY,

by H. J. Boldt, New York.

Knowing that certain pathological conditions will probably result from the presence of an extensive cervical laceration, it is right to pursue a course that will prevent them. For many and obvious reasons, it is impracticable to sew up tears immediately after delivery, and in operations done when the pathological changes have existed for a term of years, the return of the normal cannot be so complete as when the operation is done early. Intermediate trachelorrhaphy is the repair of the injury after the cessation of the lochia and before marked pathological changes have occurred. The author has done this operation twenty-six times and has been much pleased with the result. The operation is simple, an anæsthetic being required only in extremely nervous women; it is absolutely free from danger if properly performed, may be done in a physician's office, and the patient allowed to go home afterward, though in private practice they are usually made to lie down for a few hours. In performing the operation, the torn surfaces are carefully and thoroughly scraped with a very sharp curette, and brought together by carefully placed catgut sutures. The object of the operation was to prevent the conditions which would necessitate Emmet's operation.

DISCUSSION.

Dr. Bache Emmet thought that the object of the proposed operation was good, but that the cases in which it was necessary would be rare. It was impossible to say at an early day whether any operation would be required. Operation at the office was dangerous and could not be countenanced by this Society. A skilled gynecologist might do the operation safely, but others would fail. Boldt's ideas he considers dangerous to the average practitioner.

Dr. Skene thinks Emmet's views all sufficient, and that there is no present need for discussing the matter. The operation should not be done without an anæsthetic or at the physician's office.

Dr. B. F. Baer, Philadelphia, said the operation should not be considered slight. It should not be done without anæsthesia. If laceration of the cervix was a lesion *per se*, the author of the paper was right in proposing its immediate closure.

Dr. T. A. Emmet thought that Eve had a laceration and every parous woman since. He did not believe that any operation should be done in the absence of symptoms. Severe tears would be beautifully healed during the puerperium, if the patient received proper care, and the parts were kept aseptic. Cases were the most dangerous and most apt to become epitheliomatous where the lips of the tear remained soft and many pregnancies followed each other rapidly.

Dr. **Engelmann** thought Boldt's method might sometimes be of great service, but he did not approve of operation at the office.

Dr. **Boldt**, in closing, still asserted that if laceration is marked three months after confinement, it will not close by itself, and that his method would produce a cure quickly and safely. He did not advocate operation at the office, but said it could be safely done.

THE VALUE OF LAPAROTOMY IN THE DIAGNOSIS AND TREATMENT OF MINOR FORMS OF INTRA-ABDOMINAL AND INTRA-PELVIC DISEASE,

by Dr. T. A. **Ashby**, Baltimore.

The paper is a plea for the greater extension of the indications for laparotomy, in which he endeavored to remove the unreasonable prejudice which in some quarters was still maintained against laparotomy for diagnosis. There should be no mortality from simple abdominal section, and it was proper to perform it when a diagnosis could not be made by other means. In tubal and ovarian disease he would follow the middle course. Laparotomy was indicated for small intra-pelvic neoplasms in which the relations could not be otherwise determined. It was always indicated in extra-uterine gestation and was much to be preferred to the use of electricity. He also advocated it where there was persistent pelvic pain either from displaced organs or from neuralgic conditions where other methods had failed to give relief. The claims of explorative laparotomy were based upon sound logic and sustained by a growing and extended experience. Both its dangers and its difficulty had been exaggerated.

AFTERNOON SESSION.

PARTIAL ROTATION OF THE OVUM IN EARLY PREGNANCY AS A CAUSE OF PLACENTA PRÆVIA,

by Dr. **Edward Warren Sawyer**, Chicago, Ill.

As the ovum is not very firmly attached to the decidua during the early period of pregnancy, it is not impossible that a sudden jar might partially detach it, the detached portion rolling away from the uterine wall and becoming atrophic, while a fresh portion coming in contact with the uterine wall lower down, new villosities would develop and the placental site be transferred from the upper to a lower zone, so as to form a lateral placental prævia and a lateral insertion of the cord.

DISCUSSION.

Dr. A. F. A. **King**, Washington, said that very little was really known on the subject. He thought Dr. Sawyer perfectly correct in his hypothesis, except that it would not explain complete placenta prævia. In the literature of the subject he had found nothing of interest except that relating to the old theory of total detachment.

Dr. **Sawyer** thought an ovum entirely detached would be cast off as a foreign body. There was always a history of previous disease where there was complete placenta prævia. During the first fifteen days of pregnancy the allantois is projected from the embryo, and wherever it strikes the periphery the placenta is formed.

THE PROTECTIVE INFLUENCE OF VACCINATION DURING THE INTRA-UTERINE EXISTENCE OF THE FŒTUS,

by Dr. **Cornelius Kollock**, Cheraw, S. C.

The transmission of disease germs from the mother to the fœtus is an assured fact. He had questioned whether intra-uterine vaccination would insure the fœtus against small-pox. He had vaccinated thirty-six pregnant women of whom fourteen were primiparæ. All of their children were vaccinated, and where it failed, the operation was repeated several times. The results show that in many cases absolute immunity was conferred by the vaccination of the mother. The period of gestation and the number of the pregnancy greatly influenced the result. The later the mother was vaccinated, and the greater the number of her previous children, the greater were the chances of conferring immunity on the children.

DISCUSSION.

Dr. **Sawyer** corroborated the statements made and said the subject was of peculiar interest to him. He had for ten years been an official of the Chicago Board of Health, and had vaccinated over 15,000 children. Of this number there were many who could not be successfully vaccinated, and in these cases the pregnant mother had always been vaccinated or exposed to the variolous influence during her pregnancy. He thought the idea that it was necessary to revaccinate every seven years absurd, as an experience of over 75,000 cases had shown him that it was usually possible to vaccinate an individual in infancy and once again after puberty.

A CASE OF NEPHROTOMY FOR REMOVAL OF CALCULUS OF THE KIDNEY,

by Dr. **James R. Chadwick**, Boston.

Calculus of the kidney had been diagnosed by several eminent authorities in the case under consideration and the kidney had been opened for its removal, but a careful exploration had not revealed a calculus. Subsequent to the operation the symptoms disappeared for a time and then reappeared after disturbing influences which caused the patient severe mental worry. This worry had been long continued and the author now believed it to be the original cause of the patient's symptoms. The case showed the great difficulty in the diagnosis of certain cases of renal calculus and was one of thirteen reported in which no stone could be found. In several of the cases symptoms had disappeared after operation.

DISCUSSION.

Dr. **Kollock** had seen a similar case.

Dr. A. F. **Currier** suggested that the stone might have been a very small one in the cortical substance of the kidney and so have been overlooked. He recalled a somewhat similar case in which the passage of a stone the size of a pin's head relieved the symptoms.

Dr. **Chadwick** thought that a calculus could not have been overlooked in his case, and that the mental worry had been the sole cause of the symptoms.

The following papers were then read by title :

A CASE OF INTERSTITIAL PREGNANCY,
by R. STANSBURY SUTTON, Pittsburgh;

ELECTRO-THERAPEUTICS IN GYNECOLOGY,
by DR. G. APOSTOLI, Paris;

A CONTRIBUTION TO THE CLINICAL HISTORY OF CYSTIC DEGENERATION OF THE OVARIES,
by DR. R. B. MAURY, Memphis;

A BRIEF REPORT OF MY OWN ABDOMINAL WORK FOR 1889,
by DR. R. STANSBURY SUTTON, Pittsburgh;

STRICTURES AND OTHER OBSTRUCTIONS IN THE VAGINAL TRACT AND THEIR TREATMENT,
by DR. H. F. CAMPBELL, Augusta;

THE EFFECTS OF ERGOT UPON THE PARTURIENT UTERUS,
by DR. JOHN GOODMAN, Louisville;

IN MEMORIAM, DR. ELLWOOD WILSON,
by DR. WILLIAM H. PARRISH, Philadelphia.

The Society then adjourned.

The following gentlemen were invited guests of the Society: The members of the Obstetrical Society of Boston; Dr. Weeks of Maine; Dr. Virgil O. Hardon, of Atlanta, Ga.; Dr. H. M. Cutts, of Boston; Dr. A. E. Moseley, of Baltimore; Dr. Brooks H. Wells, of New York; Dr. H. Robb, of Philadelphia; Dr. Gardner, of Montreal.

The officers for 1890 are: *President*, John P. Reynolds, Boston. *Vice-Presidents*, William M. Polk, New York, and Ely Van de Warker, Syracuse. *Secretary*, Joseph Taber Johnson, Washington. *Treasurer*, Matthew D. Mann, Buffalo. *Other Members of the Council*, William Goodell, Philadelphia; W. H. Baker, Boston; Bache Emmet, New York; B. B. Brown, Baltimore. *Honorary Fellows*: Charpentier, Paris; Robert P. Harris, Philadelphia. *Fellows:* F. H. Davenport and A. D. Sinclair, Boston; J. M. Baldy, Philadelphia; Henry T. Byford and W. W. Jaggard, Chicago; William E. Ford, Utica; Andrew F. Currier and Clement Cleveland, New York.

The fifteenth Annual Meeting will be held in Buffalo, beginning the third Tuesday in September, 1890.

Recent Literature.

The Medical News Visiting List for 1890. Philadelphia: Lea Brothers & Co.

This has been thoroughly revised and brought up to date in every respect. The text portion (48 pages) contains the most useful data for the physician and surgeon, including the latest therapeutic novelties, their doses and effects, and an alphabetical table of diseases, with the most approved remedies. The classified blanks (176 pages) are arranged to hold records of all kinds of professional work, with memoranda and accounts. Three styles are now published, as heretofore: Weekly (dated, for 30 patients); Monthly (undated, for 120 patients per month, and good for any year), and Perpetual (undated, and likewise good for any year); so that "THE MEDICAL NEWS VISITING LIST" adapts itself to any system of keeping professional accounts.

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THE OPERATIVE TREATMENT OF CANCER OF THE RECTUM.

AT the last annual meeting of the British Medical Association a very interesting discussion took place in the Section of Surgery on "The Treatment of Cancer of the Rectum." The discussion was opened by Mr. Jessop, the president of the section, in an address which was published immediately, but the remarks of the gentlemen who followed him have but just appeared in print. Altogether the discussion was a notable one, and fully realized its object as stated by the president, "the collating and placing upon record the deliberate observations of men whose opinions are entitled to the respectful consideration of the profession."

Mr. Harrison Cripps presented a record of seventy cases treated by operation. He does not regard excision and colotomy as in any way rival methods of treatment. It is only in the cases in which excision is impracticable that the question of colotomy arises. It requires much care to select cases of malignant rectal disease in which benefit is likely to result from its removal. In not more than fifteen or twenty per cent. is excision practicable. In deciding upon excision, both constitutional and local conditions must be considered. The age, the general strength, and the state of the urine, materially influence the decision; for an operation, which in a middle-aged and comparatively healthy patient is one of small risk, becomes extremely hazardous in the aged and feeble. The abdomen should be carefully examined to ascertain, if possible, that the abdominal glands and lumbar viscera are free from implication; nor should an operation be undertaken unless there is a reasonable prospect of thoroughly removing the disease.

The risk to life, as given in the table published by Kelsey, is high, twenty-two deaths out of one hundred and forty cases collected. Mr. Cripps believes that a lower rate of mortality can be obtained by more care in the selection of cases, and greater care in the after-treatment, and that ten to fifteen per cent. will be cured.

Mr. Allingham divided cancer of the rectum into three states: (1) the small annular growth, freely movable; (2) a large crater-like mass, fixed, and into which fæces pass, causing great pain and discomfort; and (3) a rapidly spreading ulcerative form, quickly involving the surrounding parts. The first of these is the only form in which excision ought to be thought of, and, moreover, only when it starts two inches up the rectum, and when the upper limit of the growth can be easily felt. The second and third headings are the conditions in which colotomy is indicated.

Rushton Parker, Professor of Surgery at University College, Liverpool, differed from the opinion that excision should be limited to cases where the disease was low; as by removing the coccyx and lower vertebræ of the sacrum, opening the peritoneum, and severing the lateral attachments of the bowel, the latter could be drawn down extensively.

Mr. Jessop, in four cases out of seven operated upon by excision, obtained results which he considers incomparably better than the most exceptional colotomy.

For Mr. Cripps the question of colotomy arises when excision is impracticable. Its advantages are partly the relief it affords to symptoms, and partly its influence on the growth of the cancer. The relief obtained and the suffering avoided are unmistakable, and Mr. Cripps believes that the progress of the growth becomes decidedly slower after the operation. The risk of life, according to recent statistics, is as high as thirty-eight to forty-three per cent., but this high percentage is due, not to any inherent danger in the operation, but to the delay in its performance. In this regard Bennett May has seen a difference in his own practice. Since 1885 he has held a higher opinion of the value of the operation as one of expediency as well as urgency, and he now recommends it when any notable difficulty exists. During the same period (since 1885) he has practised the inguinal operation. Consequently his inguinal cases (thirteen in number, with one death), show somewhat more favorable results as regards duration of life than his lumbar operations, which are twenty-three in number, with five deaths. Mr. Jessop expressed the same opinion, by saying that the high rate of mortality, which undoubtedly attends the operation when undertaken for the relief of complete obstruction, arises more from circumstances that precede the operation than from the operation itself.

As regards the choice between lumbar and inguinal colotomy, the general opinion seemed to favor the latter, as more easy and certain of execution, especially when the colon is empty and contracted, and the patient fat. All the real miseries of the artificial anus for the patient, Mitchell Banks, of Liverpool, thinks, are just as bad in one situation as the other.

Some modification of the operation seemed advisable to most of the speakers.

Mr. Mitchell Banks, of Liverpool, believes that a very great improvement over the usual plan of merely opening the colon laterally, and stitching the opening to the wound, consists in cutting the bowel clear across, and fixing the upper end. Other speakers were satisfied to gain the same point — the prevention of the passage of the bowel contents below the artificial opening — by drawing the gut forward so as to create a "spur" between the two portions.

Mr. Bennett May strongly advocated the immediate opening of the bowel in the inguinal operation rather than postponing it to a future day, after securing it in the external wound. All the advantages, both as regards security from peritonitis and obtaining a good working outlet, Mr. May believes can be obtained by proceedings less elaborate than those advocated of late. Mr. Cripps speaks a little more guardedly in favor of immediate opening, saying that there is no special danger in opening the bowel at once, if necessary.

Colotomy, as a preliminary operation to excision of the cancerous rectum, was regarded with favor; and a patient on whom the two operations had been successfully performed was exhibited by Mr. Marsh, of Birmingham.

Bennett May thinks that commonly, when cases of cancer of the rectum come under operation, there are already existing secondary deposits, and that these, more than the surgical difficulties, limit our efforts in the direction of a radical cure.

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THE MASSACHUSETTS HEALTH REPORT.

The Twentieth Annual Report of the State Board of Health for the year 1888, maintains the high standard of excellence of the series. The expenditures of the Board, beginning with the sum of $1,168.98 in their first year, and less than $3,000 the second, have increased with the public confidence in their wisdom and usefulness to $71,934.28, including $7,638.15 for ordinary expenses, $8,915.40 for food and drug inspection, $30,450.92 for the maintenance of the purity of inland waters, $24,929.81 for the special report on a metropolitan system of drainage.

The correspondents of the Board report chiefly with regard to infection-diseases and questions of water-supply and drainage, showing an interest of the people in these subjects which is favorably reflected in the mortality returns, the weekly publication of which adds to their value.

The chemical and bacteriological examinations of water-supplies and the experiments in intermittent filtration of water and sewage through different soils have been continued and have been of material assistance in advising the fourteen towns which consulted the Board in matters of sewerage and drainage, and the eight towns in regard to water-supplies. The important points are brought out clearly that chemical analyses of water are often valuable chiefly by comparison with a normal standard for each particular region, that continuous filtration finally accomplishes little purification of sewage and that intermittent filtration is quite effective only through gravel or sand, if in large quantities.

An investigation of thirty-two cases of small-pox and five deaths showed nothing important except the large number of unvaccinated persons in the State. Several State vaccine institutions are recommended. An inquiry into the prevalence of diphtheria in Pittsfield was negative except as affirming an infection-origin. Typhoid fever assigned to a polluted well in Canton and two hundred cases, by estimate, of malaria in Deerfield, were attributed to the common sources of those diseases.

Of 3,064 hogs raised near Boston, Professor Mark found 12.86% trichinous, and of 234 from public institutions 17.95%, as compared with 3.9% of 8,769 Western hogs examined by Dr. F. S. Billings. Professor Mark believes that hog-offal eaten uncooked by hogs, and not rats, is the source of infection.

Dr. Hartwell quotes 85% of 535 apothecaries and 66% of 225 physicians as being of the opinion that the opium and morphine habit is not growing in frequency. He concludes from the United States statistics of commerce and navigation that the importations of opium since 1870 have not increased commensurately with the population, and believes that the introduction of opium otherwise than legally is small, in spite of the high tariff and the extensive smuggling which has been detected in the northwest. Being unable to estimate the distribution of legally imported opium the writer sees no reason for supposing that the inhabitants of our State are more adicted to its use than those of other States of the Union. Why especial weight is attached to the opinions of five superintendents of insane asylums upon this point we are unable to see. The "consensus of the competent" is considered the nearest approximation to a settlement of questions of opinion, but Virchow's caution is a wise one that in multiplying opinions we may multiply error.

Mr. G. R. Tucker's paper is a timely contribution to the question of cleanliness in hospitals. His most interesting and accurate experiments in determining the quantity and distribution of micro-organisms are excellent illustrations of the scientific method of research. They show that the bacteria found in impure air, of which carbonic acid is again proved to be a pretty fair measure, are heavier than the atmosphere, are circulated by making beds, sweeping, etc., are best removed by mopping the floors after the air has become quiet, and that the sulphur method of fumigating as ordinarily used in the hospital is not efficient.

In the six years of administration of the Food and Drugs Act, 24,232 samples have been examined of which 14,912 were found of good quality, the specimens for the most part being of articles liable to sophistication and often suspected. Many of the added impurities were not injurious to health, as, for instance, the substitution of glucose in honey, syrups, etc. The percentage of adulteration has materially diminished. Of 1,566 samples of milk, Dr. Harrington found in 1,464 from thirty-nine cities and towns 794 above and 650 below standard, also 101 below standard out of 122 samples from suspected dairies. Dr. Davenport, in 960 samples largely collected from suspected sources, found 322 not fairly of the quality required by statute; eighteen were, however, sold as skimmed milk. In 299 samples from the western part of the State, examamined by Professor Goessmann, 252 were above standard, 47 below, and 10 skimmed. Here, also, the good effect of the law is made manifest as compared with previous years, and it should be borne in mind that there are undoubtedly pure unsophisticated milks which do not reach the statute standard of thirteen per cent. of solids.

The report will well repay, on the part of physicians and the public, a careful study.

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MIGRAINE, ITS PATHOLOGY AND TREATMENT.

According to Anstie, migraine (hemicrania) is a variety of neuralgia of the ophthalmic division of the fifth nerve. He remarks that the attacks of migraine often interchange with neuralgia seizures; that they often begin with pain distinctly located in the supraorbital nerve, as the result of exposure to cold or other of the causes of ordinary neuralgia. This view is favored by Senkler in "Pepper's System of Medicine."

Romberg regarded migraine as a neuralgia of the cerebrum, but Hesse observes that the symptoms of this neurosis are equally compatible with its location in the branches of the fifth distributed to the meninges and bones of the cranium.

There is, however, much to be said in defence of the view that migraine is primarily a neurosis of the sympathetic nerve. According to Du Bois-Reymond, the phenomena of migraine are best explained by the supposition that there is abnormal excitation of the sympathetic on the affected side, and he emphasizes in this connection the retraction of the temporal artery, the pallor of the countenance, the dilatation of the pupil; all of which are due to tonic contraction of the vascular and oculo-papillary muscles.

But, as Jaccoud remarks, the constancy of these phenomena has not been established, and Moellendorff afterwards maintained a directly contrary view, to wit, that the symptoms of hemicrania depend on a unilateral relaxation of the vessels of the head, from want of energy of the vaso-motor nerves. Eulenburg[1] adopts an intermediate theory, affirming that a certain class of cases is undoubtedly vaso-motor in its origin. He describes two types of migraine: the sympathetico-tonic or angio-spastic, and the angio-paralytic or neuroparalytic forms. In the one, the face is pale and sunken; in the other, it is hot, turgid and flushed during the height of the attack. In the one, the pupil is dilated and the temporal artery appears as a hard cord; in the other, the pupil is contracted, and the temporal artery is swollen and throbs with increased force. In the one, the eyes are pale and sunken; in the other, they are suffused and prominent.

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[1] Ziemssen's Cyclop. Art. Hemicrania.

Jaccoud reconciles the pathological differences above mentioned by assuming that there cannot be two vascular conditions so contradictory, as the substratum of migraine. If, he says, clinicians have witnessed opposite phenomena, it is simply because they observed at different periods; in other words, the paroxysm of migraine is constituted by an abnormal excitation of the sympathetic followed by a paralysis by exhaustion, which marks the decline and the termination of the paroxysm. The contraction of the vessels during the onset and the active period of the attack explains why the pain is exaggerated at each pulsation of the artery; as for the origin of this pain, it may be attributed to the vascular cramp itself, which compresses the nerve filaments contained in the unstriped muscles.[2]

Hemicrania is a disease from which no station or condition of life is exempt. Rich and poor, the man of ease and the fashionable lady, the mill-operative and the kitchen drudge are alike subject to migraine. Among the factors in its production, hereditary predisposition is the most potent. The disease follows the female line, being usually inherited from the mother only, and by the daughters only (Eulenburg). When there is a strong hereditary tendency, girls of quite a young age may be attacked by migraine, Eulenburg has known girls of four or five years to be sufferers.

In half the women affected with migraine, the attacks occur at the menstrual period or immediately after. In other cases, the attacks are due to mental excitement, after attendance at a party, at a theatre, etc. Sometimes the attack is provoked by reading and study; some persons have hemicrania from reading by artificial light. The attacks sometimes appear to originate in indigestion.

It is in this form of neuralgia that the recently discovered analgesics, antipyrin, acetanilide, phenacetin, exalgine, seem to do the most good. Here the triumph of guarana and caffeine is sometimes seen. When the attack can be traced to the stomach, ipecacuanha in one-fourth grain doses every hour has been commended, also rhubarb and soda, or some of the effervesing aperients.

In the angio-spastic variety, nitrite of amyl inhalations, and nitro-glycerine by mouth, have been beneficial. In the angio-paralytic form, ergot has been found useful.

Senkler speaks favorably of bromide of lithium, fifteen grains every hour for two or three doses. The effervescent bromide of caffeine, or bromo-pyrine, is a good preparation. Seguin speaks enthusiastically of cannabis indica, one-fourth grain doses of the alcoholic extract three times a day, to be continued for weeks and even months. Aconitia (one two-hundredth grain) and gelsemium have been praised; the former is perhaps, one of the most certain remedies in angio-spastic variety. Malarious forms are speedily benefited by large doses of quinine. Always, as prophylactic treatment, arsenic and cod-liver oil are indicated.

Anstie and Eulenburg think well of galvanism to the head and sympathetic. Firm pressure on the head and compression of the carotids sometimes give relief; the same may be said of sinapisms to the nape of the neck and the application of a hot-water bag to the back of the head.

After all, resort must sometimes be had to hypodermic morphia in the atrocious suffering of migraine.

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MEDICAL NOTES.

— "A False Conception" is not, as our readers might suppose, the title of an obstetrical brochure, but the name of a new novel treating of New York society life.

— A medical student, of New York, is reported to have manifested his lunacy by the strange freak of eating a portion of the body of a negro, which was being dissected.

— The corner-stone of the new Philadelphia Polyclinic and College for Graduates in Medicine, on the south side of Lombard Street, between Eighteenth and Nineteenth, was laid with elaborate Masonic ceremonies, November 4th.

— Dr. Robert H. Duncan, the surgeon of the Pacific Mail Steamship *Colon*, has brought suit against the city of Brooklyn for $60,000 damages, on the ground that he had intermittent fever, and the Brooklyn health authorities, acting on the belief that he had yellow fever, had him removed to quarantine.

— That the female sex make, on occasion, as good fighters as any body else seems to be indicated by a very lively row in the Hospital of the Women's Homœopathic Association, of Philadelphia, where one woman of the staff is engaged in ejecting another for practising Christian Science under an Eclectic medical diploma in a Homœopathic institution.

— Again a Chicago doctor has sued Miss Frances E. Willard, President of the Women's Christian Temperance Union, for $50,000, for some trouble connected with the jurisdiction over a hospital managed, or sought to be managed, by the Union.

— The Associated Charities of Denver have opposed the building of a hospital by the city because of the danger that the management of a hospital under the government of the city might be subjected in an injurious way to political influence. The advantage of placing such an institution under public control, in that the press and the public in general would feel free to investigate and criticise its management is admitted, and they go so far as to grant that this is impracticable in the case of a hospital controlled and managed by a church or a religious order; but believe that all the benefits that might flow from free criticism could be obtained in the case of a hospital under the immediate control of this organization of charitable societies.

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[2] Jaccoud: Path. Interne, t. i, p. 478.

BOSTON AND NEW ENGLAND.

— The "Charity Club," a philanthropic institution of Boston, is said to contemplate the establishment of a new hospital for the surgical treatment of diseases of women of this city.

— George Francis Train, who has been confined in the Suffolk Jail, for several weeks for debt, at the instance of one of his creditors, was, last week, adjudged to be insane by Judge McKim, of the Probate Court, and released. The decision was founded upon the report of Dr. E. S. Boland, who was appointed by the court to ascertain Mr. Train's mental condition. This decision is in accordance with a previous one on the same subject made by the New York courts.

— Regarding the frequency of diphtheria in certain of the manufacturing towns of Massachusetts, we note that, in Lowell, there were "sixty-one cases of diphtheria and croup in October, with fifteen deaths from the same causes." From Lawrence, thirty-three deaths from diphtheria and croup are reported for the five weeks ending November 2d.

— The trustees of the Salem, Mass., Hospital have decided to employ a resident physician, and to make the superintendency a non-professional office. This will drop the present superintendent, Dr. George Z. Goodell. It is understood that the position of resident physician will be tendered to Dr. J. P. Fessenden.

— The commissioners appointed by Governor Burleigh of Maine, to select a site for the new insane asylum, have practically agreed upon a location on the river road to Orono, comprising about one hundred acres. The price to be paid is $20,000.

— At a special meeting of the Connecticut Hospital Society, November 4th, the bequest of $50,000 by the late Mrs. Ellen M. Gifford was accepted. This money will be used for the erection of a new building on the hospital grounds, in which incurable poor persons may be supported and cared for. The wishes of Mrs. Gifford will be fully carried out.

— The annual report of the trustees of the Maine Eye and Ear Infirmary at Portland, contains the gratifying announcement that the interest bearing debt has been liquidated and the institution is so much better prepared for its work. During the past year there has been an attendance of 6,300, comprising 856 diseases of the eye, the ear and the throat. Among 771 registered, 248 operations have been performed.

— The annual report of the Maine General Hospital shows that during the year 690 different patients have been under treatment. The authorities have decided to begin on the work of extension, which has been so much needed, and have obtained plans for an additional wing, which, when ready for use, will somewhat more than double the present capacity, while the increase of cost of maintenance will be in far less ratio. The current expenses of the past year were $32,687.41 and $17,703.66 was received from patients for board.

— The Eliot Hospital, at Manchester, N. H., is to be open to public inspection next week. The hospital building is nearly completed, but is not furnished. The trustees have fitted up one room at a cost of $75, and this will be the standard for the furnishing of the others, as the committee having the matter in charge desires that the furnishings throughout shall be uniform. Those who are contemplating furnishing a room are invited to inspect this one and model after it. The name of the giver will be permanently placed upon the room as a perpetual memorial of the donor. Persons or societies contemplating any such steps as the above are invited to communicate with the trustees at once.

— The twenty-seventh annual meeting of the New England Hospital for Women and Children was held October 29. During the year a nurses' home has been added to the institution by the purchase of the Farnsworth estate. The Home is named the Goddard Home for Nurses, in honor of several members of the Goddard family who have been benefactors of the hospital.

The report of the New England Hospital Dispensary, showed that during the year 3,175 patients have been treated and 9,800 visits have been made to those needing medical assistance. The number of patients attended at home was 955, of whom 85 were cases of midwifery. This has been done by the two physicians who reside at the dispensary. Since the establishment of this branch a society has been formed which supports several nurses doing similar work in the Boston Dispensary, and by this training nurses become thoroughly familiar with their work.

The resident physician, Dr. Helen Reynolds Kellogg, reported that the whole number of patients admitted to the hospital during the year was: Medical, 140; surgical, 126; maternity 110, with a total of 376. By the opening of the Goddard Home seven new beds are added with three additional wards.

The report of the nurses' committee showed that twelve nurses have had diplomas conferred upon them.

The report of the Treasurer, George A. Goddard, to September 30, showed current expenses, $35,279.70; construction account, $1,383.35; current receipts, $31,562.36; subscriptions for elevator, $1,190.50; ten legacies received, $42,116.79; the total receipts were $74,870.25. The board of officers were re-elected

— The Metaphysical College of Massachusetts has died — we beg its pardon, has an appearance of seeming to have ceased to exist. It has, in fact, dissolved, as recorded by resolutions of its corporators, October 29, 1889. From these resolutions we reprint, for the information of our readers, certain extracts.

Whereas, The Massachusetts Metaphysical College, chartered in January, 1881, to give instruction in scientific methods of Mental Healing on a purely practical basis, and to impart a thorough understanding of the power of Divine Mind to restore health, hope and harmony to man (*sic*). The college has fulfilled its high and noble destiny, and sent to all parts of our country

> and into foreign lands, students instructed in Christian Science Mind Healing to meet the demand of the age for something higher than physic or drugging; and
>
> *Whereas*, The material organization in the beginning was like the baptism of Jesus, "Suffer it to be so now," but the teaching was a purely spiritual and scientific impartation of truth, whose Christly spirit has led to higher ways, means and understanding. The President, Rev. Mary B. G. Eddy, at the height of prosperity in the institution, which yields an extensive income, is willing to sacrifice it all for the cause, even the advancement of the world in truth and love, and other institutions for instruction in Christian Science that are working out their periods of organizations will doubtless follow the example of the Alma Mater, after having accomplished the worthy purpose for which they were organized; and
>
> *Whereas*, The hour has come wherein the great need is for more of the spirit instead of the letter, and science and health are better adapted to work this result than personal teaching. . .
>
> *Resolved*, That an institution for instruction in Christian Science, which is the highest, purest and noblest of all teaching, should be of a spiritual formation wholly outside of material regulations, forms or customs. That as we find no platform in Christ's teachings for such material methods of instruction in Christian Science, we must come into the meekness of his methods as we rise in Christian experience; therefore,
>
> That we thank the State for its charter, which is the only one ever granted to a college for teaching the science; that we thank the public for its liberal patronage, and everlasting gratitude is due to the president, Rev. Mary B. G. Eddy, for her great and noble work, which we believe will prove a healing to the nations, and bring all men to a knowledge of the true God, and unite them in a common brotherhood.

We have recently had occasion to notice in these columns, other diploma-granting institutions "wholly outside of material regulations, forms or customs," into the body of which it is to be hoped the Metaphysical College is not to be absorbed.

NEW YORK.

DEATH FROM ETHER. — INSANE ASYLUM, CENTRAL ISLIP. — NEW YORK COUNTY MEDICAL SOCIETY. — MORTALITY IN STATE OF NEW YORK, MONTH OF AUGUST.

— The Cartwright Lectures in New York will be delivered this year by Dr. J. S. Billings, U. S. A., Washington, D. C., on the subject of "Vital and Medical Statistics."

— A case of death from ether inhalation has occurred at Bellevue Hospital. The patient was a male, and the ether was being given by Dr. Theodore of the house staff of the hospital, preliminary to an operation upon the throat. The coroners' jury in the case rendered a verdict that death was caused by asphyxiation due to the administration of ether, complicated with cystic degeneration of the kidneys. Dr. Dunham, however, is of the opinion that death was due to heart failure, rather than asphyxiation. All the usual precautions were taken in the use of the anæsthetic.

— There are now 311 inmates at the institution for the insane at Central Islip, Long Island, belonging to the City of New York. The farm includes a large area of land, and although it has been established but a short time, very satisfactory work has been accomplished in making it a model of its kind. Drs. Evarts and Rowe are in charge of the institution which is conducted upon the cottage plan, and the patients, all of whom are males, are divided into three distinct groups with separate sleeping and dining rooms. At 9 o'clock each morning the patients go in gangs in charge of a keeper, marching to the open fields and woods with their implements flung over their shoulders and all appear to be happy and contented.

— During the months of October and November the New York County Medical Association has had an accession of over fifty to its membership, and the society is altogether in a very flourishing condition.

— The Bulletin of the State Board of Health for the month of August, which has just been issued, shows that the total number of deaths reported was 9,373, which is less by 600 than the mortality of August, 1888, but rather more than the average mortality for August for the last five years, which is 8,668. The average proportion of infant mortality in August for the last five years has been 45.5 per cent. and of deaths from zymotic diseases, 332.27 per 1000; for this month the proportions are respectively 40.7 and 280.75. From diarrhœal diseases there were fewer deaths than usual in August and about 1,200 less than in July. There is an increase in typhoid fever, the deaths from this cause reaching 2.4 per cent. while for the preceding four years the average per cent. of deaths in August has been 1.72.

—At the opening of the session of the Medical Department of the University of the City of New York which occurred on the evening of October 1st, a lecture on "Psychology, a Study for Students of Medicine," was delivered by Henry M. MacCracken, Vice-Chancellor of the University.

CHICAGO.

MEDICAL SCHOOLS. — A NEW MEDICAL LIBRARY.

— For some reason the number of students attending the Chicago schools this year is considerably increased. The average increase in the four regular medical colleges probably amounts to ten or fifteen per cent. over the previous year. We can hardly attribute this to the growing fame of the Chicago schools, as similar reports come from the eastern schools. The fashion of studying medicine among young men and women, like other fashions, seems to be a fluctuating one, without any apparent reason. One year there is an increase of students throughout the country, a second or third year may show the continuance of the increase, then the number remains for a year or two at a standstill, then recedes, and it becomes unfashionable to study medicine. It is the theory of some, supported by some facts, that the number of medical students increases in proportion to the lack of success in mercantile occupation, a depression in the mercantile world increasing the number of medical students, and extreme activity and success in the world of trade lessening the number of those seeking medicine as an occupation.

— One of the most successful medical colleges in Chicago is that for the education of women. It is now twenty years old, has for many years given one of the most thorough courses of instruction known in the West, last year graduated twenty-four women and had a class of ninety, and has just now moved into a new college building that doubles, as far as a building can, its facilities of instruction. This college has announced that after the session of 1890 and 91, four years of study and attendance upon three regular courses of lectures will be required for graduation.

— The Chicago Policlinic celebrates the beginning of its fourth year of existence by moving into a new hospital erected solely for its use at an expense of $40,000 or more. This school has undoubtedly done some excellent work in the past and may be expected to do better work in the future. There is an objection however, to the way this Institution charges its fees, which criticism applies perhaps to all schools for practitioners in this country, certainly to the new post-graduate college recently inaugurated in this city. Instead of encouraging practitioners to take all or many of the courses of instruction given in such a school, there is reason to think it would be much better to allow the reputation, the thoroughness of instruction, the value of the courses in each department to determine whether it would be taken or not. If such an institution offered practitioners to come and take courses under its professors as they might like, or find it profitable, without undertaking to assure them of the value of the courses, so that they could take them or omit them as they might prefer, and if the courses were not up to their expectations, they would have the particular teacher and no one else to complain of, the fame of the school would be conserved, and an increased incentive be made to good post-graduate instruction. As it is, a poor teacher, wanting in energy to gather good material for instruction, is carried by the reputation of the institution and at the expense of the labors of the really good teachers. In a post-graduate school no teacher ought to be tolerated who will not and cannot draw a class by the reputation and value of his own work alone. The course suggested here is the only one in vogue everywhere in Europe, and has produced the best results. It is to be regretted that the Chicago Policlinic does not publish a list of its students.

— The profession is moving to establish a medical library by subscription from among its own members. Nearly $10,000 has already been subscribed and the hope of the movement is to have a permanent library building. This step seemed necessary, since the Public Library has failed to make for the profession a complete medical library, and the trustees of the new Newberry library have refused to attempt to make one. Whether the new movement will succeed, of course, remains to be seen. Everybody in the profession hopes that it will, but a dozen years ago a similar effort was made and a small library got together; the profession generally failed to support it and the movement was abandoned and the library given to the public library. It was impossible then to convince the majority of the medical profession that it was their duty and to their interest to help sustain an undertaking of this kind. May the efforts of the inaugurators of the present movement be more successful.

Miscellany.

THE PRINCIPLES THAT SHOULD UNDERLIE MEDICAL LEGISLATION.

THE Address in Medicine at the last Yale Commencement, of Dr. H. C. Wood, contains the following:

"As plainly to be seen and as fixed as the two great mountain chains which give form and climate to the American continent, are the principles which should underlie medical legislation. These principles are: first, to control the entrance to the profession, so that no man can begin to practice medicine until he is thoroughly acquainted with the fundamental sciences, anatomy, chemistry, pathology, physiology, the natural history of disease, etc., which underlie the art of medicine; second, to allow the man whose education in these sciences has been complete, and who has in consequence received a license to practice medicine, to apply his knowledge to the treatment of disease according to his own best judgment, untrammeled by the law."

A NEW METHOD OF DISINFECTION.

A NEW apparatus designed for the destruction of disease germs by the action of hot air has been built in the Health Department's disinfecting station in New York, from designs by Drs. Herman M. Biggs and T. Mitchell Prudden.

The apparatus consists in part of a brick oven, eight feet long, six feet wide and six feet high, with openings large enough to admit bedding and clothing. Inside the brick walls are coils of steam pipes, which are connected with a tubular boiler. A wire netting protects the clothing to be disinfected from contact with the steam pipes. Openings in the top and bottom of the oven lead into large tubes which are covered with felt to prevent the escape of heat, and the tubes join in a circular box containing a fan that can be made to revolve with great rapidity. Air in the oven can be raised to a temperature of 212 degrees, and by means of the tubes and fan it can be kept in rapid motion without loss of heat.

After the oven is filled with infected clothing a constant blast of hot air, sufficient to kill the worst germs, can be sent through it for any desired length of time without destroying the lightest fabric. It is expected that the rapid circulation of the air will cause the heat to penetrate evenly through the entire mass of fabrics, and that only a brief exposure to the dry heat will be necessary to complete the work of germ-killing. When the tests are made "telltale" thermometers will be wrapped up in bundles of cloth in different parts of the oven, and it will be easy to judge by a comparison of records how nearly perfect the apparatus is. The cost of the apparatus was about $1,500.

Correspondence.

EUPHRASIA OFFICINALIS.

NEW YORK, November 9, 1889.

MR. EDITOR, — In your issue of November 7th, I find a very interesting article by Dr. G. M. Garland, on Euphrasia Officinalis, and its "great potency in the treatment of head-colds." Dr. Garland writes that "after searching through a large number of modern text-books on therapeutics," he "can record only three (Phillips, Patten, United States Dispensatory), which give even a meagre notice of this drug."

One reason why this is true, is because the drug is not officinal with us, but is officinal with the homœopaths. In my "Treatise on Nasal Catarrh,"[1] under the head of Abortive Treatment of Acute Coryza, I refer to the fact (p. 56), that, "According to Phillips, ('Materia Medica,' New York, 1879, p. 156), a few drops of the tincture of euphrasia officinalis (eye-bright), taken at the beginning of an attack of acute coryza, and repeated every two or three hours, will often abort it. This he knows 'by personal experience.' The tincture should be taken in a wine-glass of water."

I have, therefore, been familiar with the use of euphrasia for a number of years as a drug, which has been stated to abort an attack of acute coryza. Unless I am greatly mistaken, and I have tried most drugs that have been recommended for this purpose, none can always be relied upon. The one, however, which has in my experience proved the most trustworthy, is carbonate of ammonia in frequently repeated and tolerably large doses.

The regular physicians have long since given up euphrasia in the treatment of disease as being *inert*, and I am credibly informed by one of our most reliable pharmacists here, that the homœopaths rarely use it, doubtless for a similar reason. Very truly yours,

Beverley Robinson, M.D.

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[1] Second edition, New York, 1885.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 2, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	618	185	14.56	15.68	4.00	2.56	4.64
Philadelphia	1,040,245	399	138	14.75	15.00	1.50	4.00	5.25
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	158	55	15.12	11.34	3.78	1.89	5.04
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	172	58	15.66	20.30	4.06	1.74	9.28
New Orleans	250,000	99	30	18.18	21.21	2.02	1.01	7.07
Cincinnati	225,000	115	—	17.40	17.40	1.74	—	15.66
Washington	225,000	73	19	8.22	13.70	1.37	1.37	2.74
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	24	12	20.80	12.48	8.32	8.32	4.16
Charleston	60,145	32	13	18.78	3.13	15.65	—	—
Portland	40,000	15	2	13.33	13.33	13.33	—	—
Worcester	78,292	15	8	26.66	13.33	6.66	6.66	—
Lowell	71,518	27	6	18.50	18.50	3.70	11.10	3.70
Cambridge	65,552	28	7	21.42	10.71	—	3.57	17.28
Fall River	62,647	29	13	10.35	10.35	—	6.90	3.45
Lynn	53,334	13	—	7.69	30.76	7.69	—	—
Springfield	40,731	18	3	11.11	33.33	—	—	5.55
Lawrence	40,619	28	7	35.71	17.85	—	10.71	25.00
New Bedford	37,253	19	5	15.78	15.78	5.26	5.26	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	17	0	5.88	—	—	—	5.88
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	5	1	—	—	—	—	—
Haverhill	26,058	7	2	28.46	14.28	—	14.28	14.28
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	8	3	25.00	12.50	12.50	12.50	—
Newton	21,553	—	—	—	—	—	—	—
Malden	19,774	7	—	14.28	42.84	—	—	—
Fitchburg	17,534	5	—	—	40.00	—	—	—
Waltham	17,332	4	1	—	—	—	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	4	1	5.00	—	—	—	5.00
Quincy	13,728	7	3	14.28	—	14.28	—	—

Deaths reported 1,841: under five years of age 572; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 300, consumption 307, acute lung diseases 227, diphtheria and croup 120, diarrhœal diseases 62, typhoid fever 57, malarial fevers 22, scarlet fever 18, cerebro-spinal meningitis 9, whooping cough 9, erysipelas 2, measles 1.

From malarial fevers, New York and New Orleans 7 each, Philadelphia 4, Baltimore 3, Charleston 1. From scarlet fever, Philadelphia 9, New York 4, Baltimore 3, Boston and Cambridge 1 each. From cerebro-spinal meningitis, New York, Washington and Worcester 2 each, Philadelphia, Springfield, and Malden 1 each. From whooping-cough, New York 6, Baltimore, New Orleans and New Bedford 1 each. From erysipelas, New York 2. From measles, Philadelphia 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending October 5th, the death-rate was 17.6: deaths reported 3,219: infants under one year of age 912; acute diseases of the respiratory organs (London)—diarrhœal diseases 147, diphtheria 63, fever 62, scarlet fever 52. whooping-cough 45, measles 34.

The death-rates ranged from 10.7 in Leicester to 25.8 in Manchester: Birmingham 13.2, Bradford 18.2, Hull 20.8, Leeds 18.1, Liverpool 19.2, London 16.6, Newcastle-on-Tyne 25.3, Nottingham 14.9, Sheffield 19.5, Sunderland 25.7. Wolverhampton 24.0.

In Edinburgh 17.8, Glasgow 20.5, Dublin 26.2.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending October 19th, the death-rate was 18.7. Deaths reported 3,433: infants under one year of age numbered 837; acute diseases of the respiratory organs (London) 300, scarlet fever 98, diarrhœa 83, measles 64, whooping-cough 59, diphtheria 57, fever 53,

The death-rates ranged from 13.2 in Derby to 31.4 in Plymouth: Birmingham 17.1, Hull 25.1, Leeds 24.2, Leicester 13.5, Liverpool 21.5, London 16.9, Manchester 22.0, Nottingham 14.5, Sheffield 21.4, Sunderland 23.7.

In Edinburgh 19.2, Glasgow 23.2, Dublin 26.5.

The meteorological record for the week ending Nov. 2, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
Saturday, Nov. 2, 1889.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.		8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...27	29.95	52.0	54.0	49.0	77		100	88.0	S.E.		N.E.	6		18	O.		R.	6.40	.50
Monday, ..28	29.74	56.0	60.0	52.0	88		82	85.0	S.		S.	6		3	O.		O.	5.00	.40
Tuesday,..29	29.99	44.0	47.0	40.0	93		88	90.0	N.		N.	12		12	R.		O.	5.10	.04
Wednes. ..30	30.16	42.0	46.0	39.0	76		71	74.0	N.		N.	10		5	O.		O.	.0	.0
Thursday,.31	30.19	44.0	47.0	42.0	81		72	76.0	W.		S.E.	6		2	O.		O.	.0	.0
Friday,.... 1	30.22	48.0	52.0	44.0	100		87	94.0	N.E.		S.W.	4		6	F.		O.	2.30	.15
Saturday,. 2	30.19	54.0	60.0	47.0	90		79	84.0	0.		S.	0		13	F.		O.	.25	T.
Mean for Week.	30.06		51.0	45.0				84.0										19.45	1.09

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 2, 1889, TO NOVEMBER 8, 1889.

Leave of absence for one month is granted Captain R. W. **Johnson**, assistant surgeon, to take effect on or about November 10th, proximo. Par. 4, S. O. 110, Department of Arizona, Los Angeles, Cal., October 29, 1889.

By direction of the Secretary of War, leave of absence for two months on account of sickness, with permission to leave the Division of the Missouri, is granted Captain **Junius F. Powell**, assistant surgeon. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1889.

First Lieutenant F. J. **Ives**, assistant surgeon U. S. Army, is granted two months leave of absence. Par. 3, S. O. 256, A. G. O., November 2, 1889.

By direction of the Secretary of War, Major **Robert M. O'Reilly**, surgeon, will at the expiration of his present leave of absence, proceed to Fort Logan, Colorado, and report in person to the commanding officer of that post for duty. Par. 6, S. O. 256, A. G. O., November 2, 1889.

Captain **James C. Merrill**, assistant surgeon, is relieved from duty at Frankford Arsenal, Pa., and ordered to duty at Fort Reno, Indian Ty. Par. 6, S. O. 256, A. G. O., November 2, 1889.

Captain **Charles S. Black**, assistant surgeon, is relieved from duty at Fort Sidney, Nebraska, to take effect upon the expiration of his present leave of absence, and will report in person to the commanding officer Fort Du Chesne, Utah. Par. 6, S. O. 256, A. G. O., Washington, November 2, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 9, 1889.

Surgeon B. F. **Mackie**, and assistant surgeon, **George Mc C. Pickrell**, detached from the U. S. S. "Ossipee," and placed on waiting orders.

SOCIETY NOTICES.

Gynecological Society of Boston. — The 206th Regular Meeting of the Society will be held at No. 19 Boylston Place, on Thursday, November 14, 1889, at 4 o'clock, P. M. Business: Balloting for Robert Brooks Popham, L.R.C.P. and S., etc. (Corresponding Membership). The meeting will be devoted to contributions in memory of the late Dr. L. F. Warner, among which will be "A Brief Memorial Tribute to our Deceased Corporate Fellow, L. F. Warner, M.D.," by Henry M Field, M.D.

S. N. **Nelson**, M.D., *Secretary*, 18 Beach St., Revere, Mass.
W. **Symington Brown**, M.D., *President*.

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene, will meet at 19 Boylston Place, on Wednesday, November 20th, at 7.45 o'clock.

Dr. H. J. Barnes, will read a paper on the question, "Can the Quality of the Water Supplied to the Citizens of Boston be Improved?"

By invitation, Mr. Horace S. Woodbury of the Hygeia Sparkling Distilled Water Company, of New York, will exhibit and explain the Hygeia Distilled Water, now extensively used for pharmaceutical purposes, in the case of the sick, and in delicate surgical operations.

Mr. H H. Thomas, of the New England Phonograph Company, will exhibit the Improved Edison Phonograph and Graphophone, and demonstrate their usefulness as the means of clinical observation and permanent record in the treatment of disease.

Refreshments after the meeting.

Albert N. Blodgett, *Secretary*, 138 Boylston St.
A. L. **Mason**, M.D., *Chairman*.

APPOINTMENT.

Dr. Wm. B. Hills, has been appointed Associate Professor of Chemistry in the Harvard Medical School.

OBITUARY. NATHAN S. BABBITT, M.D.

Dr. Nathan S. Babbitt, of North Adams, Mass., died November 5th. Dr. Babbitt had a severe illness last summer, and though he rallied from it, the effects remained and he gradually declined until death ended his sufferings. He was born in Hancock, August 30, 1812, and was a son of Dr. Snell Babbitt. While he was very young his parents removed to Adams, and in the Adams Academy he received the rudiments of his education. After graduating from the academy he studied medicine for a year with Dr. H. M. Wells, of Windsor, and after some further study with his father, he entered the Berkshire Medical Academy, at Pittsfield, from which he was graduated in 1833. His diploma was given him by Williams College, and the same institution soon after conferred upon him the degree of A.M. He began practicing in Adams, where he remained until 1846, when he removed to North Adams, where he has since resided. In 1882 he was elected a representative from his district, and served in the Legislature one term. He was a member of the State, the Berkshire County, and the North Berkshire Medical Associations, and was particularly interested in the County Society. In his profession he was a skilful and successful practitioner and had a large practice.

BOOKS AND PAMPHLETS RECEIVED.

Cases of Ocular Paralysis. By Alvin A. Hubbell, M.D. Reprint. 1889.

The Annual Statistics of Manufactures, 1886, 1887. Public Document, Boston, 1889

Urinary Calculus and Lithotomy. By Thomas W. Kay, M.D., Scranton, Pa. Reprint. 1889.

Studies in Intestinal Surgery. By Wm. B. Van Lennep, A. M., M.D , Philadelphia, Pa. Reprint. 1889.

The St. Louis Hygienic College of Physicians and Surgeons. Announcement of the Third Collegiate Year. 1889, 1890.

Transactions of the New Hampshire Medical Society at the Ninety-eighth Anniversary, held at Concord, June 17 and 18, 1889.

Diseases of the Eye: A Practical Treatise for Students of Ophthalmology. By George E. Berry, M.B., F.R C.S., Edinburgh, etc. With colored illustrations from original drawings. Philadelphia: Lea Brothers & Co. 1889.

Second Series, complete in twelve parts. Photographic Illustrations of Skin Diseases: An atlas and text-book combined. By George Henry Fox, A.M , M.D., Clinical Professor of diseases of the skin, College of Physicians and Surgeons, New York, etc. Hand-colored plates; nearly one hundred cases from life. Parts 9 and 10. New York: E. B. Treat. 1889.

Original Articles.

VARIOLA AND VARICELLA.[1]

BY J. H. McCOLLOM. M.D., BOSTON.

The importance of an early and positive differential diagnosis in these diseases, in order that in cases of variola proper precautions may be taken, and that fear and excitement may be quieted in cases of varicella, is my apology for bringing this somewhat trite subject before the Society. The diagnosis of a severe attack of variola in an unvaccinated person presents difficulties only in the first twenty-four hours of the eruption. A mild case of varicella in a child with a thin and delicate skin is very easily recognized. It is stated by some of the authorities that varicella is an infantile disease, and that it is neither preceded by nor attended with any marked constitutional disturbance. The truth of this statement does not bear the test of experience as the report of the following cases will prove. An attack of modified small-pox is a comparatively trivial affair, so far as the physical suffering of the individual who has the disease is concerned, but it may be a serious matter to all unvaccinated persons with whom he may come in contact. Because of the mild character of the disease, the difficulty of a correct diagnosis is very much increased. The term varioloid, too, is calculated to do much harm, not only among the laity, but also among physicians. This word should be dropped from the nomenclature, and the term "modified small-pox" substituted. This disease is not like variola, as the word varioloid signifies, but it *is* variola of a mild type and modified by vaccination. It is surprising how prevalent the idea is that while small-pox is contagious, varioloid, as it is called, is not particularly so.

In common with all acute diseases a case of modified or unmodified small-pox always commences with a greater or less amount of constitutional disturbance, but frequently in the modified form this is so slight as not to attract the attention of the patient. The same can be said of varicella, although, as a rule, the prodromic stage is shorter. The headache, pain in the back, chills and fever are nearly the same in each of these diseases — differing only in severity and duration. In young children convulsions may be present, although this is not common in varicella, but is quite common in variola. As there is nothing characteristic in the prodromata of these diseases, it is a self-evident fact that a diagnosis cannot be made before the appearance of the eruption. It is claimed by some observers that the pain in the back in variola is so peculiar in its nature and situation that the disease can be detected by this symptom alone. This, however, is purely fanciful and is of no practical use. In regard to the situation of the eruption there is no marked difference between the diseases. The fauces, the genitals, the palmar surface of the hands and the plantar surface of the feet are attacked alike in each disease, although the throat, the palms and the soles are not invaded so frequently or to such an extent in varicella as in variola. As there is nothing characteristic in the constitutional disturbance, as there is no marked difference in the parts of the body invaded, the only sure guide to a correct diagnosis is the appearance of the eruption and its sensation to the touch. In varicella the papular stage is very short, and it is very rarely the case that this stage is seen; but that there is a distinctly papular stage there can be no doubt. In a person with a thick, dry skin this papular stage frequently gives rise to an error in diagnosis. The vesicles in varicella are not full and round as in variola, but frequently have a shrivelled appearance, rupture easily, and, when ruptured, empty themselves completely. The base of the vesicle, after rupture, frequently transudes a very little bloody serum. There is no induration, as a rule, about a typical vesicle of varicella, but in a thick skinned individual a certain amount of thickening, resembling induration, may be found. Great variation in the size of the vesicle is also a marked characteristic of varicella in distinction from variola. When the eruption begins to dry, this process commences in the centre of the vesicle and causes an appearance which somewhat resembles umbilication, but which is entirely different from the umbilication of the small-pox vesicle. The appearance and course of the eruption in the palms and on the soles is very different in the two diseases. In varicella the vesicles disappear by the process of absorption or by rupture, while in variola, hard, firm disks are formed, which are very gradually removed by disintegration of the integument covering them.

In variola the papular stage is much more marked and of much longer duration than in varicella, lasting from one to three days. At the end of this time a small vesicle, with a minute central depression, appears at the apex of the papule. This central depression or umbilication is pathognomonic of the disease and is never absent. The vesicles now increase in size, are quite firm, filled with a milky fluid, are extremely difficult to rupture, when broken do not empty themselves completely, and are surrounded by a certain amount of induration. At the end of the fourth or fifth day the vesicles are globular in shape, and have lost the umbilicated appearance, because the pressure of the fluid in them has ruptured the tissue which bound down the centre. The next stage is the pustular, which is ended by rupture of the pustule and the formation of a yellow crust, surrounded by a wall of induration, entirely different in appearance from the black crusts seen in varicella. In small-pox, modified by vaccination, a portion of the eruption frequently aborts, that is to say, it does not pass beyond the papular stage, but disappears by absorption.

No one who has seen much of these diseases can, for a moment, doubt that they are caused by two entirely different poisons. Varicella never gives rise to variola; neither does small-pox ever cause chicken-pox. A few cases of varicella, in which the constitutional disturbance was marked and the eruption very abundant, will now be reported.

Case I. A. B., a boy twelve years of age, with a history of an illness of two days, headache, pain in the back, nausea and vomiting. When he was seen he was found in bed. Tongue very much coated, pulse 100. The body, the face, the mucous membrane and the palms of the hands were covered with an eruption of vesicles and pustules. On the face the eruption had passed through the vesicular stage and was disappearing. On the body the vesicles ruptured easily, or in other words, the walls of the vesicles were quite thin. No induration about the eruption could be felt.

Case II. J. K., twenty-four years of age. Three days previous complained of headache, pain in the back and nausea. The eruption was very copious. The vesicles were quite large, and were easily broken. A few pustules could be seen, which were surrounded by a slight amount of induration.

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[1] Read before the Boston Society for Medical Observation, June 3, 1889.

Case III. E. M., twenty-three years of age. This patient had marked constitutional disturbance. The tongue was heavily coated, pulse 100. He was completely covered with a vesicular eruption, which in some places had commenced to dry. The eruption on the face was so copious that there was some œdema of the eyelids. The tongue, as well as the fauces, was completely studded with the eruption. On the face the vesicles did not rupture very easily; on the back and on the thighs the reverse was true. No induration could be felt. There was marked difference in the size of the vesicles. A few days after being seen, it was incidentally learned that for one or two nights the patient was quite delirious.

Case IV. E. E., this case very much resembles the previous one, except that there was no delirium. The pain in the back was a much more prominent symptom.

Case V. M. M., age fourteen years. The only point of interest is the great amount of constitutional disturbance manifested by headache, pain in the back and nausea.

Case VI. A. N. This patient was an infant one year old. The commencement of the attack was ushered in by a severe and protracted convulsion.

Case VII. W. M. O., twenty-two years of age. There was marked constitutional disturbance. There could be no doubt about the nature of the disease from the appearance of the eruption.

Case VIII. A. W., thirty-four years of age. This case is of interest on account of the great amount of constitutional disturbance which continued for two days previous to the appearance of the eruption.

Case IX. E. B., a boy four years old, was taken suddenly with headache, nausea and vomiting. At the end of twelve hours a rash appeared on the body, face and neck resembling, as described by the attendant, the eruption of scarlet fever. The temperature was high, the tongue red and the constitutional disturbance marked. Twenty-four hours after the appearance of the rash, a vesicular eruption appeared. This eruption was very copious, even in some places confluent. The fauces were also invaded to a very considerable extent. When the patient was seen, which was about thirty-six hours after the appearance of the vesicular eruption, he was so sore that he could not turn in bed; the tongue was heavily coated; the pulse and respiration very much increased in frequency. In some places there seemed to be a slight amount of induration about the vesicles, which, however, ruptured very easily. In quite a number of places between the vesicles a fading red rash could be seen, but this was not distinct enough to enable any one to form an opinion regarding its nature. It was perfectly evident that this was a severe case of varicella complicated, possibly, with scarlet fever. At the end of three or four weeks, however, as the child went through the regular process of desquamation of scarlet fever, there could be no doubt regarding the diseases in this case.

The preceding nine cases have been reported somewhat at length in order to show that the constitutional disturbance may be more marked, that the eruption may be more abundant, and that the general severity of the disease may be greater in varicella than in modified small-pox.

The following nine cases are cases of modified small-pox in which the constitutional disturbance was very slight, the amount of eruption small, and the diagnosis extremely difficult:

Case I. A. B. This patient was a girl eighteen years old; had been vaccinated in infancy. There was no small-pox in Boston at the time she was taken ill. No history of constitutional disturbance. When the patient was seen she stated that two days previous to the visit she noticed a slight eruption on her face. There were in all about twenty-five papulo-vesicular spots of eruption very generally distributed over the entire surface of the body. The patient was sent to the small-pox hospital, much against her wishes. Every person in the immediate vicinity was vaccinated. As this case occurred in a crowded tenement house, it is easy to see what a nidus this case would have formed if it had not been recognized.

Case II. J. G. This patient was a man twenty-eight years of age; vaccinated in infancy. He stated that four days previous to the time of visit he noticed an eruption on his face and a few spots on his hands. He positively denied having had any headache, pain in the back, nausea or vomiting. There was no indication of any constitutional disturbance. The patient was somewhat surprised when he was told that he had small-pox.

Case III. J. K. Vaccinated in infancy; thirty years of age. Three days before this man was seen, he stated that he noticed a slight eruption on his face and body, but did not give himself any uneasiness about it. He also said that be was not ill; had had no nausea, no vomiting, no pain in the back. The eruption was perfectly characteristic.

Case IV. E. C., forty years of age; vaccinated in infancy. No history of any of the prodromata. The eruption was not very copious. There was very little constitutional disturbance at the time of visit.

Case V. T. C., fifty-five years of age; vaccinated in infancy. This patient was a sailor. When he was seen he had been in Boston about six days. He stated that he noticed the eruption about five days previous to the visit. There was no constitutional disturbance when this man was seen, and no history of any. From this one case, five cases of variola could be directly traced.

Case VI. W. F. F., twenty-four years of age; vaccinated in infancy. This patient had a slight eruption on his face, for which he consulted a physician, not because he was ill nor because there was any discomfort from it, but because it was unsightly. There had been no headache, no pain in the back, no nausea. When seen, the man was apparently well; the eruption was characteristic.

Case VII. T. B. This patient was a young woman who had been in this country only a short time; vaccinated in infancy. When she was seen there was absolutely no constitutional disturbance, and she denied having had any of the usual symptoms of the disease. Examination, however, revealed the existence of the firm disks in the palms and on the soles, to which allusion has been made. The reason why this patient was examined so carefully was the existence of a severe case of variola in the family of which the girl was a member. There can be no doubt that this patient contracted the disease in England, passed quarantine before the eruption appeared, and communicated a severe form of the disease to at least two individuals.

As the woman had not been ill no physician had seen her.

Case VIII. F. D. This patient was a colored man thirty-five years of age; vaccinated in infancy. No constitutional disturbance. He communicated a severe form of the disease to his wife, and also to three or four other persons.

Case IX. J. T., twenty-four years of age; vaccinated in infancy. This woman had a few of the firm, hard disks in the palms, and a few slight recent scars could be seen on the face and body. The most careful and persistent questioning, not only of the patient herself, but also of the other members of the family, failed to elicit any history of constitutional disturbance. The eruption had been so slight that it had not attracted the attention of any one. As in one of the preceding cases this mild and unrecognized attack of modified variola was the origin of a severe case of unmodified small-pox in a child with whom the patient was brought in immediate contact.

Many more cases, not only of varicella with marked constitutional disturbance, but also of modified small-pox, without illness, sufficient to attract the patient's attention, could be reported. But enough has been said to show:

(1) That varicella is not necessarily an infantile disease.

(2) That it is frequently attended with marked constitutional disturbance.

(3) That small-pox in the vaccinated is not always accompanied with marked disturbance of the system.

(4) That the history of the case and the general symptoms are of no assistance in forming a diagnosis, but that the appearance of the eruption and its sensation to the touch are the only sure guides.

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THE ABSCESSES OF HIP DISEASE, THEIR PREVENTION AND TREATMENT.[1]

BY ROBERT W. LOVETT, M.D., BOSTON, AND
JOEL E. GOLDTHWAIT,
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The treatment of the abscesses of hip disease is a question which has been widely discussed, and one upon which diametrically opposed views have been held. No figures bearing upon the relative value of the various treatments have yet been brought forward, and the debate so far has been largely confined to the assertion of personal opinion. As a general rule, surgeons have advocated the early incision of these pus collections wherever and whenever they form. Many of the leading orthopedic surgeons in America, on the other hand, advocate very strongly letting the abscesses break of their own accord unless their character is so acute as to render operative interference necessary. Their reasons for this are: first, the possibility that the abscesses may disappear spontaneously; secondly, that the operation has no effect upon the original disease to which the abscess is only incidental; and third, that there is a risk of septic infection due to operation. At the close of a discussion at the Orthopedic Section of the New York Academy of Medicine, held in the spring of 1889, the Chairman, Dr. Gibney, remarked that however interesting the discussion had been, it had led to no positive results, and that a previous discussion in the same section had been equally fruitless; and he called the attention of the members, to the fact that the question could advance no further until some figures bearing upon the subject were brought forward.

In the hope of bringing to light some definite facts in the matter, the records of the Children's Hospital have been analyzed for the five years ending in 1888. Incidental to this investigation, such important facts were developed with regard to the conditions of the occurrence of hip abscesses that the division of treatment which relates to their prevention has assumed a much more prominent place in this paper than was originally intended.

We had for analysis several hundred cases of hip disease, which were under treatment in the surgical out-patient department of the hospital. In the five years ending 1888, 360 new cases came for treatment to the out-patient department. Of cases continued from the year 1883, there were certainly 50, giving at least 400 cases which were under treatment in these five years. Taking from this number the 80 new cases which came in 1888, in whom abscesses perhaps had not had time to develop; we had 320 cases under treatment at the out-patient department from 1883 to 1887 inclusive.

The operative treatment of hip abscesses, has been pursued at the hospital, in these years, to the exclusion of every other method, so that every abscess occurring in these cases has been admitted to the hospital and operated upon. There have not been more than a dozen exceptions to this rule in these five years: so that the figures, whatever they may be, are thoroughly representative of the operative treatment. Aspiration of the contents of the abscesses has at times been tried, sometimes followed by the injection of iodoform and similar substances. In every case of this sort it has been ultimately necessary to open the abscess by a free incision.

In the five years from 1884 to 1888, inclusive, there were only 70 abscesses opened in the hospital; and as all abscesses were opened as soon as they become superficial enough to give evidence of fluctuation, this number represents approximately the total number of abscesses occurring in the 320 cases treated in the out-patient department. The calculation cannot, of course, be more than an approximate one. A certain number of the 320 cases disappeared from view without being under treatment for any length of time; but these were few, and, as a rule, not the worst class of cases for the reason that there is no other large orthopedic clinic in Boston, and the cases which progress badly are almost sure to come to the Children's Hospital. The cases which are lost sight of are generally those in which the symptoms quickly subside, or in the long chronic cases where the symptoms never reach any very great severity. It is not, as it is in New York, for instance, where the cases shift from one clinic to another. In Boston they must come to the Children's Hospital, or go untreated, so that the error arising from this source is necessarily a small one.

So far as the writers have been able to judge, the figures represent *very fairly* the total number of abscesses occurring in the 320 cases of hip disease under treatment in the five years. Apparently, it is from a similar class of cases that the statistics bearing on the frequency of hip abscesses collected by Gibney, Marsh, and the Clinical Society have been taken: so that it is perfectly proper to compare the percentage of abscess occurring in this series of cases with the statistics of those writers. In 320 cases, then, we had in the neighborhood of 75 abscesses, making all allowances for error, which is a percentage of 23.

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[1] Read before the American Orthopedic Association at Boston, September 17, 1889.

Comparing, then, this percentage of 23 with the other figures relating to the frequency of hip abscesses, the writers were very much surprised to find that it was very much smaller than any previously reported group of cases. In the series of cases reported by the Clinical Society's Committee, in 1880, of 401 cases, 69% developed abscesses in the course of a few years. Mr. Marsh, analyzing the more recent cases from the Alexandria Hospital (those from 1880), calculated that 50% of all the cases developed abscesses before admission, or during the course of the disease. The diminished percentage, which was so much smaller than the Clinical Society's series, he attributed to the improved methods of treatment; and, he added, "My own estimate, from what I have seen in the hospital and elsewhere, is that the formation of an abscess may be averted by early treatment in at least 80% of the total number of cases."

Of the 80 cases of cured hip disease reported by Gibney in 1878, where the expectant treatment had been pursued, 48 cases, or 60%, had abscesses; and in the discussion following the reading of that paper, Dr. Yale stated, as the result of his own experience and that of others, that about 50% of all cases of hip disease develop abscesses.

The out-patient cases in the Children's Hospital series have been under treatment continuously, reporting once a month at the hospital. The method of treatment has been almost entirely by the use of the long-traction splint, with crutches, and a high shoe on the well foot.

In all cases where deformity occurs in the leg, as soon as flexion or adduction or abduction reaches any noticeable degree, the patient is at once admitted to the hospital, and the deformity reduced by means of traction in the line of malposition, while the patient lies in bed, secured to a bed frame, with the leg elevated or abducted or adducted, as the case may be.[2]

In the same way children, whose joints become acutely sensitive, are not allowed to go about on crutches, but are at once sent to bed until the joint quiets down. Formerly the cases were allowed to go about till the deformity became so great that the splint could not be comfortably worn, and the proportion of abscesses at that time was larger than it is now.

The time required in bed for this reduction of the deformity is rarely more than a few weeks, and only a few days in the milder cases. Correction of the position of the limbs under ether is only undertaken in very exceptional cases. It is to this careful correction of deformity, as soon as it occurs, and to the immediate attention paid to any acutely sensitive condition of the joint, that the writers would attribute this exceptionally small percentage of abscesses.

Leaving for a while that side of the question which relates to the prevention of hip abscess, and coming to the analysis of the 70 cases operated on at the hospital between the years 1884 and 1888 inclusive, only 55 of these proved suitable for analysis. The others were rejected because the records were imperfect, or because the information about the patients was scanty; and all of these rejected cases were those of the earlier years (1883 and 1884). The cases for analysis were not selected upon any basis, except that of being well recorded, and no cases in the last three years were omitted. In addition to these 55 cases we have added 8 cases of hip abscess from the House of the Good Samaritan, which were not picked, and which were similar to the Children's Hospital cases in every way.

The time of the occurrence of these abscesses in the history of the disease proved to be a matter of some practical interest. In 59% of all the cases, it occurred within one year of the beginning of the disease. Of the remainder, it occurred in 13 cases within two years; in 9 cases, in three to five years; and once each in seven and nine years. In 26 of the cases (41%) the abscesses appeared before the patients came under treatment, while four more appeared within two months after the beginning of treatment: so that 44% of the total number of abscesses occurred either before any treatment was begun, or within the next two months. In 37 cases the abscess came on while the patients were under treatment, and it is worth while to analyze these cases very carefully. The abscesses came on under the use of a Taylor traction splint 22 times; with the use of a Thomas splint, four times; with the use of a posterior wire fixation splint (the Cabot frame), six times; and under miscellaneous treatment might be grouped four cases, — one bed extension, one Sayre short splint, one plaster bandage, one high shoe and crutches. Analyzing the 22 cases, where it came on in the course of treatment by a long traction splint, in nine cases it was stated in the records that the treatment was markedly inefficient on account of the drunkenness or carelessness of the parents. In the remaining 13 cases, where the abscesses came on under treatment by the Taylor splint, the care of the patient at home was good, and the treatment efficient, so far as the out-patient surgeons could judge, except in three instances, where the splints were discarded at home, and the abscesses followed; so that really in only 10 of these 22 cases did the abscesses come on under what could be considered efficient treatment by this method. The groups of cases where abscesses occurred with the use of a Thomas or Cabot splint are too small for analysis. In the great majority of all cases, where the abscesses occurred under treatment, it came on in from six to twelve months after the application of the splint.

It has already been stated that the operative treatment has been pursued in all cases, and the question of the risk of the operation is, of course, one of very great interest. The technique of the operation has been perfectly simple. The abscess has been freely incised; drained by counter-openings, if necessary; and the cavity has been curetted, and thoroughly irrigated with a strong corrosive solution. The wound has either been loosely packed with iodoform gauze, or drained by a tube which has remained in only a short time. Antiseptic dressings have been applied for weeks after operation, and only when the sinuses have been reduced to small openings have open dressings been applied.

In the 63 cases there was no case of anything approaching septicæmia. In feeble children the temperature rose slightly on the day after operation, from reaction; but it always fell again, and was never of a character to give anxiety, with the exception of one patient who died of tubercular meningitis within ten days after operation. This is the only case in the 63 where death could possibly be attributed to the operative procedure, and in no other case did death occur within three months; and generally in the fatal cases it was only after a lapse of one or two years. As a rule, the operation was followed by a decided improvement in the general condition of the patient and by an improvement in the joint symptoms.

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[2] The child is fixed to a bed frame so that motion is impossible. The child cannot sit up or turn over, and when lifted, is lifted on the frame, as on a *gouttiere de Bonnet*, or wire cuirass. Fixation is practically as complete as in the *gouttiere de Bonnet* (wire cuirass), with the addition that traction in the line of the deformity is possible.

Of these 63 cases, 16 are dead and 4 are dying, while in 7 cases the end result is not known. This is a mortality-rate of approximately 40% which is exceedingly high in comparison with the death-rate by suppurative hip disease in general. But a comparison of these cases with such groups as the Alexandria Hospital series is unfair, because the percentage of abscesses to the whole number of cases of hip disease is so widely different in the two groups. Here the abscesses were only 23% of all the cases; in the earlier Alexandria group they formed 70% of all the cases.

The treatment pursued in this series has eliminated abscess in a large number of cases, and confined its appearance, as a rule, to a small percentage of cases where the disease is of such intrinsic severity that suppuration is inevitable; and necessarily the percentage of death in such cases must be a high one. It would, therefore, be misleading to compare the figures of the death-rate with those of Gibney, Marsh, Billroth or Cazin.

Of the 16 fatal cases, 4 died of tubercular meningitis, 2 of phthisis, 3 of amyloid degeneration of the viscera, 3 of exhaustion and prolonged suppuration, and one each from excision and enteritis many months after operation. Of the 4 cases that are classed as dying, 3 have advanced amyloid degeneration of the viscera, and one is hopelessly exhausted, with but little prospect of relief even by amputation. In 7 cases the end result is not known. This gives a mortality of nearly 40%, in cases which have only been under observation but a few years, a majority of them less than three.

It may then be said of the operation for abscesses in hip disease, that it is not attended with the risk of septicæmia which is sometimes attributed to it, and that it does not prevent amyloid degeneration from taking place.

The present condition of the diseased limb is not known in 7 of the patients, who may be alive or dead. In the 16 cases which died, with one exception, the sinuses were all open at the time of death. In the 43 cases where the present condition of the patient is accurately known the abscess wound is closed in 20, and one or more sinuses are still open in 23. Of the cases where the sinuses are still open, in 5 a year has passed since the operation, 10 are open at the end of two years, 7 at the end of three years, and one at the end of four years. In the cases where the sinus is closed, the time of closure is, of course, of much interest. In the 20 cases, 10 closed within a year after operation and in 6 between one and two years. In three of the remaining it closed at the end of two years, and in one case at the end of four years. In only one case did it close within six months of operation, and in this case within a month. Secondary abscesses, very superficial, occurring in the cicatrix of the operation, have occurred in one or two cases. It must, therefore, not be expected that the sinuses will close immediately after operation; and in most cases where the closure is to occur, it takes place within a year or eighteen months of operation.

It is very difficult to sum up a paper which is at best only an imperfect summary of an important series of cases. From the figures that have been presented it seems fair to conclude that the preventive treatment of hip abscesses is an exceedingly important matter, and that by the confinement of the patient to bed when symptoms of deformity or joint tenderness arise under efficient treatment the abscesses may be averted in a large proportion of all the cases. But when this smaller proportion of abscesses has occurred in them, the mortality per cent. is exceedingly high, and the prognostic outlook very much more serious than in suppurating hip disease in general. Operation does not seem to be attended with the risk of septicæmia, nor does it prevent the occurrence of tubercular meningitis or amyloid degeneration; and finally it may be stated that thorough operation is followed, in a fair proportion of all cases, by the speedy closure of the abscesses, a closure which remains permanent.

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SPASTIC TORTICOLLIS APPARENTLY DUE TO FAULTY POSITION OF THE EYES, AND CURED BY TENOTOMY.[1]

BY O. F. WADSWORTH, M.D.

Carl F., a bright, intelligent boy, nearly fourteen years old, of good size and with well-shaped head, was brought to me June 5, 1887, because of a deformity which was said to have commenced in infancy and to have been becoming more pronounced up to that time. On the supposition that he had wry-neck and lateral spinal curvature, he had been first taken to Dr. E. H. Bradford. Dr. Bradford found no permanent contraction of the muscles of the neck, and that, while there was a well-marked convexity of the spine toward the left, the vertebræ were apparently normal. He also observed that the eyes were not directed properly, and advised that the boy be taken to me.

The brief history of the case, obtained mainly from the boy's father, was as follows: In early infancy it was noticed that the boy's eyes were "wild" and that the left eye rolled up; at least as early as when he began to walk the head was held tipped to the right, and as he grew older the right shoulder dropped. Of late years the eyes had not been so "wild," but appeared more so when he was excited. He had never had double vision. The tipping of the head and dropping of the shoulders had gradually grown worse, and of late the remarks of his schoolmates on his figure had caused him much annoyance.

The boy was well grown, his muscular system well developed. He sat or stood with his head tipped to the right, his face turned a little to the right and inclined considerably forward, his right shoulder considerably lower than the left, the spine laterally curved with convexity to the left. (Fig. 1.) In walking the left shoulder was carried a little in front. The excursion of each eye was good in all directions. In ordinary positions, in fixation for near or distance, the left eye stood about 1‴ higher than the other. Only when the eyes were turned much down and to the left, while at the same time the head was inclined forward and to the right, and rotated a little to the right, did he apparently get binocular fixation; even in this position the left eye rolled up when it was covered, and on being uncovered again did not instantly come back to fixation. In this position it was impossible to use the stereoscope; in other positions he could see the two images at once (L. and F. for instance), but could not unite them, the images were homonymous, the right always higher. He also apparently fixed binocularly with his head nearly in the normal position when prisms amounting together to 20° – 25° were placed before the eyes, base down L., base up R. — V., R. or L., $\frac{14}{12}$. Fundus normal in both eyes.

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[1] Read before the American Ophthalmological Society.

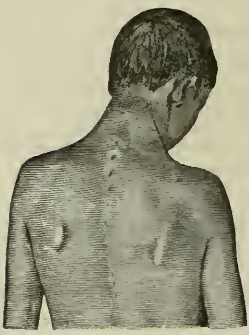

FIG. 1.

On June 10th further attempts were made to obtain stereoscopic vision without avail. L. and F. could be brought to a level with vertical prisms amounting to 18°, but not united. V., under homatropine, R. or L. with + .75, $\frac{14}{12}$ +.

July 14th, with cocaine, the superior rectus tendon of the left eye was partially divided, but the boy became very unruly and the operation could not be completed. Although I thought a fairly wide division had been made there was no perceptible effect in the position of the eye.

August 12th, another attempt at division of the same tendon was made, with cocaine, the boy being unwilling to take ether, and assuring me that he would be quiet. This time he became unruly still earlier, and the operation was again abandoned.

October 22d, the boy's condition was the same as in June. Under ether, the left superior rectus tendon, which was large and broad, was fully divided.

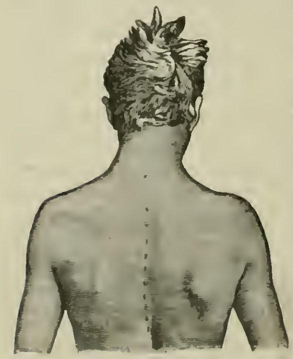

FIG. 2.

November 17th. The boy and his father report that since the last operation, he has been much straighter, and is still improving. Both his head and trunk have a very much better position. The left eye now turns down as far as the right, not quite so far up. The eyes usually appear straight, but when the left is covered, in most positions at least, the right seems to move downward a little to fix, and *vice versa*. He cannot unite in the stereoscope.

December 9th, 1888. He has grown much during the past year. His figure is now almost normal, but the right shoulder is still slightly lower than the left, and the head is very slightly tipped. (Fig. 2.) He has never had double vision or asthenopia. The left eye turns as far down as the right, not quite so far up, as far laterally. V., R. with + .50 cyl. $\frac{14}{12}$; L. with + .50 $\frac{14}{12}$. When he fixes in the median line, in or a little below the horizontal plane, on covering the right eye it appears to turn upward a very little, and when the left eye is afterward covered in turn, to turn downward again to fix; if the left eye is covered first, the right does not appear to change. Double images of a flame at 14′ are not perceived even with the help of red glass and prisms. In the stereoscope L. and F. are united with difficulty.

It would seem *prima facie* an almost incredible supposition, that with never a sign of double vision or asthenopia, a faulty position of the eyes should cause so pronounced and persistent a distortion as in this case, particularly when the distortion did not enable the individual to obtain binocular fixation for the vastly greater part of the time. Yet the fact that the distortion did to all appearance render binocular fixation possible in one position of the object led me, in the absence of other discoverable cause, to think this supposition probable. It is within the bounds of possibility, also, that in earlier life the twisted posture gave binocular fixation over a wider area, and therefore for a larger part of the time, and that the posture once become habitual occasional binocular fixation only was needed to maintain it in permanency. The rapid improvement that took place after tenotomy appears to sufficiently confirm the correctness of the theory.

It has been suggested to me that the vigorous growth of the boy during the year after the tenotomy was one, perhaps, the most active factor in the change that occurred. I should be far from denying that the growth had been a helpful influence. To suppose it more than a subsidiary one, however, is to neglect the consideration that during the four and a half months that elapsed between the time the boy was first seen and the tenotomy there was no discoverable improvement, while during the first month after tenotomy the improvement was very marked.

The objection might also be made that it was not the actual changed relation of the eyes, but the moral effect of the operation that produced the desired result. But certainly the incomplete operations under cocaine, which did not alter the position of the eyes, should have had even greater moral effect than the operation under ether, and yet they left the condition absolutely unchanged.

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A CASE OF HÆMORRHAGIC PANCREATITIS.

REPORTED BY WM. SIDNEY THAYER, M.D.
Formerly House-Officer at the Massachusetts General Hospital.

SINCE the appearance last winter, of Dr. R. H. Fitz's paper on Acute Pancreatitis, no further cases of this nature have, I believe, been reported. The real and practical importance of this subject, so strongly set forth by that most valuable work, has seemed to me to make this case well worth recording.

The patient was a man sixty years of age, by trade, a designer of rubber boots. His family history was excellent. He had suffered from no serious illness but had always been unusually strong and healthy. Though not very tall, he was of large frame and rather fat, weighing, three months before his death, two hundred pounds. His habits in early life had been good, but in his later years he had indulged moderately in liquor, occasionally — "once every month or two," according to his friends — to excess. He had never been subject to digestive troubles.

Thirteen months before his death he was seized suddenly one day, with a very severe pain in the epigastrium darting through to the back. The pain was very sharp and continuous, lasting about sixteen hours, and ceasing gradually. Four months later he had another similar attack, and this time his wife noticed that toward the end of the seizure and on the following day, he was jaundiced. For six or seven months after this there was no recurrence of the pain, and the patient considered himself in the best of health.

About three months before his death, however, he began to have similar attacks of pain recurring at intervals of one to two weeks. These attacks were all of a like character; very sudden in onset — "He just knew when they were coming:" — lasting usually twelve to eighteen hours, sometimes a shorter time; the pain disappearing rather gradually. Most of the attacks were attended toward the latter part, and followed on the next day, by jaundice. The pain was always in the epigastrium darting through to the back, in the left hypochondrium, and "at the extremity of the ribs on the left side" — The friends are sure that the attacks bore no relation in time or otherwise, to the taking of food. The patient, however, thinking that it might relieve him, used, at first, to force himself to vomit, but in the later attacks vomited involuntarily. The vomitus consisted chiefly of food — no hæmatemesis.

During the last month of his life, the patient complained constantly of a "choking feeling" in his throat, "as if something were sticking there and would neither go up nor down." At times, also, he had a similar feeling behind the lower part of the sternum, as if food had "stopped just about entering the stomach." During the last month the attacks of pain recurred every two or three days, and the patient, believing that they were in some way connected with his food, lived for nearly three weeks on a liquid diet. He was unable to attend to his work properly, and lost much strength, and twenty-five to thirty pounds in weight.

On June 13, 1889, he came to the out-patient department of the Massachusetts General Hospital for advice. He went back to work but the attacks continued, and on June 23d, he came to Boston. On this date, for the first time in three weeks, he ate a hearty dinner of beefsteak and potatoes.

On the morning of June 24th, at 9 A. M., he had a severe attack of pain, apparently similar to those from which he had previously suffered, and at about 3 P. M., he was admitted to the Massachusetts General Hospital, service of Dr. W. L. Richardson. At this time he was in great distress, groaning, and tossing about with pain. He placed his hand, in describing the seat of the pain, in the left hypochondrium and epigastrium, just to the left of the middle line.

Physical examination showed a man of large frame and well-nourished; marked pallor; tongue dry; pulse regular and of good strength, 120; temperature 98.8°; respiration 28; heart and lungs negative; abdomen rather full but not distended. The patient did not complain much of tenderness, though deep pressure in the left hypochondrium caused him to flinch. Pressure on the lower left ribs did not seem to increase pain.

The patient suffered considerably during the afternoon, and in the evening was given morph. sulph. gr. $\frac{1}{6}$ hypodermically, and an hour later a suppository of morphia gr. $\frac{1}{6}$, after which he fell asleep, sleeping most of the night.

The *urine* obtained shortly after entrance was rather high-colored, acid; specific gravity 1024; no albumen or sugar; indoxyl increased; sediment slight, microscopical examination showing an occasional leucocyte and bladder cell, no casts. The Rosenbach color test gave a positive result. The patient was given a liquid diet.

On the morning of June 25th, the patient did not complain of pain, but seemed rather dull and stupid, and said he felt sick. He vomited his milk once. Temperature, 98.4°; pulse, 100; respiration, 26. A slight yellowish tinge was noticed in the skin and conjunctival, and soapsuds enemata were given without result. Shortly after 3 P. M., he suddenly sat up and threw himself across the bed. When seen, about ten minutes later, he was tossing about the bed in great distress, though he seemed unable to say why. His speech was thick and indistinct; when asked if in pain, his answer could not be understood. There was marked cyanosis; skin hot, moist; pulse not to be counted at the wrist, very feeble; by auscultation, heart's action weak but regular, 160; respiration very shallow and rapid, 60–70; temperature, taken by rectum about an hour later, 105°; no orthopnœa; tendency to lie on the left side. Fine moist râles were heard in the left axilla, and a general fulness of the abdomen was noted. Stimulants were administered by the mouth, and when in a short time the patient became unable to swallow, hypodermically and by enemata. In an hour the patient became unconscious, and at 7.10 P. M., died.

An autopsy was made by Dr. R. H. Fitz, thirteen hours after death. The following extracts are taken from the record:

"Heart: right side distended with liquid and clotted blood, the latter differentiated; left side comparatively empty. . . .

"The duodenum contained a faceted gall stone about the size of a hazel nut.

"Pancreas: in length, 8 in.; longitudinal diameter of head, $1\frac{1}{2}$ in.; longitudinal diameter of tail, $1\frac{1}{4}$ in.; transverse diameter of head, $1\frac{1}{2}$ in.; transverse diameter of tail, 1 in. Consistency soft. Surrounding fat tissue moderately infiltrated with blood, which toward the tip and along the posterior surface was in spots and patches dried, of a reddish-brown color. Posterior surface of the pancreas adherent by easily separated adhesion to the posterior wall of the lesser omental cavity. Fat tissue in front of pancreas and at root of mesentery showed numerous opaque, white superficial spots, sharply defined. The pancreatic duct readily admitted a director. On longitudinal section of the gland, the color of the head was an opaque reddish gray; of the tail a greyish pink. Spots and streaks of an opaque white and others of a reddish-brown color were seen, especially at the tip. The tubules in general were indistinctly defined, but in the head, and more rarely in the tail, were apparent patches of thickened interstitial tissue. The splenic and portal veins were free from thrombi. . . .

"Gall bladder, thickened, firmly contracted, containing more than a hundred calculi, for the most part faceted and varying in size from that of a hazel nut to that of a split pea. One large, white calculus was oval, rounded and as large as the end of the middle finger

The gall bladder also contained a small quantity of viscid, opaque, yellow fluid. Mucous membrane thickened and rough.

"Common duct dilated to nearly the size of the little finger. Cystic and hepatic ducts also moderately dilated."

With regard to symptomatology few conclusions can be drawn from this case, owing to the close association of the pancreatitis, with the frequent attacks of probable biliary colic. But whatever the nature of these attacks, it is of interest that the pain was always in the region of the pancreas.

The possibility that the patient may have had previous attacks of pancreatic inflammation, is certainly suggested by the patches of apparently thickened interstitial tissue found on autopsy.

The occurrence of disseminated fat necrosis is interesting. This condition was found in more than one-third of the cases of hæmorrhagic pancreatitis tabulated by Dr. Fitz.

The case seems to me to be of peculiar interest in view of the possible etiological relation between the cholelithiasis and the pancreatitis. The probable frequent passage of gall stones and the resulting dilatation of the ducts would surely seem to afford an excellent opportunity for the entrance of any infectious agent from the intestinal canal.

While the evidence obtained during the life of the patient was not sufficient to justify a positive diagnosis, acute pancreatitis was throughout considered to be the probable condition.

REPORT ON PROGRESS IN THERAPEUTICS.[1]

BY FRANCIS H. WILLIAMS, M.D.

INCIDENTAL EFFECTS OF ANTIPYRIN.[15]

FEW of the modern antipyretics have found such a wide application as antipyrin, and scarcely any has such unpleasant or deleterious accompaniments; moreover, the cases in which its use causes dangerous symptoms are increasing in number.

Dr. Drasche has reported the results of his own observations on more than three hundred cases, and has collected the reports of its incidental effects from the current literature. It has even been found to excite fever repeatedly in a case of rheumatism in a woman of fifty-two. Not infrequently the administration of antipyrin was followed by nausea and even vomiting, more often in women than in men; this action was not a local one, as it occurred in cases in which the drug was given by the rectum. In two children moderate doses were followed by hæmatemesis, convulsions and death. The eruption caused by antipyrin is of special interest; it occurs in about ten per cent. of the cases, chiefly in typhoid and phthisis, more often after continued use, though in some cases after a brief period and in minimum doses. It has, in exceptional cases, appeared after an interval of only five minutes and half an hour. As a rule, the exanthematous eruption remains from one to three days, but may be present for a week or more; and it is quite independent of the amount given. The eruption is in the beginning chiefly local, but may spread over the whole body. It is most frequently erythematous in character, but may resemble measles, scarlet fever and urticaria, and may occur even in different forms in the same individual at various times.

A rapid fall of temperature from antipyrin is not infrequently accompanied by profuse sweating, which may continue for several hours; this, on readministration of the drug, may or may not return to a greater or less extent. In phthisis, after comparatively small doses, there may follow profuse and debilitating sweating.

In typhoid pneumonia there may also be marked lowering of the blood pressure. The temperature may sink far below normal, and, on the other hand, may rise to even a higher point than before; there may be not only profuse perspiration but even rigors, and in some instances this may culminate in collapse and cyanosis. It may cause convulsions or narcotic symptoms, such as sleepiness, hebetude and great depression. Severe coryza with abundant discharge of mucus, difficult breathing with frequent cough and expectoration, and profuse sweating may also be caused by it.

It is generally believed that antipyrin exerts no marked action on the kidneys, but slight degrees of retention, as well as incontinence, have been noticed, though quite rarely. The urine is somewhat diminished in quantity, and its specific gravity increased.

Antipyrin is certainly a drug which may excite disquieting and threatening symptoms as well as exert a toxic action, though their occurrence is exceptional. In general it may be said that weak, debiliated subjects, those with a weak heart, and children, are most apt to show susceptibility to the drug. In such patients small doses should be used at first, especially in typhoid fever and phthisis.

ANTIPYRIN AS AN ANALGESIC.

This drug has been used subcutaneously in a solution containing thirty to fifty per cent. of antipyrin. Gunther[16] found that a deep injection made at the seat of a fresh fracture enabled him to apply the first apparatus without the slightest muscular contraction. This use of antipyrin might be applied to various painful conditions. The effect appears within a minute, and lasts about six hours.

Wolff[17] attributes to antipyrin a local action over pain equal to, if not surpassing, that of morphine. In acute rheumatism, an injection, in the neighborhood of the affected joint, relieved the pain in three to five minutes, so that the patient could raise an arm, without pain, that was previously helpless. The chest pains of phthisis he saw relieved in five minutes, and permanently; and the stabbing pains of pleurisy, etc., so assuaged in a few minutes that a satisfactory examination, previously interfered with by the shallow breathing, was made possible. In muscular rheumatism, in a large series of cases, the pain disappeared after a few minutes, either not to return at all or in a much more moderate degree. In neuralgias of superficial nerves and in asthmatic attacks, the results were extremely satisfactory. According to Wolff its action follows within five minutes, and persists ten to twelve hours, if then the pain returns it is much modified.

The solution is made of fifty per cent. strength, in boiled distilled water and filtered several times. A syringeful of eight grains is given, but oftentimes one-half the quantity is sufficient. No bad effects from the antipyrin were observed, but locally the injection causes, in all cases, some burning pain, which is often intense. [A small amount of cocaine might relieve this. — Rep.]

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[1] Concluded from page 483 of the Journal.

[15] Wiener klinische Wochenschrift, October 11, 18, 1888.

[16] Deutsch Med. Wochenschift May, 1888.

[17] Therapeutische Monatshefte, 1888, p. 279.

ANTIPYRIN IN POLYURIA.

Huchard reported to the Therapeutical Society of Paris[18] that in a case of diabetes insipidus, long under observation, he had succeeded in reducing an amount of twenty-eight quarts to three quarts by the use of thirty to ninety grains of antipyrin, other drugs given as controls proved that the antipyrin was the effective agent. Again, a simple polyuria of ten quarts was reduced in five days to half that quantity.

A diabetic passing eleven quarts, after ninety grains per day, passed only three quarts, and the amount of sugar was much reduced. In the discussion, Dujardin-Beaumetz said he had found its use very satisfactory in simple polyuria, giving thirty grains per day; but in diabetes mellitus, though the amount of urine and sugar was reduced, albumin simultaneously appeared.

Eichhorst[19] saw no good results from antipyrin in diabetes mellitus, but in a case of diabetes insipidus an excretion of twenty-six pints was reduced to normal by seventy-five grains and held there.

ANTIPYRIN IN THE NASAL PASSAGES.[20]

Dr. Hinkel has employed this drug in cases of acute coryza. A solution of antipyrin, when sprayed into the nose, possesses hæmastatic properties, though inferior to cocaine. In about a four per cent. solution (sixteen grains to an ounce), it may be used upon the nasal mucous membrane with temporary relief to occlusion from engorgement of the turbinates, and with sedative effects upon irritable states, and is most effective where the element of irritation exceeds that of inflammation. It presents an advantage over cocaine in not producing local numbness and dryness, and, in the absence of the general stimulating properties of cocaine, causing sleeplessness, headache, etc. In cases, such as hay fever, in which an agent for relief is used for long periods, antiyprin, as a nasal spray, is less likely than cocaine to produce constitutional disturbance, or to lead to a "habit." Antipyrin has the disadvantage of causing more of less severe smarting, and of being unequal to the relief of severe inflammation or extreme occlusion of the nares. Combined with one-quarter to one-half per cent. of cocaine, it increases the local action of the latter, enabling it to be used in weaker solution.

PHENACETIN.

Of many reports on the use of phenacetin, one by Dr. Freidrich Müller[21] is of unusual merit. He made numerous trials of the remedy in various diseases, and found that the temperature in adults was lowered by doses of seven to eleven grains, and seldom as much as fifteen grains was used. The fall in the temperature occurred within from one to four hours, and was accompanied in most cases with perspiration, but without disagreeable sensations.

During the apyrexa, which lasted from three to five hours, the patients were quite comfortable, having a better appetite and more sleep. The rise in temperature was unaccompanied by a chill. For the patient's comfort it is desirable to avoid alternate fall and rise in the temperature. If the drug is administered continuously, the temperature rises in spite of it; after some days the system becomes habituated to the agent, and larger and larger doses are required, in fact, so large as possibly to become dangerous. He has observed marked cyanosis from ninety to one hundred and twenty grains daily. Nothing more is accomplished by phenacetin than by other antipyretics, for example, antipyrin; but it has the advantage of less unpleasant accompaniments. It is tasteless, vomiting and indigestion appear only exceptionally, ringing in the ears, or exanthematous eruptions, or signs of renal irritation were not observed. In some cases phenacetin seemed to promote diarrhœa.

Phenacetin possesses the property of quieting pain, and has been employed to relieve headache, except that connected with organic cerebral disease or uræmia. Forty-five, or even seventy-five, grains a day are required. In some neuralgic affections the pain is relieved by phenacetin, and for such purposes it seems to be in no wise inferior to antipyrin and antifebrin. It is interesting to note that phenacetin possesses practically no antiseptic qualities.

ANTIPYRETICS.

It is interesting to look back upon the recent history of various antipyretics. When salicylic acid was first used, its application was very general, but gradually it was employed in a narrower and narrower field.

Next the dihydroxyl derivitives of benzol were studied, and there appeared pyrocatechin, resorcin and hydrochinane; they were soon shown to be unsuitable as antipyretics; then the bases of the quinine group were investigated, and chinolin (1881) was made by heating quinine with alkalies. From chinolin two phenols were prepared, one of which served as the basis of kairin (1882), the other of thallin (1884). Finally, the last member of this group was prepared synthetically by Knorr, oxydimethylchinicin or antipyrin (1884).

PYRODIN.[22]

There is at present a third group of three which are derived from anilin, acetanilid or antifebrin (1886), and similar to it, phenacetin or acetphedetidin (1887), and most recently pyrodin, a mixture of which the active portion is acetylphenyldracin.

Taking the experience given in the *Centralblatt für die gesammte Therapie*, March, 1889, we are led to the conclusion that pyrodin is a very active means of reducing temperature, compared with antifebrin, it has the great disadvantage of being more toxic in its effects.

In typhoid fever it should be wholly discarded; in pneumonia, scarlet fever and measles it is not required. In tuberculosis and other chronic diseases accompanied with fever, it has marked limitations, as it cannot be given for more than a very few days at a time. In rheumatism it is far behind salicylate of sodium, and as an analgesic, is not to be compared with antipyrin or antifebrin. Since pyrodin presents no advantages over other antipyretic drugs, the object of this outline is chiefly as a warning against its use.

Pyrodin is one of the latest of the antipyretics. It seems to be a more powerful agent than antipyrin, antifebrin or phenacetin, and much more dangerous in its character. It is a derivative of coal tar, a white crystalline powder, sparingly soluble in cold water, and almost tasteless. It should never be given in larger doses than twelve grains, and only once in eighteen or twenty-four hours, and then with the greatest caution.

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[18] Le Progres Méd., 1888, p. 417.

[19] Münch Med. Wochenschrift, 1888, p. 487.

[20] New York Medical Journal, October, 1888.

[21] Therapeutische Monatshefte, August, 1888.

[22] Lancet, December 8, 1889.

MENTHOL IN PRURITUS LABII.[23]

The application is made by rubbing the affected surface two or three times with solid menthol. It produces some burning pain at first, but is followed by a most comfortable sense of coolness.

PELLETIERINE.[24]

Béranger-Ferand has published an article in which he sums up the cases of tapeworm — in all, 191 patients — at the Maritime Hospital of Toulon during the year 1888, and the results of treatment. He gives the preference to pelletierine, the active principle of pomegranate bark, as being by far the most successful tænicide of all the remedies used. Pelletierine was employed in 152 cases, and was successful in 110; in 42 it was unsuccessful. The patient takes nothing but bread and milk for supper the evening before; the next morning five grains of the sulphates of pelletierine and iso-pelletierine are administered in solution with eight grains of tannin (or half a bottle of Tanret's solution of the mixed pelletierines, the other half to be given in an hour); from 7.30 A. M. to 8 A. M. a full dose of a tablespoonful of the German tincture of jalap is given, or from an ounce to an ounce and a half of castor oil. A few hours after the ingestion of the medicine the patient experiences a slight vertigo; and the tapeworm is voided, as a rule, four hours after the dose is taken. In order to avoid breaking the worm during its passage, and before the head is voided, it is advisable for the patient to sit at stool on a vessel nearly full of warm water.

CREOLIN.

This germicide is obtained from the dry distillation of the best English coal; it is a dark brown, oily liquid of a tarry odor. Its chemical composition is uncertain, and it is not without toxic properties. The preparation made by one manufacturer is not the same as that produced by another, consequently the value of creolin as an antiseptic may vary within wide limits. The danger of poisoning should not prevent the use of the drug, which is said to be preferable to carbolic acid, salicylic acid, iodoform or corrosive sublimate. It may be applied to a wound in solutions containing from 1 to 5 parts per 1,000 without fear of poisoning.

The use of this antiseptic and deodorizer in certain diseases of the throat and nose, especially those which are accompanied by profuse and offensive secretion, diminishes the amount of the discharge and improves its character.

Since the introduction of this substitute for carbolic acid, its use has spread rapidly, not only for external use as a disinfectant, but also as a douche for various cavities and mucous membrane, and even internally in diphtheria, phthisis and diseases of the alimentary canal. It does not act on the skin and tissues, either of the patient or of the operator, as much as carbolic acid. In one case it has caused symptoms similar to those found in carbolic acid poisoning.

SACCHARIN.

In medicine its chief uses have been in diabetes, in place of cane sugar, and as a corrigent. It has been looked upon as an indifferent substance in its effect upon the system. Thus Professor Mosso gave it in large quantities to animals without damaging results, and eighty-five grains in men caused no bad effects.

Salkowski[25] confirmed its innocuousness. Stadelmann, employing it on eleven patients, found it harmless in nine, while in two others it caused severe gastric disturbance. Dr. Worms, in a paper read before the Paris Academy of Medicine,[26] has reviewed the question and presented it in not quite so favorable a light. Used by five diabetics, in the dose of half a grain twice a day, it could not be borne in three of the cases longer than eight or ten days, it then caused loss of appetite, nausea, severe gastric pains and a sweet taste in the mouth.

M. Constantine Paul finds that saccharin possesses marked antiseptic powers. A 1 : 500 solution hinders, in an appreciable manner, the action of pepsin on the white of egg fibrin, etc., and of diastase on starch, but does not arrest their action entirely. This may, perhaps, account for the digestive disturbances referred to by Dr. Worms.

The mistake generally made with all preparations of saccharin is that the intense sweetening property of saccharin is overlooked, and too much is used, both for purposes of diet — as when it is added to tea and coffee — and when it is prescribed in mixtures, powders, etc. Professor Atfield regards the advantages of saccharin as three-fold. It enables many medicinal confections, powders and lozenges to be given in comparatively small bulk. It is able, by the intensity of its sweetness, to mask the nauseous taste of many drugs; it is not liable to ferment, and hence will yield permanent preparations in place of those made with sugar.

THE RELATION OF DRUGS TO THE SECRETION OF BILE.

As is well-known, there is no therapeutic question in regard to which so much doubt and disagreement prevail as that relating to the action of drugs on the biliary secretion, or, as is commonly said, on the liver.

Prevost and Binet have published[27] the results of exhaustive inquiries into the subject, controlling and testing the results of previous experiments, particularly those of Rutherford. Bile itself they find to be the most powerful cholagogue, whether given in the natural state or in the form of a dry extract. Bile is also toxic in sufficient doses subcutaneously, and will produce death, with symptoms of collapse.

The following substances these observers have found to increase the flow of bile: oil of turpentine and terfene, chlorate of potassium, benzoate and salicylate of sodium, salol, euonymin.

Substances producing only a slight or doubtful and inconstant increase are: alkaline salts, Carlsbad salts, antipyrin, aloes, cathartic acid, rhubarb, hydrastis canadensis, ipecac and boldo. Thus cathartics and the alkaline salts, which Rutherford considered cholagogue in non-cathartic doses, these observers found lacking in any such power.

Substances diminishing the secretion: iodide of potassium, calomel, iron, atropine and strychnine. In regard to calomel, the writers have not been able to confirm Rutherford, who believed that whatever cholagogic action calomel had was owing to its transformation into corrosive sublimate. Corrosive sublimate, given by itself, produced no increase in the flow of bile.

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[23] British Medical Journal, September 1, 1888.

[24] Bulletin generale de Therapeutique, February 15, 1889.

[25] Virchow's Archiv., cv., p. 46.

[26] La Tribune Méd., 1888, p. 234.

[27] Rev. Med. de la Suisse Rom., 1888.

GLYCERINE AS A LAXATIVE ENEMA.

The history of the revival of the use of glycerine as a laxative enema is not without interest.

First, Anacker,[28] having discovered that "das Purgativ Oidtmann," a proprietary medicine of some renown, and given by the rectum in quantities of from twenty to thirty minims was mostly glycerine, tried this substance alone with enemas of fifty drops, his success was complete and unvarying. After him Varnassy[29] made trial of it in one hundred and fifty cases of all ages, with astonishing results, using thirty minims. Next, Seifert[30] reports the best results; he used, on an average, one ounce. In smaller quantities he recommends it especially for children. Boas has had the same gratifying success with suppositories of glycerine, the dejection follows in fifteen to twenty minutes.

Glycerine ought not to be used where there is ulceration. Its action is probably due to the local irritation excited by the glycerine.

CHLORALAMIDE.[31]

Among many recent hypnotics this one is brought forward with less than the usual flourish of trumpets which heralds the birth of a new drug. Chloralamide, is an addition-product from chloral, anhydride and formamide. It is a white crystalline body, of slightly bitter taste; it is decomposed in alkaline solutions, and is, therefore, best given in a slightly acid one. It may be given in wine, as it is readily soluble in alcoholic solutions. It dissolves in nine parts of water. The dose is from thirty to forty-five grains; it is not very expensive.

Dr. Kny has compared its action with that of chloral on animals, and finds that the blood pressure is much less depressed from chloralamide than after the administration of chloral. Dr. Kny compared these two hypnotics, on patients who had been using chloral, with good results. He claims that chloralamide may be given without danger to old people, but, as is the case with chloral, in severe forms of peripheral irritation, or in violent cough, or severe headache but little relief is to be obtained. The effectiveness of chloramide as compared with chloral is as forty-five grains of chloramide to thirty of chloral.

Its action is somewhat tardy, twenty to forty minutes, on an average of half an hour, being required to produce decided effect; the influence of chloral is usually perceptible in fifteen minutes. The sleep produced by chloralamide is deeper than that of chloral, and will vary, according to individual pecularities, from six to ten hours.

It is relatively free from irritating properties and from any disagreeable taste, a chief advantage over chloral is the probable absence of any considerable influence upon the heart. It is suggested that its action may be due to the splitting up of the substance into chloral and formamide, by the free alkali in the blood, thus only small quantities of the chloral became effective at any one time. Further, a point which seems to be in favor of the use of chloralamide, is that formamide acts as a stimulant to the vaso-motor centre in the medulla, and thus tends to elevate the blood pressure.

Some observations which have recently been made, in the clinic for nervous diseases at Halle, seem to indicate that doses of forty-five grains of chloralamide cannot be exceeded without leading to unpleasant effects. Two young women, in a perfect state of health, each received at four o'clock in the afternoon sixty grains of chloralamide. Within an hour each complained of dizziness. In one a condition closely resembling intoxication was produced, great excitement, and continuous talkativeness, while the other complained of unpleasant giddiness and staggering, with headache, especially in the posterior part of the head, and nausea. The greatest intensity of these unpleasant symptoms was reached about three hours after the administration of the drug. In one of the cases the stomach was washed out, and found to be entirely empty, although this procedure did not succeed in arresting nausea. With the exception of some slight increase in frequency, there was no change in the pulse worthy of mention; and the next day, with the exception of slight dizziness and moderate pain in the back of the head, all the above symptoms had disappeared. These cases appear to show that only in exceptional instances should the dose exceed forty-five grains. In other respects, the studies made in one hundred and ninety-six different instances, on forty-one patients, seem to warrant the conclusion that chloralamide is a valuable addition to our list of remedies. That in many cases, especially in simple insomnia, it will produce a good sleep without any hurtful influence upon the circulation, respiration or digestion, and with relatively slight, unpleasant subjective after-effects, while on account of its freedom from disagreeable taste it is readily administered.

It is not, however, to be regarded as a hypnotic which will invariably succeed in producing sleep, since, in many instances, it may entirely fail, in others the sleep may be very late in making its appearance, while, finally, in certain cases, and with large doses, the after-effects may be decidedly annoying.

Dr. Reichmann began the use of chloralamide by giving doses of fifteen grains, and obtained very varying results; with doses of thirty grains the action was better, and with forty-five grains still more satisfactory.

Other observers mention slight headache and dizziness as unpleasant accompaniments. For women thirty grains is a sufficient dose. The results, thus far, with chloralamide warrant further trial, though, as with many other remedies, the disadvantages of its use will be more apparant after a larger experience.

— MM. Magnan and Saury report three cases of hallucination due to the cocaine habit. According to the *British Medical Journal*, one patient was always scraping his tongue, and thought he was extracting from it little black worms; another made his skin raw in the endeavor to draw out cholera microbes; and a third, a physician, is perpetually looking for cocaine crystals under his skin. Two patients suffered from epileptic attacks, and a third from cramps. Two of these patients had resorted to cocaine in the vain hope of curing themselves thereby of the morphine habit.

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[28] Deutsch Med. Wochenschrift, 1887, p. 823.

[29] Men. Med. Presse, 1887, p. 48, and Ther. Monatshefte, March, 1888, p. 140.

[30] Munch. Med. Wochenschrift, 1888, vol. i, 9.

[31] Therapeutische Monatshefte, August, 1889.
Therapeutic Gazette, October, 1889.
American Journal Medical Sciences, October, November, December, 1889.

Clinical Department.

TYROTOXICON POISONING.

BY J. N. MARTIN, PH.M., M.D.
Acting Professor of Obstetrics and Diseases of Women and Children, University of Michigan, Ann Arbor.

ON May 29, 1889, about 9.30 A. M., I was called in great haste to see Mrs. Roth, of 60 South Fifth street, of this city, who, her husband (who came for me) said, had been taken suddenly and violently ill. While on our way to the house, Mr. Roth complained of feeling very weak, nauseated, and dizzy, and had a choking sensation. Within fifteen minutes I was at the bedside of his wife.

I found her suffering great pain in the region of the stomach and a severe headache, with dryness of the throat, extremely weak and nervous, with some delirium and convulsive movements of the limbs. Her pulse was 124, weak and irregular, temperature 99½°, her pupils fully dilated.

Upon inquiry, I obtained the following history: Mr. and Mrs. Roth (both intelligent people), were perfectly well, previous to breakfast; they ate breakfast at 7.30 A. M., which consisted of milk-toast, coffee and milk. Before the meal was finished, Mrs. Roth complained of severe headache, roaring in her ears and dizziness. Convulsive movements of the limbs soon began, accompanied by a choking sensation. She grew weak so rapidly that she required assistance in reaching her bed. In five or ten minutes, she became delirious, and in less than half an hour was totally unconscious, in which condition she remained ten or fifteen minutes, during which time there was an involuntary discharge of urine. The convulsive movements of her limbs continued until consciousness was restored, and more or less for a half-hour following, and the choking sensation still longer; the headache grew worse and patient complained of severe pain in the region of the heart. "I feel as if my heart were being crushed between two solid bodies," she said.

I administered an emetic of sulphate zinc, which produced free emesis; the convulsive movements stopped immediately, but pain in head and heart continued until they were relieved by nitrate of amyl.

She remained weak during the day, the next morning was able to walk, but owing to extreme weakness any exertion produced marked palpitation of the heart. At the end of seven days, she had completely recovered.

Mr. Roch, who ate none of the toast, but drank of the milk in his coffee, felt no ill effects, until some twenty or thirty minutes after his wife was taken sick, when dizziness compelled him to lie down, he became faint, but did not lose consciousness. His wife's serious condition aroused him, and he came for me, a half-mile distant. On the way, he experienced a choking sensation, pain in the chest and headache; he afterwards remarked, "I should have considered myself a sick man, if my wife had not been so much worse."

The milk used had been delivered the day previous about 9 A. M., received in a tin pail with close-fitting tin cover and placed at once in the cellar way, near the cellar stairs, and close by an open window. The milk was used partly for milk-toast and partly for coffee. That part used for the toast was heated to near the boiling point, thickened with corn-starch, poured over the toasted bread and eaten while hot. The milk used freely in coffee was not heated.

Suspecting tyrotoxicon poisoning, I procured the unused portion of the milk for analysis. Mr. Novy, Instructor in Hygiene and Physiological Chemistry in the University of Michigan, made a thorough analysis, and found tyrotoxicon present in large quantities.

BREECH PRESENTATION: SUCCESSFUL DELIVERY WITH FORCEPS.

BY N. KING, M.D., CAMPELLO, MASS.

KNOWING that the medical profession are not united upon the management of breech cases, and that the application of forceps in such cases is still opposed by many on theoretical grounds, who continue to advocate the use of the fillet and blunt hook, I report the following case as a contribution to the subject.

Mrs. W., age twenty-two, primipara. Confinement expected November 7, 1889. Labor commenced at 9 P. M., October 27th. I was called at four the following morning, and upon examination found the membranes ruptured, a dilated cervix and the breech engaged (L. Sac. Ant.).

Version was out of the question. I endeavored for a short time to get down a leg but failed in my attempt. The pains were violent and slow progress was made until 9 A. M., when the breech was under the symphysis pubis. With the finger in the groin and the thumb on the sacrum, I made traction with the pains for a couple of hours but with no material progress. At 12 M. the pains which previously had been frequent and strong began to lessen in intensity and duration, and in another hour were practically absent.

With a patient discouraged and exhausted and with cessation of uterine pain, I felt that the time had arrived for interference. Accordingly the patient was prepared for operation and was soon well etherized. The forceps (Elliot's) were applied one blade over sacrum, the other over the posterior surface of the thighs. Moderate traction was made at intervals and in twenty minutes delivery of the breech was accomplished, the forceps working to perfection.

Fifteen or twenty minutes were occupied in delivering the head, which was very difficult from over-extension. The usual methods failed until, as a last resort, I carefully applied the blades of the forceps and soon succeeded in bringing it down.

The perineum, which had slightly given away upon birth of breech, was, upon extraction of the head, torn to the sphincter ani. The child was asphyxiated, but in ten minutes was crying vigorously. Weight nine pounds, four ounces. Not marked by instruments to any extent. The perineum was united by two silver sutures. My only assistants in the case were the nurse who gave the ether, and the husband who, under such trying circumstances, rendered aid to the best of his ability.

In eight days the perineal sutures were removed and good union found. Temperature of a degree was present from the third to seventh day; it then dropped to normal, and at this date patient is sitting up, and no longer visited by me.

— The *Medical Mirror* is the title of a new journal to be established in St. Louis, under the editorship of I. N. Love, M.D. The first number is announced to appear in January, 1890.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

Regular Meeting. Monday evening, June 3, 1889. Dr. Farlow in the chair.

Dr. S. W. Langmaid read a paper on

NASAL STENOSIS.[1]

Dr. A. N. Blodgett, said that he could testify in his own case to the efficacy of the treatment recommended by Dr. Langmaid. He was surprised to find how readily the septum yielded to pressure by the finger.

Dr. Vincent Bowditch thought the bad condition of the streets in the spring was an important factor in the production of diseases of the throat and nose. He would ask the reader what his experience had been in the use of chromic acid?

Dr. H. W. Broughton usually recommended, in cases of nasal obstruction due to swelling of the mucous membrane the daily use with a blunt syringe of a weak solution of borax and soda.

Dr. Leland agreed with the reader in condemning the use of cocaine, which, by producing a paralysis of the blood-vessels, causes a secondary congestion of the parts. In his practice, however, he had not found the nasal septum so readily movable.

Dr. Farlow spoke of a case of nasal obstruction caused by a redundancy of the external cartilage of the nose, which hung down so as to occlude the nasal passage. In this case he had used a hard rubber speculum fitted inside the nose, which by lifting up the cartilage gave complete relief to the symptoms. He had used the chromic acid and galvano-cautery with good results and thought that the nasal septum could be bent by the finger so as to give considerable relief to the symptoms.

Dr. Langmaid, in conclusion, said that his paper was necessarily incomplete and that he had not touched upon the effects of nasal stenosis through fear of making his paper too long. He had used chromic acid a great deal in the past, in cases of nasal stenosis but not so much during the last few years, as he found that he could obtain as good, if not better results by milder methods. In case of a deflected septum caused by injury, it was his custom, after giving ether to straighten the septum by forceps and then to put in a plug, usually the nipple of a nursing bottle, which may be distended with cotton if required, this will readily remain in for days and give all the pressure you may require.

Dr. J. H. McCollom read a paper on

VARIOLA AND VARICELLA.[2]

Dr. Ayer said that the paper was one of great practical value. He had been taught that "pain in the back" was a valuable diagnostic symptom of variola, but had found in practice, as the reader had stated, that it was of little value in making the diagnosis. He remembered one case where varicella and scarlet fever had occurred together and both ran their normal course. He agreed with the reader that the diagnosis must be made by the appearance and course of the eruption.

Dr. Buckingham had seen one case of varicella with severe constitutional symptoms, where the diagnosis was made by this unilocular character of the vesicles and the absence of the "shot-like" feeling of the papules.

Dr. C. P. Putnam said that, as a rule, the diagnosis between the two diseases was easy, but in the epidemic of 1872–73 the cases of variola were often of a mild type, which rendered the diagnosis much more difficult. He should say that the eruption of varicella was more apt to be abundant on the chest and back, while the eruption of variola was more frequent on the face.

Dr. Townsend had seen four cases of varicella and scarlet fever occurring at the same time.

Dr. McCollom said that it was impossible to make a diagnosis between the two diseases before the appearance of the eruption and then is was often difficult during the first twenty-four hours. He would place no stress on the situation, or arrangement of the rash, you might find the rash of varicella abundant on the face or that of variola abundant on the body. In mild cases of variola we may find papules, vesicles and pustules at the same time. He would place the most reliance on the "shot-like" feeling of the papules which is never absent in variola and never present in varicella.

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Recent Literature.

Cyclopædia of the Diseases of Children, Medical and Surgical. Edited by John M. Keating, M.D. Vol. I. 992 pages. Philadelphia: J. B. Lippincott Co.

From a glance at the list of contributors to this volume, we are lead to expect a valuable work, and in this we are not disappointed, for we find a collection of monographs, for the most part exhaustive, arranged in a systematic treatise. The editor is greatly to be congratulated on the success of his undertaking, for which indeed the times are ripe, not only in the existence of individuals and societies devoted to the branch of pediatrics, but in the recognition by the profession at large of the importance of this branch with which they all have so much to do, which hitherto has not been properly studied.

In an introductory address Dr. Jacobi shows that pediatrics does not merely deal with reduced doses and the same class of diseases in smaller bodies, but that it has its own independent range and horizon.

Part I. *General Subjects*, begins with an article of forty pages, by George McClellan, of Philadelphia, on "The Anatomy of Children," in which he considers the various regions of the body *seriatim*, illustrating his remarks by numerous diagrams and photographs. The article will be of great value for reference to the diagnostician and surgeon.

Angel Money follows with a chapter on "The Physiology of Infancy," filled with interesting observations, including useful tables of weight and length. The acts of sitting, crawling and walking are, he believes, instinctive, and these acts are not performed at birth, simply for want of development of the brain. Dr. Money concludes by saying "the subject of the physiology of infancy is a comparatively unworked field, but a most interesting one nevertheless."

Chapters on "Diagnosis" often seem a waste of time, as they merely repeat what is to be found in other parts of the book. This is not the case, however, in the chapter, of fifty-eight pages, under this head by James Finlayson. We are glad to see that "Jadelot's lines" in the face, said to indicate suffering in the head, chest or abdomen, are not looked on with great favor by Dr. Finlayson. It is about time for the text-books to cease from copying them. Under the head of "Peculiarities in the Disorders of the Various Systems in Childhood," he concludes a chapter that is filled with useful hints.

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[1] Publication deferred.

[2] See page 501 of the Journal.

Barton Cooke Hirst discusses the "Disease of the Fœtus"; — then follow "The Influence of Race and Nationality on Disease," by J. Wellington Byers, and "Outlines of Practical Bacteriology," by E. O. Shakespeare. The latter article is carefully written and thoroughly illustrated by cuts and plates, the latter being reproductions of micro-photographs of the tubercle, typhoid and other bacilli.

Wm. C. Dabney reviews in a most able manner the evidence upon which the theory of maternal impressions rests, giving a table of ninety cases from various sources, and one is forced to accept the conclusion, that impressions made upon a pregnant woman *are* capable of causing defects in her child.

R. A. F. Penrose, writing on "The Care of the Child at and Immediately after Birth," presents a very readable article of the methods used by himself, but it is not as thorough and complete as one would wish in a cyclopædia. He describes, for example, but one method of artificial respiration, that of mouth to mouth insufflation, which he considers the best.

The important subject of "Infant Feeding and Weaning" is dealt with in a masterly manner, by T. M. Rotch, in an article of some sixty pages. His endeavor is to follow nature as closely as possible, with the help of the most recent scientific knowledge, and he inveighs against the purely clinical method so generally used by physicians in the study of this subject. Mother's milk, being generally acknowledged to be the best food, interesting analyses by Harrington are given showing how it may be injuriously altered by anxiety, diet, etc. The value and practical importance of these analyses are well shown. The complexity of the subject of artificial feeding is thoroughly recognized, and is treated at length. He describes and figures the feeding tubes devised by himself, easily cleaned and graduated in size according to the age; figures are given of the infant stomach at different ages showing its approximate size. Sterilization, its importance and methods are described, and the bacteria of the alimentary canal considered. Then follow valuable tables of cow's and woman's milk, and also of the various patent foods. The latter are introduced only to show how inadequately they fulfil the requirements of artificial food, and Dr. Rotch does physicians a great service in plainly calling this to their attention.

In a very clear and satisfactory manner, going into the practical details, he shows how cow's milk may be modified by dilution with water and the addition of cream, milk sugar and lime water, so that it approaches as nearly as possible to woman's milk. One cannot but be impressed with the superiority of this scientific and withal simple method of infant feeding over the blundering, slipshod and too often disastrous methods in common use.

The remaining articles in Part I, which space permits us only to mention by name, are: "On the Closure of the Ductus Arteriosus and of the Umbilical and Hypogastric Arteries," by J. C. Warren; "Injuries of the New Born," by Theophilus Parvin; "Wet-Nurses," by Wm. H. Parish; "Diet after Weaning," by S. S. Adams; "Nursing of Sick Children," by Miss Catherine Wood; "Nursery Hygiene," by L. M. Yale; "Dentition," by John Dorning; "Puberty," by Thos. More Madden.

Part II. *Fevers and Miasmatic Diseases.* Dr. J. C. Wilson, of Philadelphia, writes an article of about sixty pages on "Enteric Fever," in which he gives a thorough résumé of the most recent studies in the etiology and pathology of this disease. The symptoms are analyzed with special reference to the course of the disease in childhood, and are illustrated by several temperature charts. He insists on the disinfection of the stools, but in the light of recent views it is unfortunate that he should recommend so highly corrosive sublimate for this purpose.

Passing by "Typhus Fever," by Alexander Collie, and "Relapsing Fever," by R. G. Curtin, we come to "Cerebro-Spinal Fever," written by J. Lewis Smith, about the excellence of which it is, therefore, unnecessary to speak, as he is the well-recognized authority on this subject. The other article, by Dr. Smith, in this volume is on the very important subject of "Diphtheria," to which nearly one hundred pages are devoted, and it is discussed with the thoroughness that its importance demands. After a detailed account of the various views on the etiology of this disease, Dr. Smith says that the theory, which is gaining acceptance throughout the world, is that "diphtheria is produced by a microbe or microbes, whose action is chiefly on the surface or at no great depth," and that blood poisoning occurs mainly from a ptomaine or ptomaines produced by microbic agency; but, he adds on page 605, that clinical observations lend support to the theory that diphtheria is, in some cases, systemic from its commencement, and he will be the most successful practitioner who fully recognizes the fact that he has to deal with a malady which has both a local and a systemic character. The treatment is discussed in a most satisfactory manner.

The subject of "Measles" is rather briefly discussed in eight pages by Waxham, of Chicago; while "Rubella or Rötheln" is presented in a paper of eighteen pages by Wm. A. Edwards. It is a curious fact that writers on this subject who believe in the specificity of rötheln generally take such decided partisan views, and, as in political and religious discussions, endeavor to cast contempt on the other side. When the other side, as Dr. Edwards admits in a foot-note, is represented by such a man as Henoch, it seems rather presumptuous to state that the subject is definitely settled. A careful review of the parallel columns on page 699, for the differential diagnosis of rötheln from measles, leaves one with the impression that where there are any differences at all, the characteristics of the two diseases differ only in degree.

The article on "Pertussis" is written by T. M. Dolan, whose Fothergillian Prize Essay on this subject is well known. The present article is, however, very incomplete and unsatisfactory. For example, almost nothing is said of diagnosis, and under the head of prognosis nothing is said about the influence of broncho-pneumonia and other complications. In fact, broncho-pneumonia is not mentioned by him, unless he intends to do so under the head of capillary bronchitis, which he speaks of only among the morbid changes. But little is said of modern antiseptic treatment, and nasal insufflations are not even named.

With great pleasure we turn to the article on "Rheumatism," treated by W. B. Cheadle, in forty pages, in a most thorough and scholarly manner, as the subject requires; for, as he shows, acute rheumatism in the child and acute rheumatism in the adult are very different in their manifestations. The relations of this disease with chorea are very fully discussed, and the author's extended and careful observations on the subject are given. The important subject of treatment is also most satisfactory.

Limited space alone forbids us to consider the remaining articles, most of which are excellent, and to name them is all that can be done here: "Fever," by Wm. Pasteur; "Scarlet Fever," by S. C. Busey; "Variola," by A. D. Blackader; "Vaccination," by W. T. Plant; "Varicella," by C. G. Jennings; "Parotitis," by O. P. Rex; "Erysipelas," by J. O. Hirschfelder; "Malaria," by F. Forchheimer; "Yellow Fever," by J. Guitéras; "Dengue," by R. Matas; "Cholera Infectiosa," by E. O. Shakespeare; "Joined Twins," by W. W. Jaggard; "Embryology," by H. Jayne; "The General Therapeutics of Children's Diseases," by Roberts Bartholow.

The work as a whole, as shown by this first volume, is certainly most satisfactory, and its value to practising physicians cannot be estimated. C. W. T.

Transactions of the American Orthopedic Association. Vol. I. Published by the Association. 1889.

This neat volume, of which 500 copies alone have been printed, contains the Constitution and By-Laws of the American Orthopedic Association, a list of its members, an account of the preliminary meeting and the transactions of the first and second annual meetings.

To the general surgeon this work is one of great interest. The reclamation of orthopedics from the hands of quacks and instruments makers has been of such recent origin, that one is apt to look at orthopedic surgery as rather an unnecessary specialty, but the present initial volume of the Association's transactions, cannot but fill us with hope that this important branch of surgery is permanently reclaimed from the opprobrium in which it rested.

Such work as the "Treatment of Club-Foot," by E. H. Bradford; "Observations of Seventy-five Cases of Flat-Foot," by Royal Whitman; Etiology and Pathology of Rhacitic Deformity," by Charles N. Dixon Jones; "Deformities of the Tarsus in Congenital Equino-varus," by N. M. Shaffer; "Osteotomy for Anterior Curvatures of the Leg," by De Forest Willard; "An Experimental Study of Fixation and Traction in the Treatment of Hip Disease, with the Description of a Splint," by Robert W. Lovett, — show that the work done by this Society is of great value.

The advances which are being made in this branch of surgery are, we believe, not appreciated by the surgical profession at large. The general practitioner and surgeon have too often regarded orthopedic cases as chronic and incurable, and in the busy whirl of life have passed them by with scarcely an effort to save them from permanent crippledom. No broader field of work can be given a man than that of re-establishing the working capacity of his fellow man.

The restoration to usefulness of flat-feet, the abolishment of club-foot, the saving from permanent deformity of caries of the spine and the restoration of patients with diseased joints to health and usefulness, is a work which not alone concerns humanity, but the common weal.

We regret to say that a proneness to expressions of personal opinion, rather than to the presentations of facts, mars the volume. This is perhaps pardonable, in that it presents the personal opinions of the members of the Society, but it is more in accord with a scientific spirit to deal with principles and not with opinions.

Let the work of this Association continue at its present high standard, and the recognition of its importance is inevitable.

A Treatise on Surgery; its Principles and Practice. By T. Holmes, M.A., Cantab, Consulting Surgeon to St. George's Hospital, etc. With 428 Illustrations. Fifth Edition. Edited by T. Pickering Pick. Philadelphia: Lea Bros. & Co. 1889.

This work, which is practically an introduction to the author's more elaborate "System of Surgery," has reached its fifth edition, which shows that a demand exists.

In the original edition the author states that it is an exposition especially of British surgery; this leaven, we find, has clung to it through its various editions. It would seem, however, that "A Treatise on Surgery; its Principles and Practice," should have a broader field to draw from than that of British surgery. It is an admirable work in many respects, but much of the apparatus figured is antiquated and has long since been superseded by simpler and more effective forms of apparatus. Again, the methods of operating are neither complete in number nor sufficiently detailed to be of value; this is notably the instance in the radical cure of hernia.

Laryngology and otology have assumed so definite a position as specialties that it is unwise perhaps to devote any space to them in a treatise on surgery, but, if they are considered, it would seem that at least more than eleven pages should be assigned to the subject of diseases of the ear. We cannot see that this work excels any of the systematic treatises in the market. It is well-printed and beautifully bound.

The Story of the Bacteria and their Relations to Health and Disease. By T. Mitchell Prudden, M.D., New York and London: G. P. Putnam's Sons. 1889.

This little volume, in the compass of 138 pages, sets forth for the instruction of the lay reader, who it may be supposed is likely to become somewhat alarmed at what he gleans from the magazines and newspapers as to the abundance and the evil potentialities of the microbe and the bacillus, the facts in the case. The writer takes the ground that while the knowledge of the existence of such organisms may disquiet the unscientific by seeming to show nature to be "less men's friend" than would otherwise be thought, yet that the public may well be taught enough about the bacteria to enable an intelligent avoidance of the unsanitary conditions which foster their growth. The specific microörganisms of disease, so far as known, are separately described, with an account of the circumstances favorable and unfavorable to each. The material of the book is well considered, and the language is clear and free of technicalities.

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FREQUENCY OF ALBUMINURIA IN THE SICK AND THE AGED.

Lecorché and Salamon have compiled some statistics showing the frequency of albuminuria in diseases other than Bright's disease, and in old people.

At the hospital Broussais, in 1886, they sought for albuminuria in the urine of 350 patients, male and female. In most of these patients the urine was analyzed many times during their stay in the hospital. The reagents employed were heat and acetic acid, nitric and picric acids and Millard's test.

Out of these 350 patients there were 184 (52.5%) who were albuminuric. These patients were divided into four categories:

(1) The tuberculous, 97 in number; albuminuria was noted in 45 (46.3%).

(2) Patients suffering from cardio-vascular affections, that is, organic lesions of the heart or generalized atheroma, or cerebral atheroma with hemiplegia. The number of patients in this category was 81, of whom 48 were past the age of sixty; 53 were albuminuric (65.4%).

(3) Patients with slight affections, such as fibricula, rheumatoid pains, neuralgia, dyspepsia, varices, hysteria, anæmia. The whole number included in this class was 106, of whom 35 had albumen in trifling quantity in the urine (33.3%).

(4) In a last category, they grouped, on the one hand, acute febrile diseases, — pneumonia, typhoid fever, acute rheumatism, erysipelas, in which albuminuria is constant; and, on the other, divers apyretic or chronic medullary, hepatic, pulmonary and other affections. The whole number was 66, of which 38 were acute diseases, and attended with albuminuria. Of the 28 apyretic cases, albumen was noted in the urine of 13 (46.4%).

To determine the frequency of albumen in the urine of the aged, they availed themselves of observations made in the hospital (Ivry, service of Ollivier). The tests employed were heat and nitric acid. They grouped these cases in three classes, according to the age of the subjects; from sixty to seventy years, from seventy to eighty years, and from eighty to ninety years.

In the first class (between sixty and seventy) there were 56 patients; 27 were albuminuric (48%) and 29 non-albuminuric. The diseases from which these patients were suffering were: biliary lithiasis, acute aortitis, chronic bronchitis, mitral insufficiency, cerebral ramolissement, pericarditis, pneumonia, cerebral hæmorrhage, paralysis agitans, multilocular sclerosis, chronic bronchitis with emphysema, aortic insufficiency, chronic rheumatism, cancer of the stomach, locomotor ataxia, hemiplegia, etc.

In the second class (between seventy and eighty), there were 80 patients; 48 of these were albuminuric (60%). Diseases were much the same as those above given, general atheromatous and cerebral affections predominating.

In the third class (between eighty and ninety), there were 21 patients; 15 of these were albuminuric (71%). Predominant diseases: cardiac, arterial, cerebral.

Thus, out of a total of 157 subjects, male and female, aged from sixty to ninety years, in 90, or 57%, the urine was found to coagulate under heat and nitric acid. Of the above 157 cases, 73 had died prior to the publication of the statistics, and the autopsy gave an opportunity to note the state of the kidneys. Of these 73 subjects, 56 had albumen in the urine during life; 17 were exempt from albuminuria. In the 56 patients who had had albumen in the urine, there were found:

Atrophied, granular, cystic kidneys	18
Atrophied kidneys with smooth surface, red or yellowish,	19
Kidneys of normal volume, but granular	2
Kidneys of normal volume, with infarctus	2
Kidneys of normal volume, mottled or yellowish . .	3
Kidneys of normal volume, congested	12
	56

In 12 cases only the albumen was due to simple renal congestion, the structure of the kidney appearing normal to the naked eye. In all the other cases there existed lesions appreciable at first sight, and in 37 the kidneys were atrophied, their weight not exceeding four ounces.

Of the seventeen autopsies of subjects whose urine had been free from albumen during life, in six, or nearly one-third, the kidneys were found atrophied, as the following table shows:

Kidneys of normal volume, with smooth surface . .	11
Kidneys with smooth surface, but atrophied . . .	5
Kidneys red, atrophied, and granular	1
	17

From the above statistics it will be seen that the number of cases in old people affected with chronic diseases, in which the kidneys are seriously impaired structurally, and more or less functionally insufficient, is considerable. In these patients, an acute malady of almost any kind which suddenly blocks the renal filter with waste material is often speedily fatal.

THE CHICAGO WATER-SUPPLY AND DRAINAGE DISTRICT.

Chicago, her citizens wish to believe, and especially at this period of competition for the Exhibition of 1892, perhaps has the best drinking water of any city in the world, if only her sewage can be prevented from flowing into the lake and out to the crib, where the water is taken into the tunnel that flows under the bed of the lake to the city. For a number of years suspicion has been rife that at certain times the sewage water from the city did reach the crib to contaminate the water-supply. Probably through the last ten years there has been no considerable contamination of the water-supply in this way during ten months of each. During two months of each year, however, there is some reason to think the water has been contaminated in this way, and the freshet of last summer undoubtedly carried the river water with all its filth out as far as the crib, or farther.

The prevention of the contamination referred to, involves the necessity of disposing of the sewage in some other way than by allowing it to flow into the lake. Long ago it was discovered that the river water could be made to flow upward and out into the Illinois Canal, and down into the Illinois River and so on into the Gulf of Mexico, provided the canal was deepened along the elevated ground back of the city. That was attempted a quarter of a century ago, and a current actually flowed in this direction, but it was too insignificant to carry off the river water or very much of the sewage. Within a few years this resource has been enhanced by powerful pumping engines that lift the water into the canal so that a larger quantity is gotten rid of in this direction. In times of drought this will even prevent the flow of the water into the lake to any great extent, and so prevent the sewage from extending out into the crib, but every freshet casts into the river such a volume of water that the canal cannot take care of it, and it must flow out into Lake Michigan.

How to prevent this has been the problem. It would require some millions of dollars to widen and deepen the canal so as to make it certain that even in dry weather no sewage should flow into the lake. It has been found that, if the flood water from the districts back of Chicago, which now flow into the river, could be diverted through artificial channels from the river and into the lake direct, the flooding of the river in the city in times of freshet might be prevented almost completely. The State Legislature at its last session provided a means whereby the city of Chicago, and the districts referred to, might be organized into a "Drainage District" for the purpose of raising money to divert the flood water, and to deepen the canal to take care of the ordinary flow of sewage — polluted river water. Whether such a district should be organized was submitted to a popular vote at the election of the 5th inst. The proposition was adopted by an overwhelming majority. Its adoption by the people makes it possible to prevent in the future the discharge of any considerable quantity of sewage into Lake Michigan. The sewage would be made to flow in the other direction, over into the Illinois River, down into the Mississippi, and on to the Gulf, and the drinking-water of Chicago would be secured against any possibility of infection from these sources.

A new tunnel is being built, and a new crib, much farther out into the Lake than the old crib; and this, when completed, should make the Chicago water supply, not only for purity, but for abundance, as well as for certainty against accidents, all that could be desired.

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MEDICAL NOTES.

— Quite a number of the patients of the Indianapolis Insane Asylum were recently taken to the theatre. They behaved with perfect propriety, enjoyed the comedy, discussed the situations of the play with intelligence, and asked to be taken again.

— Sir Morell Mackenzie has been vindicated by the Royal College of Surgeons. Though condemned by the Council of the College for publishing his book concerning Emperor Frederick, he had but one accuser at the general meeting.

— Before the Medical Jurisprudence Society, of Philadelphia, Dr. John J. Reese recently read a paper against the indiscriminate embalming indulged in by the undertakers, in cases where death is suspicious and the Commonwealth desires a post-mortem examination.

— The Southern Surgical and Gynecological Association held its annual session in the Senate Chamber of the Capitol, at Nashville, November 12th, 13th and 14th. The address of welcome was delivered Tuesday morning, at ten o'clock, after which President Hunter McGuire, of Richmond, delivered his annual address.

— President Adams, of Cornell University, in his yearly report just issued, points out the advantage of having medical schools connected with universities, rather than standing by themselves as private enterprises. He asks why the college of medicine cannot become a department of the university in this country, and ventures the opinion that if all the students admitted to a medical college were required to have such a preliminary outfit as is prescribed at the four years' course at Cornell, the course in medicine could probably be well given in two years, of nine months each, while a third year might be devoted to clinical work in the hospitals.

— The annual report of Surgeon-General Browne to the Secretary of the Navy shows that, in addition to the eleven vacancies existing in the Medical Corps in October, 1888, six more occurred during the year — four by death and two by retirement. The transferring of the Medical Examining Board from Philadelphia to New York and the establishment of another Board at Mare Island has been attended with gratifying results, without lowering the standard of proficiency in the examination. A greater number of candidates have presented themselves, and twelve have passed the examination. At present there are eight vacancies in the corps, and there is reason to believe that they will soon be filled.

— Any hopes which absinthe-drinkers might have cherished from the paper of Dr. Cadeac recently presented at the Paris Academy of Medicine, which took the ground that the deleterious effects so well-known were due to other substances (notably anise) mixed with the absinthe in the popular drink, and not of the absinthe itself, must have been chilled by the experiments of Dr Laborde, before the same body, as reported. He injected one fluid gramme of extract of absinthe into the veins of a guinea-pig, and in five minutes the creature was seized with epileptiform convulsions, in which it continued until it died in forty minutes. Into another guinea-pig was injected in exactly the same way, one fluid gramme of extract of anise, which was almost without effect, but made the animal dull and sleepy. Three fluid grammes of the same substance produced a condition of deep somnolence, in which the demonstrator said that the animal would die in twenty-four hours, but there was no convulsions. Dr. Laborde, gave a short account of the various qualities of absinthe, and said that the pure and strong, as made in France, was "*presque foudroyant*" — that ordinary drinkers of absinthe owed their lives every day to the fact that the absinthe sold them was of poor quality, and that the soldiers could drink enormous quantities in Africa, because the Algerian absinthe was of a very feeble sort.

— A writer in the *New York Herald* says of the late French general Faidherbe, one of that small number of French general officers who in the last war between France and Germany won a battle and came out with a fair measure of fame, that he had in his day been a member of a mutual autopsy society, and as such had made a contract by the mere fact of membership that his body should be delivered at his death for post-mortem inquiry. And, therefore, while all others were filled with lamentation forth came M. Laborde and claimed the body of the dead general. This was the first that Mme. Faidherbe had ever heard of the existence of the society or of the general's relation to it, and she was shocked at the suggestion, and objected vigorously. As the surgeon possessed all the manly and gentle sentiments of his craft, he yielded the question of right to the natural sensibilities of the bereaved lady, and so the general was buried in debt to the society. There is some scientific reason to regret that the autopsy was not made. General Faidherbe had locomotor ataxy, and had been a victim of the malady for forty years, Dr. Charcot says that the malady has never before been observed in one person for so long a time. The observation of the conditions that had arrested the progress of the disease might have been of benefit to humanity.

— A Chicago paper describes a new "System" of medicine, which seems to surpass in simplicity all other "schools" of practice. The essential feature "consists of a figure of a man made of metal, divided internally into compartments representing the heart, lungs, liver, stomach, throat, etc. In each of these is a drawer opening outward, in which there is an approved remedy for the diseases of the organ. The drawer can be opened by pushing a coin into a slot situated where the keyhole ordinarily is. The packages of pills or powders will contain full directions in regard to their use. It is proposed to set up one of these combined doctors and druggists in every public square, at the principal street crossings and at all railway stations. In country places one of these automatic medicine dispensers will stand near each postoffice, church and other public buildings. A resident or traveller, being suddenly afflicted with the toothache, pushes a dime or sixpence into a slot, opens the drawer leading into the mouth, takes out a powder, swallows it and is at once relieved of pain. Corn plasters are taken out of the foot and porous plasters from the back. In a drawer in the forehead are remedies for various kinds of headaches. It is not necessary for a person to know how to read in order to enable him to prescribe for himself. If he knows "where he feels sick" he will know where to find a remedy for his complaint. In cities where many languages are spoken this representation of a man will be very convenient, as it will render the services of an interpreter unnecessary. It will be as easy to obtain medicine from this automatic machine as it is water from the town pump. A competent person will take charge of them, refill the drawers and collect the money deposited every day." The chronicler of this discovery describes it to be a philanthropic Dutchman; but we suspect that it is but another evidence of the commercial supremacy of the great city of the Lakes.

—A correspondent of the *Medical Press and Circular* having written in a despairing mood that he had mistaken his profession, to attain success in which either "money or a bald head" was an essential condition; that paper replies:

"It is, no doubt, very much to the advantage of a young practitioner to exhibit a 'modern antique' appearance, and nothing contributes so greatly to this end as a head which is innocent of hair. There is a real commercial value in a bald head, but this value is by no means confined to the medical profession. Whatever advantages, however, it may confer on a 'business young man,' to a medical man a fair estimate under favorable circumstances would be, at the lowest, five hundred a year. The assumption of age and ripe philosophy which a man can safely indulge in whose hair follicles upon the top of his head have in early manhood undergone a process of fatty degeneration, leaving a white expanse of reflecting integument, is a matter of common observation. The public are impressed by the appearance of things under these circumstances; a bald head will carry conviction to their minds when nothing else will — saving, perhaps, a flowing beard.

"Even the lower animals are not insensible to its attractions. It is recorded that an ostrich once sat down upon the bald head of an Englishman, under the impression that it was an egg which required hatching. The circumstances were favorable to this slight error of judgment, and the sagacious bird must be acquitted of having purposely attempted to play a practical joke. But in this matter, as in all things else in life, appearances are everything. No one knows better the value of a bald head than he who possesses it: at all events in medicine; but how strangely captious is nature, for while one man, greatly to his worldly prosperity, conveniently finds his head becoming bald, another has to seek consolation where he can under the depressing circumstances of knowing that his head is the only place upon which he cannot get hair to grow."

BOSTON AND NEW ENGLAND.

— A boy at the North End who has varioloid was removed to the Canterbury-street Hospital November 18. This case is directly traceable to the others which were recently found in the district named.

— Under the will of the late Moses Wildes, the Massachusetts General Hospital receives, after a life-interest expires, the sum of $20,000. The same testator leaves, subject also to a life-interest to a kinsman, the sum of $6,000 each to the Home for Aged Women, and the Doane Fund for Sick Nurses, and $2,000 to the Little Wanderers' Home.

— A conference in the interest of physical training is to be held at Huntington Hall, Massachusetts Institute of Technology, Boston, on Friday and Saturday, November 29 and 30. There will be two sessions of the conference daily, from ten to one, and from three to five o'clock. The object of this conference is to place before educators different systems of gymnastics and to secure discussion of the same, with a view to ascertaining the needs of schools and determining how they may best be met. The conference will be presided over by Dr. William T. Harris, United States Commissioner of Education. Papers will be presented, accompanied in some cases with illustrations of class work by Edward Hitchcock, M.D., of Amherst College; Edward E. Hartwell, M.D., Ph.D., of Johns Hopkins University; D. A. Sargent, M.D., of Harvard University; H. D. Wey, M.D.. of New York State Reformatory, Elmira; Hobart Moore, of Boston Public Schools; Henrich Metzner, of New York German Turnverein; C. W. Emerson, M.D., of Monroe College of Oratory; Nils Posse, M.G., of Boston School of Gymnastics. A number of prominent physicians and educators are expected to take part in the discussions.

— A Boston paper says that one of the curiosities of medical advertising came to light in a pamphlet recently distributed in our vicinity. A letter from a gentleman is published, giving an account of his remarkable cure by Dr. ——. On the margin of the page is printed in red letters: "Mr. W. cannot be referred to, having died since this book was published."

— The Maine State Board of Health have issued a circular on the prevention of consumption, pointing out the dangers of tubercular transmission in the light of recent research and experiment.

— The Twenty-sixth Annual Report of the Board of Trustees of the Rhode Island Hospital Corporation, just presented, shows that the number of patients in the hospital wards, September 30, 1888, was 69. The number admitted between that day and September 30, 1889, was 902. The number in the hospital, September 30, 1889, was 57. The greatest number in the hospital on any one day of the past year was 95, the smallest number, 52. The highest monthly average is that of March, 1889, 89.32; the smallest, that of September, 1889, 65.33.

The statistics of the Training School for Nurses are:

September 30, 1888, number in the school	19
September 30, 1888, to September 30, 1889, admitted	16
Graduated	7
Left from bad health	4
Left for other reasons	4
Remaining in school	20

The expenditures of the hospital are:

Amount paid out by the Treasurer	$8,962 13
Amount paid out by the Superintendent	39,462 06
Total	$48,424 19
Showing the expenses to have exceeded the income by the sum of	$4,556 95

To meet this deficiency 58 guarantors have pledged themselves for 73 shares each for one one-hundredth part, or $45.57 per share, amounting to $3,326.61, leaving the sum of $1,230.34 to be charged to the deficiency account.

NEW YORK.

—A new home for aged and indigent women, called the Isabella Heimath, has just been completed, at 190th Street, New York, and dedicated to its use. Mr. Oswald Ottendorfer gave $600,000 to its construction.

— At the meeting of the Medico-Legal Society of New York, November 20, 1889, the following papers were read: "The Pathology of Death by Electricity," by P. E. Donlin, M.D., of New York; "Life-Insurance," by Daniel Jordan, Esq., of New Brunswick.

— The Executive Committee of the New York Post-Graduate Medical School and Hospital have established a clinic for diseases of the rectum, to be under the care of Dr. Charles B. Kelsey, for the treatment of poor persons suffering from these diseases. Dr. Kelsey will also give clinical instruction in the Post-Graduate School on this subject.

Miscellany.

SULPHUR LOZENGE.

Sir Alfred B. Garrod, in an interesting paper (*Lancet*, Vol. 1, 1889, page 665, and *Practitioner*, September 1889), records his experience of the administration of sulphur in very small doses and for a lengthened period of time in the treatment of disorders of the alimentary canal and liver; also in certain diseases of joints, especially rheumatoid arthritis; and, lastly, in chronic muscular rheumatism and skin diseases. The form selected by him for the exhibition of the drug is a lozenge containing five grains of the milk of sulphur and one grain of cream of tartar. This lozenge is far from disagreeable, the cream of tartar giving it a pleasant acidulous taste; and it contains enough sulphur for therapeutic purposes. Sir Alfred claims that the stomach itself is probably little influenced by the sulphur, as the surface and contents of that organ are usually acid in reaction, and possess no solvent power; but that when it arrives in the duodenum, and meets with a different condition of the mucous membrane and the presence of bile and pancreatic fluid, both of alkaline reaction, more or less of it becomes converted into a soluble sulphide, which is absorbed by the portal vessels. The presence of the cream of tartar in the lozenge helps to prevent the formation of any soluble sulphide in the stomach, and hence the absence of sulphurous eructations. Sir Alfred Garrod finds that even this small quantity of sulphur usually produces appreciable laxative effects, and patients can be readily induced to persevere in using the lozenges for an almost indefinite time. Sulphur given in the form just described exercises a markedly beneficial effect in many morbid states of the alimentary canal and liver, such as hepatic sluggishness, piles, and hæmorrhoidal bleeding; besides which the continuous use of the lozenge is often quite effectual in obviating habitual constipation without being attended by the unpleasant action often pertaining to ordinary aperient medicine. Much benefit was also derived from the continued use of the small doses of sulphur in chronic forms of rheumatoid arthritis and gout, and in many cases of muscular rheumatism.

THE CITY OF SANITAS.

Its walls of tiles enamelled
Shine in the sun's bright sheen,
And the broad, deep moat about them
O'erflows with listerine.

When the approaching traveller
Draws near the city's gate,
A sanitary picket
Demands his purpose straight;
And if he fain would enter
That city in its pride,
He must first be stripped and ducked
In kreolin germicide.

They 'll shave his head and body,
Ere the inner gate they ope,
Using freely of a lather
Made from strong carbolic soap;
While the razor used to further
Their depilatory zeal
Has been sterilized by heating,
Till it fairly makes him squeal;
And by aid of hose and stopcocks,
And tubes appropriate,
They wash out all his cavities
With corrosive sublimate.

This done, he passes onward
To a laboratory near,
Where he 's carefully inspected
By a microscopic seer.

When this critical inspection
Is eventually passed,
They ope' the inner gateway,
And let him in at last.

Clad in a shirt aseptic
Of asbestos silicate,
And outer germ-proof tunic
In triple nickel-plate,
He treads the polished surface
Of the broad and cleanly street,
Which sterilized char-women
With naphthaline keep sweet.

High overhead an awning
Of antiseptic gauze
Strains the outer air of microbes
Who'd violate the laws;
And at nearly every corner,
With microscope at eye,
Biological policemen
For errant germs do spy.

O pure, aseptic city,
Where microbes never stray!
Where curled or straight bacilli
Are never asked to stay!
I know not — oh, I know not
What health awaits me there!
What freedom from contagion!
What purity of air!
There could one live forever,
Free from insidious worms,
And never know the horror
Of a world too full of germs.

C. F. C.

ICE IN THE NIGHT SWEATS OF PHTHISIS.

Rosenbach (*Pr. Med. Wochschr.*) recommends for arresting the night sweats, which so enfeeble the phthisical, applications over the abdomen of a bladder half-full of ice, and to let it remain several hours. The patients tolerate it very well, even when they present an evening elevation of temperature. This means succeeds where atropine has failed, as well as powdered salicylate of soda sprinkled over the entire body.

RECURRENCE OF CANCER OF THE BREAST AFTER AMPUTATION.

From microscopic examinations of carcinomatous mammæ amputated by Professor Küster, according to the *Lancet*, Dr. Heidenhain predicted a return of the cancer in twelve cases, because parts of the morbid growth had remained in the wound. In the other cases he diagnosticated a radical cure, which diagnosis had proved correct up to the date of the publication of his paper, because the operation had removed the whole of the morbid growth. The usual cause of the recurrence is that only microscopic parts of the gland or the tumor remain on the surface of the pectoralis major. In thin women the whole mamma is firmly attached to the muscle, but in obese subjects small glandular lobules are generally attached to the fascia between the mammæ and the muscle, so that in amputation above the muscle small particles of the gland may easily be left. Every mamma in which a single cancer node is found, according to Heidenhain, is largely, perhaps *in toto*, diseased. He found the epithelial cells of the acini proliferating in all parts of the mamma, and observed hypertrophy of the periacinous connective tissue, and he believes that these acini remaining in the wound form the origin of late secondary growths. In the retro-mammary fat there are, side by side with the blood-vessels, lymphatics leading from the mamma to the subjacent fascia, and the latter were, in two-thirds of the cases, full of metastatic cancerous masses. The pectoralis major itself is only affected when a metastatic cancer-node invades the muscle from the fascia, or the original tumor attacks it by its own simple growth. Heidenhain concludes that, to make amputation of the mamma more successful, it is necessary, even in freely movable carcinomata, not only to remove the whole mamma, but also a superficial layer from the whole of the pectoralis major, and, in tumors which are closely connected with the muscle, to entirely extirpate the latter.

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THE STING OF THE JELLY-FISH.

Dr. B. W. Richardson writes on the above subject in the last number of the *Asclepiad*, giving a personal experience of his own. He says:

"In my case I was caught by the shoulders and chest in the tentacles of a large medusa, and had really for a minute or two a difficulty in freeing myself. The surface of the skin touched by the tentacles began to smart at once, and by the time I was out of the water and partly dressed, the skin was covered, over the surface attacked, with a bright erythema, accompanied with a sense of extreme heat and irritation. The sensation was much the same as that brought on by the application of a mustard poultice, except that it was not so uniformly diffused, but was rather in the form of wheals in slightly raised lines, with a considerable number of points at which the tingling and heat were most severe. Unfortunately, I had no clinical thermometer by me with which to take the local temperature, but judging by the touch of the hand the local temperature was raised at least two or three degrees. The redness and irritation lasted seven hours, and did not absolutely subside until after a night's rest; but during the time it was on in the acute form, it was soothed considerably by the application of water, rendered alkaline by common washing soda in the proportion of an ounce of the soda to about two quarts of water.

"A friend of the writer suffered far more severely. He was bathing where a number of jelly-fish were present, and got so entangled amongst them, that, as he said, he was 'stung over almost all the surface of his body.' He suffered from an acute erythematous eruption which lasted over sixteen hours, attended with two degrees of general fever, and followed by malaise that lasted three days.

"A still more important case happened in a very singular manner, to another friend and patient. I had gone down to a bathing-place in the summer of 1872, not knowing that my friend was there. I had not been on the spot two hours when a messenger came to me asking if I would go, *at once*, to Mr. G., the friend in question, because he had been 'stung in the throat by a jelly-fish, and they were afraid he would not live.' On reaching my friend — who had accidently heard I was near to him — I learned that about two hours before, while he had been floating on his back in the sea, with his mouth open, the tentacles of a jelly-fish swept into his mouth and stung him severely in the back of the throat. There could be no doubt about the mischief, for the throat over the whole of the pharynx was intensely red, and the surface was rough and raised. With this condition there was considerable heat and irritation, amounting to acute pain, and attended with inability to swallow anything except fluids cooled with iced water. The idea of extreme danger was present in the mind of the sufferer, and I believe my firm assurance that he would take no harm contributed as much to the recovery that succeeded, as the simple alkaline remedies which formed the chief part of the medical treatment. In this case also there was a rise of two degrees of temperature, and, during convalescence, there was marked depression of both mind and body for a period of two or three days.

"In describing these phenomena," he adds, "I have used the ordinary word 'sting' for the want of one more accurate. Really, I do not know whether it is a sting, like that of a wasp or a nettle, that is inflicted, or whether a secretion, acrid in kind, is thrown upon the surface and acts directly as an irritant fluid. On the whole I suspect it is a fluid, an organic acid, which is the cause of the irritation. For the resultant erythema local alkaline treatment is particularly effective. In the throat case, bicarbonate of soda with mel boracis proved very grateful and useful."

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THYROIDECTOMY AND THYROID TRANSPLANTATION.

Goitre is such a rare disease in the United States that the subject of its operative treatment is of but little practical importance for most American readers. Nevertheless, the results obtained are so mysterious that perhaps a few words concerning them, as at present illustrated in the wards of Professor Theodor Kocher, of the University of Berne, and as contained in the *Therapeutic Gazette* for September, may not be devoid of interest. As is well-known in the great majority of cases, myxœdematous diseases after a time follow the complete removal of the gland. This Professor Kocher has found may be avoided by leaving in the neck one lobe, or even part of a lobe, of the gland.

A very bold experimental operation for the relief of the myxœdema, which has followed complete removal of the gland, is now under trial, says the *Gazette*. "It consists in inserting a fresh healthy piece of the gland in the abdominal cavity, with the hope that it may form attachments and perform its mysterious function. In one case, probably by pressure upon the large intestines, the inserted mass, after the complete healing of the wound, caused such violent colicky attacks that it had to be removed, but in most instances no evil effects have followed the insertion. What becomes of the transplanted gland is not yet known. A case was recently shown that had been operated upon about three months previously, in which the presence of the gland in the abdomen could apparently be still demonstrated by palpation, etc., and in which the patient asserted his general condition was much better than before the abdominal section. It will be a very strange physiological fact if it should be found that the transplanted gland has the power of taking root and adapting itself to its new environment. It is, perhaps allowable to add that the glandular masses for transplantation have been taken from the necks of individuals with hypertrophied thyroids."

A NEW ANTISEPTIC DRESSING.

Sir Joseph Lister, in an address delivered before the Medical Society of London, November 4th, advocates a new substance as the antiseptic factor in surgical dressings. He premises, by referring to the difficulty in the use of corrosive sublimate, that it precipitates albumen, being not that the precipitate is, as had been generally supposed, an albuminate of mercury, that is to say, a combination of albumen as an acid with mercury as a base; in other words, that the albumen does not displace the chloride from its combination, but that the bichloride of mercury retains its properties intact, the albumen being loosely associated with it, in a species of solid solution, so to speak.

Various other substances were studied, notably salalembroth (the double salt of bichloride of mercury and chloride of ammonia), the biniodide of mercury, and finally the double cyanide of mercury and zinc. The double cyanide requires about 3,000 parts of blood serum to dissolve it. If, therefore, it is present in a gauze in the proportion of about three per cent., blood serum may soak through such a gauze time after time without washing the ingredient all out; so that it is a material which is admirably stored up in the dressing. That is one of its three great advantages, the others being that while trustworthy as an antiseptic it is completely unirritating. In actual practice the few layers placed next to the wound are washed in a solution of carbolic acid; this washes out the corrosive sublimate, which, though present in small amount, might irritate the wound to some extent. The carbolic acid soon flies off, and there is left in the application next the wound merely the unirritating double cyanide, and under this it is found "not only do wounds, the edges of which are brought accurately together, unite beautifully by first intention, but even granulating sores heal by the gradual process of cicatrization from the edges — heal by scabbing in a way that we have never seen under any other dressing."

As to the composition of this so-called double salt, it is for the present uncertain. This much is already established: that the cyanide of mercury is in very much smaller proportion to the cyanide of zinc than theoretical chemical considerations would lead us to expect the double salt would give. But what the precise composition of the salt is we do not yet know. It is now being investigated by the Pharmaceutical Society, who have undertaken the work.

DEATH DURING ANÆSTHESIA WITH CHLOROFORM.

Dr. W. L. Mussey, reports to the *Cincinnati Lancet-Clinic*, October 12th, another of the too frequent cases of death from chloroform. The patient, had received an injury to his right thumb. The injury was caused by a falling box, and consisted in a cut on both sides of the thumb in its long axis lateral aspect, extending to about the centre of the proximal phalanx. The distal phalanx had been forced through the skin at a point just posterior to the nail, which, with the muscles on the palmar surface of the thumb, lay below it.

The patient, a man of apparently thirty years of age, well developed and nourished and of medium height, was extremely nervous and excited; so much so, in fact, that no examination could be made, for on merely attempting to wash away the blood he nearly fainted and asked for an anæsthetic. Chloroform was administered, and the ordinary, well-known inhaler was the one employed. An examination of the man's heart and pulse showed a slight indistinctness of the first sound at the apex; the pulse was full and regular. The chloroform was in an ordinary four-ounce bottle, the cork of which had been cut, so that the fluid escaped only drop by drop. At first the patient took the anæsthetic very easily, respirations being full, deep and regular. He soon began to struggle to a slight extent, which was followed by a quiet period, to be followed in its turn by marked struggling, ending in a sort of tetanic spasm, with opisthotonos, and then collapse. During most of the tetanic spasm above referred to the inhaler had been entirely removed from the patient. It was then noticed that the patient was not breathing. Immediately the shoulders and body were brought over the side of the bed, lower than the hips and the head lower than the shoulders, and artificial respiration was practiced. Hypodermic injections of whiskey were given in the arm and over the region of the heart. There was at this time no radial pulse. Artificial respiration was continued for about an hour, but with no further result. The only signs of life during all this time were the few gasping expirations at the beginning and the fancied heart beat.

The greatest caution was observed in administering the chloroform, of which not more than a drachm was employed, the inhaler not being over the man's face more than three minutes. It developed during the course of the inquest that the deceased had never complained of any heart trouble during his life time, but had always been strong and well. The verdict of the coroner was death from paralysis of the heart.

DELIRIUM FOLLOWING A DOSE OF SULPHONAL.

Mr. George Foy, reports in the *Medical Press*, September 11th, a case of delirium following sulphonal. He says:

"Few hypnotics so quickly gained professional favor as sulphonal. Until the present I have had nothing to say of its effects but such as were favorable. In enteric fever, bronchitis, delirium tremens, the insomnia of over-mental activity, and so forth, I have used it with marked benefit and found the sleep it produced refreshing, and that it had none of the unpleasant after-effects of opium or chloral, consequently I prescribed it freely. In July of this year I prescribed twenty-five grains to a young woman aged nineteen, who was suffering from menorrhagia. The dose was given in a state of fine powder at 9 P. M., the girl's usual bed hour being 10 o'clock. After undressing and lying down, instead of feeling sleepy she complained of hearing persons talking to her, and she soon became delirious, holding imaginary conversation with absent friends and strangers. This condition continued until 7 A. M. the next morning when she became drowsy and fell into a dose, being stupid and lethargic until 10 A. M. at which hour her pulse was fairly good (86) and her pupils were normal as was her temperature; her skin was pallid, as were her lips, but there was no evidence of cyanosis."

He further cites a paper of Dr. J. P. C. Griffith, of Philadelphia, in the May number of the *Therapeutic Gazette* on "The Unpleasant Effects of Sulphonal." He thus sums up the disadvantages of sulphonal: —

"(1) Its hypnotic action usually develops slowly.

"(2) Its action is occasionally prolonged.

"(3) The difficulty of determining the proper dose.

"(4) The drug is liable to produce mental excitement, nausea, vomiting, dizziness, headache, languor, exhaustion, depression, and a staggering gait.

"(5) It often fails to produce an hypnotic effect."

As a rule, concludes Mr. Foy, sulphonal is unsuited for the insomnia which results from pain, cardiac lesions, angina pectoris and arterio-sclerosis. Every drug capable of producing well-marked physiological effects will be found unsuited for certain cases, and it is an unfortunate fact that nothing but practical experience will enable the profession to decide on the cases which are suitable and otherwise.

We are prone when a new drug is introduced to prescribe it very freely, especially when its presence is hailed as a great boon, as was sulphonal, and we occasionally forget that the well-marked therapeutic action which makes it so valuable will also increase the risk to life if it is prescribed improperly; and every imprudent use of the remedy runs the risk of causing its rejection, and the consequent loss to the profession of a valuable therapeutic agent.

If the drugs prescribed were unfailing in their effects, irrespective of individual peculiarities, medicine would cease to be an Art, and every chemist's apprentice might secure sleep or disperse inflammations with the same facility as the most accomplished member of the guild of medicine.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 9, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	615	211	10.40	13.12	1.28	1 28	4.48
Philadelphia	1,040,245	359	115	8 68	14.56	.28	2.04	4.64
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	143	47	16.40	16.10	4.20	2.10	7.00
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	177	48	12.32	19.60	2.24	3.36	5.60
New Orleans	250,000	110	26	23.66	8.19	7.28	.91	7.28
Cincinnati	225,000	108	—	21.16	13.80	4.60	2.76	11.04
Washington	225,000	73	22	16.44	17.81	1.37	4.11	6.85
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	19	4	15.78	10.52	—	5.26	5.26
Charleston	60,145	29	9	10.35	3.45	6.90	—	—
Portland	40,000	13	3	—	38.45	—	—	—
Worcester	78,292	27	8	7.40	29.60	—	3.70	3.70
Lowell	71,518	26	10	19.25	3.85	7.70	—	11.55
Cambridge	65,552	21	6	23.80	23.80	—	—	19.04
Fall River	62,647	19	7	31.56	10.52	5.26	15.78	5.26
Lynn	53,334	11	—	—	18.18	—	—	—
Springfield	40,731	5	2	20.00	—	—	—	20.00
Lawrence	40,619	24	10	27.96	8.32	—	—	27.96
New Bedford	37,253	11	5	9.09	9.09	—	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	11	4	27.27	—	—	—	18.18
Brockton	28,813	9	2	—	33.33	—	—	—
Chelsea	28,167	8	1	12 50	—	—	-	—
Haverhill	26,058	11	3	9.09	—	—	—	—
Taunton	25,170	5	2	—	—	—	—	—
Gloucester	24,263	7	1	—	—	—	—	—
Newton	21,553	9	2	33.33	—	—	—	33.33
Malden	19,774	8	4	37.50	—	—	25.00	—
Fitchburg	17,534	7	—	14.28	28 56	—	—	14.28
Waltham	17,332	9	2	11.11	—	—	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	8	1	12.50	37.50	—	12.50	—
Quincy	13,728	4	2	—	—	—	—	—

Deaths reported 1,794: under five years of age 557; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 256, consumption 265, acute lung diseases 236, diphtheria and croup 115, diarrhœal diseases 48, typhoid fever 40, malarial fevers 14, whooping-cough 14, cerebro-spinal meningitis 9, scarlet fever 7, measles 5, erysipelas 4.

From malarial fevers, New Orleans 8, New York and Baltimore 2 each, Philadelphia and Charleston 1 each. From whooping-cough, New York 5, Boston 2, Cincinnati, Washington, Nashville, Cambridge, New Bedford, Haverhill and Malden 1 each. From cerebro-spinal meningitis, New York 4, Washington 2, Cincinnati, Fall River and Salem 1 each. From scarlet fever, Philadelphia 3, New York 2, Baltimore and New Orleans 1 each. From measles, New York 4, Cincinnati 1. From erysipelas, New York 4.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending November 2d, the death-rate was 17.5. Deaths reported 3,202: infants under one year 852; acute diseases of the respiratory organs (London) 300, scarlet fever 79, diarrhœa 62, fever 59, measles 58, whooping-cough 55, diphtheria 51.

The death-rates ranged from 11.6 in Brighton to 32.0 in Preston: Birmingham 15.8, Bradford 18 0, Hull 22.3, Leeds 18.8, Leicester 14 6, Liverpool 20.8, London 15.8, Manchester 22.3, Nottingham 14.7, Portsmouth 15.1, Sheffield 19.9.

In Edinburgh 17.2, Glasgow 23.8, Dublin 27.3.

The meteorological record for the week ending Nov. 9, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Nov. 9, 1889.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.		3.00 P. M.	Daily Mean.	7.00 A. M.		3.00 P. M.	7.00 A. M.		3.00 P. M.	7.00 A. M.		3.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 3	29.875	59.0	66.0	52.0	85		85	85.0	S.W.		N.W.	24		9	F.		O.	9.00	.38
Monday, .. 4	30.150	49.0	58.0	40.0	70		51	60.0	W.		W.	12		8	C.		C.		
Tuesday,.. 5	30.170	43.0	46.0	41.0	61		53	57.0	W.		W.	19		8	O.		C.		
Wednes. .. 6	30.125	40.0	46.0	34.0	63		58	60.0	W.		S.W.	15		10	O.		C.		
Thursday,. 7	30.060	47.0	57.0	37.0	60		41	50.0	S.W,		W.	10		8	C.		O.		
Friday,.... 8	30.195	48.5	51.0	46.0	63		86	74.0	N.W.		S.	5		9	O.		O.		
Saturday,. 9	29.995	50.5	55.	46.9	93		84	88.0	S.		N.	4		6	R.		O.		.02
Mean for Week.	30.081		54.1	42.3				67.7											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 9, 1889, TO NOVEMBER 15, 1889.

By direction of the Secretary of War, Captain **Louis M. Maus**, assistant surgeon, having relinquished the leave of absence on surgeon's certificate of disability granted him in S. O. 249, October 25, 1889, from this office, will, upon being relieved from duty at Fort Porter, N. Y., as directed in S. O. 242, October 17, 1889, from this office, proceed without delay to Fort Stanton, N. M., and report in person to the commanding officer Department of Arizona. Par. 8, S. O. 261, Headquarters of the Army, A. G. O. Washington, November 8, 1889.

Leave of absence for one month, to take effect about the 29th inst., is granted Captain C. N. B. **Macauley**, assistant surgeon. Par. 2, S. O. 166, Department Missouri, Fort Leavenworth, Kansas, November 8, 1882.

The following changes in the stations of medical officers serving in this department are hereby made, namely:

Captain L. W. **Crampton**, assistant surgeon, from Fort Lyon, Col, to Fort Sheridan, Ill.

Captain W. H. **Corbusier**, assistant surgeon, from Fort Hays, Kansas, to Fort Lewis, Colorado.

First Lieutenant F. J. **Ives**, assistant surgeon, from Fort Lyon, Col., to Fort Sill, I. T. Par. 3, S. O. 167, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, November 9, 1889.

By direction of the Secretary of War, the following assignments of officers of the Medical Department (recently appointed) are ordered:

First Lieutenant **Charles Willcox**, assistant surgeon, will report to the commanding officer at Fort Columbus, N. Y., for duty at that station.

First Lieutenant **Harlan E. McVay**, assistant surgeon, now at Fort Mackinac, Michigan, will report in person to commanding officer of that post for duty.

First Lieutenant **Euclid B. Frick**, assistant surgeon, will proceed from Philadelphia, Penn., to Fort Keogh, Montana, for duty at that station.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING NOVEMBER 9, 1889.

Purviance, George, surgeon. Granted leave of absence for twenty-one days. November 8, 1889.

Austin, H. W., surgeon. To inspect unserviceable property at St. Louis Marine Hospital. November 4, 1889.

Gassaway, J. M., surgeon. Relieved from duty at New Orleans, La.; to rejoin station at Cairo, Ill. October 23, 1889.

Banks, C. E., passed assistant surgeon. Granted leave of absence for thirty days. October 28, 1889.

Stoner, J. B., assistant surgeon. Ordered to Vineyard Haven, Mass., for temporary duty. November 6, 1889.

Condict, A. W., assistant surgeon. Ordered to Cairo, Ill., for temporary duty November 4, 1889.

Guiteras, G. M., assistant surgeon Ordered to Washington, D. C, for temporary duty November 8, 1889

Groenevelt, J. F., assistant surgeon. Ordered to New York, N. Y., for temporary duty. Nov. 5, 1889.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A Regular Meeting of the Society will be held on Monday, November 25, 1889, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Reader, Dr. E. G. Cutler: subject, "Some Hospital Cases of Typhoid Fever." There will be discussion of the subject in its various relations, clinical, bacteriological, prophylactic, etc., by Drs. Francis Minot, Harold C. Ernst, G. B. Shattuck, C. F. Folsom, F C. Shattuck, Charles Harrington, Henry Jackson and others.

Dr. J. B. Ayer, will read "Intussusception complicated by Pregnancy and Tuberculosis"; Dr. F. H. Hooper, "Accidents in Intra-Nasal Surgery. Presentation of an Instrument looking to their Prevention."

F. B. Harrington, M.D., *Secretary*.

Norfolk District Medical Society.— A Meeting for Scientific Improvement will be held at the hall of the Roxbury City Guards, 67 Warren Street, Roxbury, November 26, 1889, 7.45 P. M. Communications: (1) "Relation of Food Supply to Disease," W. S. Everett, M D., (discussion to be opened by B. F. Davenport, M.D.); (2) "A Case of Bright's Disease with Complications," E. F. Dunbar, M.D.

James C. D. Pigeon, M.D., *Secretary*,

APPOINTMENT BY THE BOARD OF MEDICAL OFFICERS, M. V. M.

Second Lieutenant Arthur W. Clark, appeared before the Board of Medical Officers, M. V. M., November 16, 1889, and was examined, qualified, and commissioned as Ambulance Officer, second Brigade M. V. M.

BOOKS AND PAMPHLETS RECEIVED.

Biennial Report of Medical Examiner-in-Chief, American Legion of Honor, 1887–89. J Foster Bush, M.D.

The Medical News Visiting-List for 1890. Weekly Edition. Thirty Patients per week. Philadelphia: Lea Brothers & Co. 1889.

Twentieth Annual Report of the State Board of Health of Massachusetts. Public Document No. 34. Boston: State Printers. 1889.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Ninety-first Annual Session, held at Baltimore, April, 1889.

The Psychological Factor in Selecting a Climate for Invalids. By Edward O. Otis, M.D., of Boston, Instructor in the Boston Polyclinic. Reprint. 1889.

Description of a Case of Embolism of the Left Central Retinal Artery. By Charles A. Oliver, M.D., of Philadelphia. Reprint. Hartford, Conn., 1889.

The Gulstonian Lectures on Secondary Degenerations of the Spinal Cord. Delivered at the Royal College of Physicians, March, 1889, by Howard H. Tooth, M.D, F.R C.P., etc. London. J. & A Churchill. 1889.

Guide Médical a l'Exposition Universelle Internationale de 1889 a Paris, Par Marcel Baudouin, Secretaire de la Rédaction du Progres Medical, etc. Premier fascicule, Instruments de Chirurgie et de Précision. Paris: aux bureaux du Progrès Medical. 1889.

Original Articles.

PRIMARY CANCER OF THE GALL-BLADDER AND BILE-DUCTS.

BY J. H. MUSSER, M.D.,

Assistant Professor of Clinical Medicine in the University of Pennsylvania. Physician to the Philadelphia and Presbyterian Hospitals.

Stimulated by the unfortunate but unavoidable result of laparotomy in the last of the cases about to be reported, with a long-time interest in the success of surgical measures for the relief of obstruction of the biliary passages, the writer was led to the study of the recorded cases of the forms of cancer indicated in the title.

One hundred cases of primary cancer of the gall-bladder, and eighteen cases of like disease of the ducts have been analyzed. In addition, a brief note is made of three cases of sarcoma of the gall-bladder, abstracts of which are added. The cases of Burridge and Tyson, referred to by others, have been excluded because of the strong probability of their secondary nature.[1] The two cases of Hayem and one each of Chassaignac and Boucherau,[2] included in Villard's table are not in this list. Heschl, in the report of a case, speaks of two cases with gall-stones which he had seen; Fagge summarizes twelve cases; Marchand reports one, and Fazio refers to another in his report. Moore has studied ten cases, of which four probably are placed in the present collection. In the St. George and St. Bartholomew Hospital Reports descriptions of lesions in two cases may be found. The five cases of Professor Stiller were secured too late for classification. The five cases of cancer of the bile-ducts reported by Professor Delafield are not included in the second tables because they were reported collectively. Finally, no attempt has been made to include any of the cases referred to in a more or less general manner by the systematic writers on pathology or internal medicine, — Rokitausky, Förster, Klebs (two cases), Birch-Hirschfeld, Von Schueppel, Frerichs, Bartholow, Loomis, Murchison and others.

It is thus seen that in addition to the cases tabulated by the writer, thirty-three cases of primary cancer of the gall-bladder and five of the ducts have been placed on record in a more or less tangible form, while doubtless a large number have been observed in our large hospitals that have never been publicly noted.

A collection of 159 cases disabuses one of the idea of an affection being rare, and yet systematic writers always refer to the great rarity of primary cancer of the biliary passages. Ranvier and Fagge declare it to be much more common than it is usually considered, and that its presence is mistaken for carcinoma of the liver. One source of fallacy is mentioned by the latter writer, namely, that cancer of the gall-bladder growing into the hepatic tissue is called cancer of the liver because the gall-bladder in the centre of the tumor, is overlooked on account of its small size. Again, we fear it is not customary to explore the ducts with that accuracy which is essential to determine the presence of small new growths.[3]

The frequency of this form of primary cancer, compared with its frequency in other organs, may be inferred by the statistics of Norman Moore, in the latest Bradshawe Lecture.[4] He details the results of the examination of one hundred and twenty-nine cases of new growths in the internal organs of the body, studied during a period of several years. Ten cases in which the gall-bladder and large bile-ducts were the seat of new growth are noted. Compared with the number of cases of like affection in other organs, collected during a similar period, it is not an insignificant number. The internal organs which are the common seat of primary new growths are the stomach, the œsophagus and the uterus. Twenty-nine cases of cancer of the stomach and fifteen of the œsophagus were observed by Moore. Eleven new growths in the lung, eleven in the pancreas, nine in the colon, eight in the rectum, and fewer numbers in other organs, shows that primary cancer of the biliary passages is much more frequent than we have been led to believe. Uterine cancer was not studied by Moore.

It is not without interest to refer to the fact that the literature of primary cancer of the biliary passages is quite recent. Villard, in 1872, published the most complete paper on the subject. He was unable to collect more than twenty-five cases up to that time. Since then Kohn, Kraus, LangHeinrich, Zenker, Bernheim, and Stiller have made the most important contributions. Prior to 1872 the subject seemed to attract the attention of the French writers chiefly; since then the Germans have taken precedence although Fagge and Moore, Habershon and Murchison, in England, have made careful studies of it.

The following cases were observed by the writer. One of them was previously reported, but the interest of the case warrants a reproduction of it.

Case I.[5] *Primary Cancer of the Gall-Bladder; Hepatic Colic; Pain in the Right Hypochondrium; Jaundice; Enlargement of the Liver; Absence of Tumor; Fever; Vomiting and Diarrhœa; Death from Exhaustion.*

Mrs. McM. was under my care from the 9th of March until the 4th of May, 1881. Her illness dated from the middle of December, 1880, and continued until the 18th of May of the following year. The history previous to my attendance was apparently that of an intermitting fever, with hepatic and gastric complications. The symptoms referable to the liver were paroxysmal lancinating pains in that region, at times so severe as almost to cause collapse. The gastric symptoms were epigastric pain, loss of appetite, flatulence, acid eructations, and, at variable intervals, attacks of vomiting. She had not been jaundiced.

I found her suffering from an intermittent fever, with daily paroxysms, each beginning about 1 P. M. and continuing until 7 or 8 P. M. The chill lasted a half-hour and was moderately severe; the fever lasted four hours, at its height the temperature being 103°. She was emaciated; her features indicated exhaustion and were somewhat pinched; her complexion was sallow; she was anæmic. She suffered from severe paroxysmal pains in the epigastric and hypochondriac regions. The areas were tender on pressure but no tumor was noticed. The liver dulness extended three inches below the ribs in the nipple-line. The spleen was twice its natural size. The appetite was lost. She had nausea, acidity, and flatulence. The bowels were constipated. Urine contained neither albumen nor sugar. Urates and uric acid were in abundance.

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[1] Burridge: Cancer of breast some years previous. Tyson: Epithelioma of lips, last removal one year before death.

[2] Hayem: female, age fifty-two; male, age fifty-six. No detailed account of cases of Chassaignac and Boucherau.

[3] See also Orth, Diagnosis in Pathological Anatomy, Boston, 1880, pp. 307 and 330. Orth says it can easily be overlooked, and that so-called primary cancers of the liver are frequently secondary to cancer of the biliary passages.

[4] On the Distribution and Duration of Visceral Growths. Bradshawe Lecture, London Lancet, vol. ii, No. 9, 1889, p. 415.

[5] Trans. Path. Soc., Philadelphia, vol. x, 1873, p. 81.

During the course of her illness the symptoms may be detailed under three headings, — febrile, gastric, and hepatic. There seemed to be no relation between the different sets of symptoms, except the febrile and hepatic. The fever was more continuous when the jaundice was deepest. At the risk of some repetition, I will note them.

Gastric. — Tongue covered with a dark-yellow, heavy fur; moist, tremulous; later, dry and brown. Bitter taste in the mouth, secretions viscid; loss of appetite; thirst; acidity; flatulence; weight and fulness after meals; epigastric pain and tenderness; nausea and vomiting. The latter, of all the gastric symptoms, was especially independent of any other symptoms. It occurred once in two weeks, once a week, or twice a week. Each paroxysm lasted from two to four days. The fluid vomited varied from a clear white, sour, to a greenish-yellow, bitter liquid.

Hepatic. — Pain in the right hypochondriac region, paroxysmal, sharp, and lancinating, radiating to the right and left shoulders and to epigastrium; tenderness on deep palpation, absence of tumor or irregularity of edges, enlargement as noted above. On account of liver-derangement there were marked jaundice, with clay-colored stools and bile in the urine. The jaundice occurred four times while the patient was under my care. The first attack was light, lasting three days; the second and third each lasted a week; the fourth, beginning on the 25th of April, continued till death. Each attack was preceded by hepatic colic. With the second and third attacks the fever was remittent in character; with the last it was continuous. As the jaundice improved, the fever changed from the remittent to the intermittent type.

Febrile. — As may be inferred from the previous notes, the fever was irregular. At first it was intermitting, then remitting, and, finally, it became continuous. At no time was the temperature higher than 104°. With the rise in the temperature there was a corresponding pulse-rise. The increased pulse was not as great, by twenty beats, as a pulse at the height of a paroxysm of intermittent fever. The last month of illness it became rapid, feeble, compressible, and dicrotic. When the fever was remittent or continuous, in the evening there was delirium. The "typhoid" state developed the last ten days of her life, and death took place from cardiac failure. The use of antiperiodics prevented the paroxysms at first. As soon as the drug was suspended they recurred. Finally, in spite of my remedies, the fever continued.

The following facts also bear upon the case: The patient was a married woman, who had not lived with her husband for several years, on account of his brutality. She was thirty-seven years old, a nurse by occupation. She had always been in poor health, and had had several attacks of biliary colic. The family history was good, save that a maternal aunt died of cancer. Her mother and brothers were living; her father had been killed.

Autopsy. — Rigor mortis had set in early; the body was greatly emaciated, and all the tissues were stained with bile. With the exception of the liver and spleen, the organs were normal for a person who had died of heart-failure. The spleen was about twice the normal size, of a dark greenish-brown color, and of about normal consistence. Unfortunately, it was not examined microscopically.

The liver was of a peculiar shape. The right lobe was eight inches long, the left the same. Curiously, however, the lower edge of the latter lobe did not extend as low down as that of the right lobe, but its upper edge was three and one-half inches beyond the same edge of the right lobe, while the lobe was doubled on itself to conform with the concavity of the diaphragm. Transversely, the right lobe measured five and one-quarter inches; the left, three and one-half. The former was two and one-half inches thick, the latter, one and one-half. The gall-bladder was in the normal position and of normal size. It was adherent to the duodenum. The color of the outer portion was pure white, net bile-stained. It was not collapsed, and was of firm consistence. A portion of the bladder underneath the liver, not quite as large as a walnut, was of natural color, and exhibited fluctuation.

On section of the gall-bladder, it was found that the white appearance of the exterior was due to cancer, which involved three-quarters of the organ. The growth encroached upon the cavity, so that the walls were from one-half inch to one inch thick. The mass had the appearance of a soft cancer; the inner surface had a ragged, ulcerated appearance, and in the centre of the mass was found a gall-stone the size of a filbert, with a rough surface, looking like a mulberry calculus. The stone was lying against the mouth of the gall-bladder; behind the stone was a cavity about the size of the stone, filled with a thick greenish-yellow fluid. From the appearances one would infer that the stone acted as a ball-valve to the duct; and its presence was the cause of the attacks of hepatic colic, during the course of the disease. The hepatic duct was enlarged, its walls thickened, its calibre much increased. The branches extending into the upper half of the right lobe were greatly dilated, even almost to the periphery of the liver, terminating in saccular dilatations. The ducts contained a thick grayish-green matter; the walls were of a slate-gray color, dotted with dark points. The liver-substance traversed by these ducts was dark and soft, not unlike gangrenous tissue. A part in the centre, about three inches square, was especially of this appearance. The remainder of the structure of the organ was slightly stained with bile and fatty in appearance. On microscopic examination the malignant mass was found to be of the nature of a medullary cancer. The cystic and part of the hepatic duct was involved. The transition from the cancerous to the catarrhal process in the ducts was well-marked. In the liver catarrhal inflammation of the ducts was very distinct. In the lymphatic spaces around the ducts there was an abundant infiltration of epithelioid or indifferent cells. The cancer of the gall-bladder was no doubt primary, from the ragged appearance of the mass and the absence of nodules.

Case II. *Primary Cancer of the Common Gall-duct; Jaundice; Remitting Fever; Epigastric Pain; Tumor. Laparotomy; Death from Peritonitis.* (*Abstract.*)

M. H., aged forty-nine, male. Family history and habits good.

Previous History. — One year ago, in July, 1887, he was taken sick with cramp in the stomach, and vomiting; jaundice associated with intense itching gradually developed, and reached its height in December. In January he had an attack of alleged typhoid fever. The jaundice continued during the latter part of the winter and spring. During the spring there was epigastric tenderness and soreness, and the same sensations in the region of the gall-bladder. Treated in the Presbyterian Hospital from May 17 to June 13, 1888, for cirrhosis of the liver. He was then extremely jaundiced; fairly well-nourished; abdomen swollen; appetite poor; bowels constipated; and he had paroxysmal pain in the region of the gall-bladder. He improved while in the hospital, but took cold on his way home, in June, and had chills and fever, with a return of the jaundice and epigastric pain. On August 17th, he had chills beginning about 3 P. M., and lasting sometimes until midnight. Had fever, no pains, but constipation; after the relief of the latter he affirms that the chills disappeared, and that their occurrence was sometimes preceded by distention of the abdomen.

October 3, 1888. On readmission to my wards in the Presbyterian Hospital, the following notes were taken: Slight emaciation; general jaundice; no œdema; no itching; anæmia; no general distension of abdomen, but distension of epigastrium to one and one-half inches above level of the umbilicus; right hypochondrium fuller than left. A rounded prominence the size of a dollar, movable with respiration, is opposite the umbilicus in the right nipple line. Its lower border is well defined on the left side, smooth and tense, and its upper right border is continuous with the liver, which is full two and one-half inches below the margin of the ribs. The edges of the liver are smooth and somewhat thickened. Inside and to the left of the previously described tumor, the liver border runs parallel with the ribs, and two and one-half inches below it, to the median line. Upper border of hepatic dulness in right nipple line of fifth rib; in axillary line of seventh rib. No gastro-intestinal symptoms.

October 8th. On aspiration of tumor, serum, containing albumen, was withdrawn; gradual loss of appetite.

October 15th. Laparotomy; death from peritonitis in forty-eight hours.

Abstract of Autopsy. — Thickening and occlusion of the common and hepatic ducts by primary carcinoma, secondary nodules in liver, especially on under surface; chiefly peritoneal. No other secondary nodules except two small ones in the head of the pancreas. Gall-bladder enlarged and contained sero-purulent fluid, but no gall-stones. Other organs bile-stained, etc., as in chronic jaundice.

Résumé. — Chronic jaundice, epigastric pain, improvement; relapse, with intermitting fever, enlarged liver and gall-bladder containing serum. Absence of hepatic colic. No gall-stones.

PART I. PRIMARY CANCER OF THE GALL–BLADDER.

One hundred cases form the basis of these studies. In sixty-four cases the variety has been clearly indicated. Twenty-three were of the encephaloid, nineteen of the scirrhus, six of the colloid, and four of the villous form, and twelve were cylindrical epitheliomas. In thirty-six cases the type was not noted.

Morbid Anatomy. — The gall-bladder has been described as reduced in size (18), of normal size (2), enlarged (10), dilated (6), or enormously dilated (7).[6] The terms used to describe the size represented the objects: hazel-nut, pear (3), apple, goose-egg, two fists, hen's eggs, two eggs, child's fist, man's fist or hand, child's head, turkey's egg. The changes in size depend on the variety and seat of the new growth. The well-known appearance of each variety need not be detailed. If the fundus or the walls are involved, as a whole or in part, a nodular mass or masses — small and contracted if scirrhus, large if encephaloid; hard and dry if the former, soft and juicy or pulpy if the latter — are seen. The usual secondary changes, softening, etc., etc., were noted frequently. When the growth invades the neck of the bladder as an annular ring or an outgrowth or a node, causing stenosis of the orifice, the remainder of the organ may be either atrophied or much dilated. A growth situated at the neck was particularly detailed six times and at the fundus an equal number of times. Nine times the mass was said to be hard, or firm and rough, or nodulated. The gall-bladder was "destroyed and replaced by new growth" in twelve cases; enclosed in the growth in three; not distinguishable in one; a soft, whitish, pulpy mass in one; and destroyed by cancerous ulceration in one instance. Presumably in these instances the growth was of, at least, firmness. Certainly in the following cases the firmness or hardness was undoubted, when the walls were infiltrated (4), or thickened (19), or "converted into a solid mass" (1). In three instances the mass was composed of pouches, and in many instances one or more pockets, the remains of portions of, or the entire gall-bladder, are described. In one case a membrane subdivided the sac into two portions.

Six times simple ulceration of the interior of the gall-bladder is described; twice ulceration with perforation into the peritoneal cavity; six times with perforation into the duodenum; and ten times with perforation communicating with the colon.

Adhesions to surrounding organs are common, excluding adhesions with perforation as follows: to the duodenum (5), the colon (4), the stomach (4), the round ligament (1), the liver (2), the liver and stomach (1), the vertebral column (1), aorta and vena cava (1). General adhesions were noted in one. In one instance the growth turned the vena cava out of its course, and in one compressed the hepatic artery and vein.

The contents of the gall-bladder or its pouch varied. Gall-stones were present in sixty-nine cases, and noted as absent in three. In twenty-six cases the contents were fluid: mucus (7); pus (7); bile (2); blood (1); liquid-like serum, thin watery fluid, green watery fluid, clear white, thick fluid, thick, gray fluid, encysted fluid, one each (all mucus or mucoid); once each sanious, grumous, or meat-broth like; and once it was simply noted as "fluid"; in one case "plaster-like" contents were found.

The extraordinary frequency with which gall-stones are found has been mentioned by all writers. They are seen free in the cavity of the affected bladder; free or fixed in pouches or diverticula, so-called, the walls of which are normal or the seat of disease; imbedded in the malignant mass, or filling the lumen of the ducts. In one instance one was found in the fistulous communication between the liver and the colon. They have been distinctly referred to as old stones by some of the writers. Ord alone reports a calculus which from its chemical nature could be inferred to be of recent and non-biliary origin. It was composed of carbonate and phosphate of lime and altered mucus, and did not contain bile elements. The relation of the calculi to the new growth will be discussed later.

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[6] The numbers represent frequency of occurrence of each condition.

Liver. — One would naturally look for secondary changes in the liver proper, and yet, save by metastasis, its structure was but infrequently changed.

Size noted as normal (5), small or atrophied (4), enlarged (14), double the natural size (2). It was the seat of secondary deposits fifty-four times, in two of which the invasion was particularly stated to be by contiguity.

In a large proportion of cases the invasion undoubtedly was by contiguity, and the progress along the ducts has been particularly described. In Willigk's case the induration about the ducts extended, "tree-like," into the structure of the liver. Multiple hepatic abscess was present in two cases.

Bile Ducts. — The changes in the ducts are due to the presence of secondary growths, or to the "growth in continuity" (a term insisted upon by Moore) of the neoplasms; to obstruction of their lumen; or to secondary catarrhal or purulent inflammations.

Hepatic Ducts. — Noted normal in five, dilated in twenty-one, the seat of secondary disease in thirteen, and of purulent inflammation in three instances. Obstruction and compression were each present in one instance, and a gall-stone was found in one.

Cystic Duct. — Normal four. and dilated thirteen times. In one exceptional instance it was dilated to the size of the transverse colon, and contained gall-stones. Six times it was obliterated, once each narrowed, closed or impermeable, and four times obstructed. Twelve times it was the seat of secondary growth, twice indurated and thickened, and three times enclosing gall-stones.

Common Duct. — Normal eight; dilated eleven; the seat of secondary growth seven; and obstructed seven times, by pressure four, not known two, stone one. The duct was obliterated three times, was thickened once, and contained calculi three times, and pus and blood and "fluid" once each.

Metastasis. — This was noted as present in fifty-five cases; in every instance but one the liver was one of the affected organs. The cases in which the growth in other organs took place—the duodenum, colon, lesser omentum and peritoneum—by direct continuity are not included.

The cases of extension by continuity include the ones in which ulceration and perforation of the hollow viscera — the duodenum and colon — took place; and of ulceration and fistulous communication of the gall-bladder with the abdominal walls, the only one reported.

The frequency with which the various organs were found to be the seat of isolated secondary growths is as follows: Abdominal lymphatics, 16; mesentery, 4; omentum, 5; duodenum, 4; colon, 3; peritoneum, 3 (12 if the omentum and mesentery are included); stomach, 6; pancreas, 3; lungs and pleura, 10; suprarenal bodies, 2; and once each in the mediastinal glands and the ascending colon. In one case, in addition to secondary growths in the stomach, liver, pancreas and peritoneum (included in the above) they were found in the navel, rectum, uterus and kidney. It was the only case of the almost universal presence of the disease.

It is thus seen that secondary growths are not common, and are not universal or found in distant parts. It is impossible from this series of cases to prove the first conclusion of Moore (*loc. cit.*), that carcinoma of the gall-bladder and large ducts usually grows directly into the liver. The second proposition, that secondary deposits are not wide-spread, is supported; but the order of frequency must be reversed in the third conclusion. In the following, named in the order of greatest frequency from the first, metastasis occurs to the liver, the abdominal lymphatics, the peritoneum, the lungs, the stomach, the duodenum and to the pancreas. These estimates, as all that are made in this paper, of course, are relative only, and subject to the same valuation that one gives to any collection of facts the correctness of which depends upon various judgments and observations. Care has been taken to prove the facts in each case.

To conclude, in primary cancer of the gall-bladder one finds the organ most frequently diminished in size and hard, or of normal size; sometimes (in 20% of the cases) it is enlarged. The enlargement is generally due to dilatation, and then the mass projects beyond the margin of the liver. Gall-stones are found in 69%, and fluid contents in 26% of the cases. Extension by continuity or by secondary deposition takes place in about 75% of the cases, although it is never wide-spread. Adhesions form in 20%, and adhesions with ulceration and perforation in 18% of the cases.

Etiology. — No facts can be deduced from these cases to aid us in the formation of a theory as to the etiology of cancer. Certain positive relations of probable cause and effect can be pointed out, while in this particular location of carcinoma its greater frequency in the female sex is established.

Of the influence of heredity or occupation, or hygiene, food, drink or personal habits, climate or country, nothing can be learned. The cases occurred almost entirely in hospital practice, and thus a general notion of the character of the individuals can be formed. The frequent reports of cases from this class is due to the fact that private cases are never so well studied from the nature of things.

Age. — In ninety-one cases the age is recorded. An average of the ages would not be strictly accurate; a statement of the frequency in different decades gives the best notion of the period in life when the disease is most frequent.

1 to 10 years	1
10 to 20 years	0
20 to 30 years	1
30 to 40 years	9
40 to 50 years	19
50 to 60 years	27
60 to 70 years	19
70 to 80 years	14
80 to 90 years	1
Unrecorded	9
	100

The larger number of cases occur from the fifth to the eighth decade inclusive, and in the sixth decade the largest number in any one decade is found.

Of 64 cases in which the variety is recorded, the ages of sixty are given. No variety preponderates in in any particular decade. Some (five) of the encephaloid type occur a decade sooner (thirty to forty) than the scirrhus, but they continue as late in life as the latter (seventy to eighty), and one was found as late as past eighty. Five of the six colloid carcinomas were found between sixty and seventy. The youngest case reported by Dr. Moxon was in a patient aged four years. It was a villous carcinoma. Curiously, the earlier cases reported occurred after sixty, and hence the conclusion arrived at and adopted by systematic writers was that the disease occurred late in life. Thus, in Villard's table, of 20 cases in which the age is given, nine patients were over seventy, and five between sixty and seventy. Of our cases 57% of the entire number were under sixty years of age. The average of Kohn's cases was 57.7 years. Hess states the average age of carcinoma of the liver as 45.4 years. It (carcinoma of the gall-bladder) probably occurs later in life than carcinoma of other organs, but not so late as formerly thought; and indeed, when one compares this table with that of Welch, in his article on "Cancer of the Stomach,"[7] one sees not much difference in the age of patients with the two forms of cancer under consideration.

Sex. — The sex of 98 of the entire list is given; 23 males and 75 females. The ratio of males to females (11 females to 7 males) is more nearly equal in the scirrhus variety than any other. All of the colloid variety occurred in females. Otherwise there is no significance in the sex of the persons in which the respective varieties occurred.

The enormous preponderance of females has always been recognized and commented upon, and in connection with the frequent association of gall-stones, is considered a marked ætiological factor. Certainly it is a valuable clinical index.

Gall-Stones. — One school of pathologists believes that the stones precede and are the exciting cause of carcinoma of the gall-bladder in a predisposed individual, — Durand-Fardel, Klebs, Von Schueppel, etc.

Another believes that the stones are formed secondarily to the new growth, — Lutton, Förster, Davaine, LangHeinrich, etc.

The calculi were found in 69 cases; they were noted as absent in three. Zenker believes they are often overlooked. Their absence at the autopsy does not indicate necessarily that they had not been present in life, and escaped by ulceration. Scars or ulcers often are found, which indicate that stones had been present before death. A single stone with facets was found in Wiggleworth's case, without perforation. The others must have escaped during life. In one of Zenker's cases fragments of calculi were found.

Because calculi are so common in females, and cancer of the gall-bladder largely in excess in that sex, it was thought by the early observers that the former induced the latter. Gall-stones undoubtedly occur more frequently in persons who die from cancer of other internal organs than in persons dying of other causes. The diathesis favors their formation, and Kohn particularly urges the fact that the cancerous diathesis creates such relaxation of the tissues as to favor the stagnation of bile. He believes the two conditions are in progress at the same time.

If the calculi are an exciting cause, they must precede the formation of the carcinoma. Three cases of carcinoma are reported in persons who had been the subjects of hepatic colic for a long time previously. Klebs found an old stone, with commencing carcinoma, in the neck of the bladder; he thinks it positive evidence that the foreign body was the exciting cause.

Some anatomical evidence seen at the autopsies throws light on the subject. Stones are found in the bladder, the duct of which is and has been obliterated for some time. They are often in large numbers, surrounded by mucus and old lymph, bathed in pus, or covered with serum. No traces of bile have been found in the same sac. They are found in pouches surrounded by healthy walls cut off from the bile-duct, or fixed in the new growth structure. The gall-bladder cavity usually diminishes in size so that it is not a large enough reservoir for calculus formation, while shrinkage is seen in cases in which the cancer does not contract. In a number of cases the cystic duct was obliterated, and yet stones were in the gall-bladder. Gall-stones are found in the ducts outside and far beyond the seat of disease, and yet must, from their appearance, have formed in the gall bladder, and passed out. The case of Quetsch shows that gall-stones precede carcinoma, for they had been discharging from a biliary-cutaneous fistula for three years.

In the remarkable case of Goodhart, in which the cystic duct was enormously dilated, and contained a great number of calculi, which developed with the cancer, the evidence appears to favor the idea that gall-stones form most rapidly in cancerous subjects. No number of facts have been brought forward to prove the formation of gall-stones after cancer. Ord's case alone shows the presence of a calculus which, however, was not biliary. The problem seems to stand about as follows:

Gall-stones are found in cancer of the gall-bladder. The clinical history and the anatomical appearances appear to show that they formed prior to the formation of the cancer.

Cancer occurs without gall-stones, and, *vice versa*, gall-stones occur without cancer. The frequent association of calculi and carcinoma, and the undoubted fact of their formation prior to the morbid growth, warrant the belief that their presence is as much a causal factor as are irritants in other situations, for example, in the lips, etc.

In objection to the view that gall-stones have a causal relation to carcinoma, some urge that such relation does not exist under like circumstances with calculus of the kidney and bladder. One must remember that the mucous membrane of the gall-bladder is richer in glands than that of the pelvis of the kidney or the bladder, and hence more likely to invite an irritation resulting in carcinoma. Zenker believes an adenoma develops and changes into an adeno-carcinoma, which is the primary atypical growth. Furthermore, the irritation of a gall-stone may continue silently for years, while a calculus in the kidney or urinary bladder is soon the cause of such deleterious secondary changes that they impair the health before a carcinoma can arise.

Among other causes considered are local external injuries, as by a blow (Robinson and Fitzgerald), or a fall (Moxon's case), or the irritation produced by tight lacing. Marquand reports a case of the latter. The depression of the ribs crosses the liver and ducts, and in the illustration accompanying the report of the case the bladder is seen to be constricted. In this constricted portion the disease began. The patient of Robinson and Fitzgerald had been kicked seventeen years before death. From thence until his final illness he was subject to pain in the right hypochondrium. The local peritonitis and inflammation was no doubt a predisposing factor. In Martin's case, after a fall on the right side, symptoms of biliary obstruction and carcinoma began.

(To be continued.)

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[7] System of Medicine, Pepper, 1886.

A SUPPLEMENTAL INQUIRY INTO THE FREQUENCY WITH WHICH LEAD IS FOUND IN THE URINE.[1]

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AT a meeting of the Association of American Physicians, in June, 1887, I reported an analysis of eighty-six cases, not presenting unequivocal symptoms of lead-poisoning, where the urine had been examined for lead. In forty-eight of these cases lead was found; in thirty-eight it was absent.

The question which I had in mind in making the investigation was whether long-continued exposure to very small quantities of lead gives rise to other symptoms than those that are commonly reported; and, if so, whether such symptoms are sufficiently characteristic to lead to, at least, a presumptive diagnosis.

The conclusions which that investigation seemed provisionally to justify were the following:

(1) It is not probable that lead is to be detected in the urine of more than fifty per cent., at most, of persons not presenting symptoms of disease, and the finding of lead in a larger percentage, for any special group of cases, would be presumptive evidence that lead was connected, directly or indirectly, with the production of the symptoms.

(2) That lead is an occasional cause of chronic sensory neuritis, and chronic or subacute myelitis, and may give rise to the symptoms of spastic paraplegia.

(3) That lead is an occasional cause of pure neurasthenic symptoms, and the presence of a fine muscular tremor strengthens the probability of this diagnosis.

(4) That workers in rubber are liable to suffer from lead poisoning.

The investigation which is the subject of the present paper was undertaken, primarily, to control the first of these conclusions, as to the frequency with which lead is to be found in the urine of healthy persons.

For this purpose I first obtained thirty specimens of urine from medical students, and had them analyzed by Dr. A. M. Comey, who had so carefully performed the earlier analyses. These gentlemen were living, as a rule, in boarding-houses in the city, and came originally from various parts of the country. Potassium iodide was taken in each case for four days before the urine was collected. Slight traces of lead were found in three cases, or ten per cent. In one of the three cases a second analysis failed to detect lead; in the other cases no second analysis was made. The students in whose urine the lead was found appeared to be in perfect health.

In order to make the same inquiry with regard to a class in the community living under poorer circumstances, I obtained, through the kindness of Prof. F. C. Shattuck, specimens of urine from a number of patients at the Good Samaritan Hospital. Thirteen of these patients were suffering from phthisis or pleurisy; in three cases lead was found in the urine. In four cases, presenting simple anæmia and debility, lead was absent; but as lead might have been the cause of these symptoms the cases are excluded. In a case of acute Basedow's disease, brought on by severe fright, lead was also absent. The same was true in two cases of paralysis agitans, and one of acute chorea.

Besides these cases, I have had analyses made[2] of the urine from a number of patients presenting themselves at the out-patient department of the Massachusetts General Hospital, suffering from some disease, either strictly local, or, so far as we know, not attributed to lead, and from a few suitable private patients.

In all, we have fifty-seven new analyses from persons who might be said to be from our point-of-view without symptoms. In ten of these, or 17.5 per cent., lead was found, usually in slight traces.

It is doubtless true that if more refined methods of chemical analysis could have been employed, and larger quantities of urine, besides other secretions and excretions have been subjected to analysis, the number of cases belonging to this group in which lead was present would have been greater. If to these we add the eleven cases reported upon two years ago, we have a final total of sixty-eight cases, in 17.6 per cent. of which lead was found to be present, and so far as we now know, therefore, this proportion may be taken as about representing, or probably rather under-representing, the frequency with which minute quantities of lead are present in the tissues of practically healthy persons.

If, to compare with this group, we add together all the cases from the two investigations of which it cannot be said positively that they presented no symptoms which would commonly be said to be attributed to lead, we have a total of 117, in 62, or 53 per cent., of which lead was found. Even if we add in the cases presenting no characteristic symptoms, raising the total to 186 cases, we still find that lead was present in 40 per cent., or more than twice the proportion found in the first group. This comparison makes it probable that lead is at least a partial cause of a variety of symptoms not usually attributed to that cause.

Case.	SYMPTOMS.	Former series.	New series.	Total.	Lead present.	Lead absent.	Per cent. in which lead was present.	
1	No symptoms not attributable to other causes . .	11	57	68	12	56	17.6	40
2	Fine muscular tremor; nervous debility	8	2	11	11	0	53½	
3	Chronic multiple neuritis; neuritis with chronic and subacute myelitis; spastic paraplegia; multiple sclerosis	19	24	43	27	16		
4	Progressive muscular atrophy	4	1	5	0	5		
5	Cerebral and cerebro-spinal cases	7	2	9	7	2		
6	Epilepsy	8	4	12	4	8		
7	Sciatica	2	1	3	0	3		
8	Acute polio-neuritis	0	2	2	0	2		
9	Digestive disorders	0	2	2	0	2		
10	Simple anæmia and debility .	0	4	4	0	4		
11	Remaining cases from former series	26	..	26	13	13		
12	Rubber-workers	0	8	8	5	3		
13	Optic neuritis	0	2	2	2	0		

No statistical importance is to be attached to these ratios, except as stated in the text.

No doubt the composition of this table is open to a number of criticisms; one of which might be that quite a large proportion of the patients presenting symptoms of organic disease were laboring men, whose lives would expose them to a relatively large number of the many sources of lead-contamination, and, at the same time, to other, and perhaps the real causes of their disease. Nevertheless, the numbers are sufficiently striking to make it worth while to examine the groups of cases in which lead was found for indications of its influence.

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[1] Read before the Boston Society for Medical Improvement, October 28, 1889.

[2] The later analyses were made by Dr. C. P. Worcester, under careful and repeated control experiments.

I recognize that this attempt should be made in a conservative spirit, for it is evident that the presence of small quantities of lead is not only compatible with health, but does not necessarily complicate other existing diseases. Thus, one of the cases noted in the earlier paper was that of a gentleman suffering from sarcomatous disease within the pelvis. Lead was twice found in the urine in the course of his illness, yet, in spite of the presence of this poison in his tissues, and the depressing influence of the organic disease, which eventually proved fatal, he exhibited no marked signs of anæmia or impaired nutrition until a comparatively short time before his death.

One group of cases, the patients being a father, mother and three children, is especially interesting in this connection, as indicating the importance of taking lead-poisoning into consideration in obscure cases, and as indicating the difference in susceptibility between different members of the same family. The water used by this family at their country house, where they spent a considerable part of the year, ran for quite a distance through lead pipes, and was found to contain a large quantity of lead. Repeated analyses showed that lead was present in considerable quantities, in the urine of two of the children, the father and the mother, though for some reason, not easily to be explained, not in that of the third child. All these children were in fair health. One of them, however, has been very subject to sharp attacks of gastric indigestion, pain in the left side, and vomiting preceded by sore throat; and also to constipation, which was worse during the attacks of indigestion. When the lead was found, small doses of iodide of potash were given, but seemed to precipitate the attacks above mentioned, and was, after a number of trials, abandoned by advice of her physician, who believed her attacks to be due to imperfect power of digestion. A possible cause for this imperfect digestion was, obviously, the lead. She became, finally, perfectly well, but still has to be careful with her food. Another child, a sister, in whose urine, also, lead was found, is said to have had a few attacks of indigestion and occasional clay-colored stools. A third child, a boy, who was thought to have drunk even more of the water than his sisters, had no lead in his urine, according to two analyses, and no symptoms. The father and mother were perfectly well, though their urine contained a considerable amount of lead. It is a remarkable fact that in the extensive outbreaks of lead-poisoning from drinking-water, occurring in certain English towns, children have seemed to suffer much less than adults, but the lighter grades of symptoms were probably not taken into account.

There is obviously a danger that in seeking to account for pathological conditions of obscure origin that arise in the presence of an agent like lead, we may, by including symptoms that are due to some other cause, obscure instead of illuminate the true clinical picture.

For this reason, I think that it is best to suspend judgment for the present as to the etiological diagnosis of the cases classified in the table, and wait for the further accumulation of evidence.

The largest group of cases analyzed in the earlier paper was that comprising nineteen cases of chronic generalized neuritis, neuritis with chronic myelitis, myelitis with symptoms of spastic paraplegia, and multiple sclerosis. In fifteen of these cases lead was found to be present, and in four it was absent. I can now add to this group twenty-four similar cases, equally divided between those in which lead was present and those in which it was absent. To these ratios we cannot attach much importance, because the cases do not form a strictly homogeneous group, and those which are essentially alike, are not in sufficient number to warrant statistical conclusions of real value. The greater part of the cases of this group may be subdivided as follows, into:

(1) Those in which subacute myelitis was present, usually associated with profound disturbance of the general nutrition, and generalized neuritis.

(2) Those characterized by the symptoms of spastic paraplegia, without signs of any marked impairment of general nutrition.

(3) Cases, apparently of chronic neuritis.

(4) A case of subacute neuritis, with neuralgic symptoms.

It will be noted that the changes in the spinal cord characteristic of the first two groups are of the nature of chronic scleroses, especially of the long cerebro-spinal tract, and inasmuch as such changes are not usually attributed to lead, it may be well to inquire what part, in the judgment of the best authorities, lead-poisoning does play in exciting diseases of the cord.

I do not propose to reopen the whole discussion of this subject, but will ask you to admit as representing, at the least, a sufficiently cautious and conservative position the views expressed by Professor Schultze in a critical paper accompanying the report of an anatomical examination, published in the *Arch. für Psychiatrie*, for 1885. This writer points out, after carefully reviewing the evidence, that there is as yet no sufficient grounds for the theory that the well-known and constant changes in the nerves and muscles seen in the typical paralysis of the forearm extensors, are secondary to spinal disease (which some observers have believed to be always present even though latent); and that, in the cases where myelitis is found, of which there are but very few on record that are above criticism,[3] the spinal changes do not stand in any coördinate relation to the peripheral changes, and are not coextensive with them, but form an independent lesion, and are, as he thinks, indicative of a later stage and a more generalized form of poisoning than that implied by the neuritis alone.

A similar view has been upheld by Zunker, and other writers. It is only open to one criticism, as it seems to me, and that is, I think, an important one; namely, that the evidence before us is as yet, too meagre to admit of our asserting, with any degree of confidence, that myelitis occurs only in cases of "severe and generalized poisoning." If we admit that it is not the cause of the typical paralysis, and that when it occurs, it is as an independent lesion, we might fairly expect that, like the other independent lesions of the same origin, it should come to the front in some cases and remain in the background in others, in the most unexpected manner, until the contrary has been proved.

This probability gains in weight through the interesting clinical distinction made by Gowers, between the muscular atrophy due to degeneration of the peripheral nerves (the usual type), and that analogous to progressive muscular atrophy, which affects by preference a somewhat different set of muscles from the usual form and runs a different course, and may be of central origin. As to the form which the spinal affection probably takes when it does occur, so far as we may judge from the very few cases on record, it is oftenest of the polio-myelitic form, except that v. Monakow found patches of sclerosis, and Vulpian, in a dog, granular cells and other signs of subacute diffused myelitis. Monakow's case is considered by Schultze as not a clear one, since some of the symptoms and some of the lesions, including the spinal sclerosis suggested the presence of paralytic dementia, but it would be begging the question to assert, that, even then, lead might not play a part in the etiology.

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[3] Neither Schultze nor Oppenheim refers to Dr. Birdsall's case, published in 1881 (Journ. of Neurology and Psychology, N. Y.), nor to those of Moritz (Dreschfeld and Young), London, Journ. of Anat. and Physiol., October, 1880; or of Seguin (unpublished) which are cited by Birdsall.

It has, further, been asserted by Monakow and by Oppenheim, that the cell groups of the anterior horns which appeared to have suffered the most, were those of the anterior and median portions of the horn, and I was especially interested in this statement because the same condition appears to be present in some specimens of my own. Schultze, however, thinks that this relative scarcity of nerve cells in these parts of the anterior horns is sufficiently common in healthy cords, and, although he found it in his own case of lead paralysis, he does not attach much importance to the appearance, unless associated with other signs of destruction of tissue.

Finally, another important change quite generally noted in the reports of the examinations of the cord, is thickening of the smaller arteries.

As a rule, this was associated with nephritis, and it is a condition often seen apparently as a secondary feature, in chronic spinal cases. Still, it is pretty certain that thickening of the vascular walls may occur in various organs, as a direct result of lead-poisoning, and it may have an etiological significance apart from the nephritis, as will be pointed out later.

With regard to the possible influence of lead in the etiology of the chronic system-scleroses, I do not in the least suppose that it is the one special cause, or, mean to assert that it is certainly a direct cause at all, though this is no more intrinsically improbable than that syphilis, ergot, and lathyrus should excite spinal scleroses, as these appear to do, — but it does seem to me possible that lead may at least act as an indirect cause of spinal sclerosis by causing increasing general anæmia, and by exciting hypertrophy of the small vessels.

If we glance over the conditions under which the scleroses in general arise, we find, I think, that among the most prominent are an inherited tendency to degenerative weakness, low or depressed vitality, and toxic influences. Thus, syphilis certainly plays an important part in causing locomotor ataxia, and even in causing lateral sclerosis and that the scleroses associated with paretic dementia; ergot and lathyrus seem to excite lateral sclerosis; and malaria, and other zymotic poisons have been suspected of a similar influence.

The influence of heredity is most marked in Friedreich's disease, of which a form of combined sclerosis is the most conspicuous lesion, but there are many partial or irregular cases on record, which it is difficult to classify, where the local disease appears to be closely associated with a generally poor state of nervous vitality.

A recent suggestion of Lauder Brunton is interesting in this connection. Referring to the importance of the study of the action of drugs on the production of lateral sclerosis, and especially to the observations of Tuczec on the sclerosis of ergot-eaters, he points out that this result is not produced experimentally by injections of ergotine, and thinks that the poverty and famine of the peasants who fall victims to the disease may have a good deal to do with the result. Of course, many well nourished persons suffer from typical lateral sclerosis, but then some other distinct cause, especially syphilis, may come in.

To speak of another possible partial cause in this case, and others of the same kind, I will say that our patient's mother suffered for some years before her death from symptoms which are thus described, from memory, by her daughter:

> . . . "For a number of years she was troubled with diarrhœa at times: then she complained of numbness in her fingers at first (presumedly, afterward in the feet), feeling like coarse sand under the skin, with occasional return of the looseness of the bowels. Then there was swelling of the feet and ankles, which finally disappeared. She had the numbness and diarrhœa for a year before the dropsical symptoms, shortly after which she was unable to sit up for several months. She afterward rallied and was about the house for nearly a year, but remained very feeble, complaining of great soreness across her bowels, and having very little control over her limbs. She had an attack of jaundice in July, and died in October. I do not think her head was affected to any great extent, or her back. She complained of her knees being cold, and wrapped them up even in very hot weather."

Apart from the possibility of relationship of developmental origin, between the disease of mother and son, I was interested in this account from the fact that three other of the patients who belong in the group of which I have been speaking, suffered from excessive diarrhœa before and along with the spinal symptoms. I have never felt sure whether there was any connection at all between them, nor whether to consider the diarrhœa as a partial cause of the anæmia, and thus indirectly of the spinal disease, or as itself a result of some anatomical changes in the sympathetic system.

I will not take the time of the Society by describing the other cases in which lead was found in the urine. I will only say here that the list comprises other cases more or less analogous to the one just described; also two cases of optic neuritis apparently from lead-poisoning; for one of which I am indebted to Dr. J. J. Minot and Dr. O. F. Wadsworth; while the other is of interest as exhibiting symptoms strongly suggestive of paretic dementia and yet not justifying that diagnosis; further, several cases of chronic sensory neuritis, and one highly interesting and rare case of subacute neuritis with distinctly neuralgiform symptoms, nerve tenderness, and impaired electrical reactions, affecting one nerve after another until in the course of a year all four limbs became involved, the legs only to a slight degree. Lead was found twice or three times in the urine, once in considerable amount. For this case I am again indebted to the kindness of Prof. F. C. Shattuck.

With regard to the diagnostic value of the finding of traces of lead in the urine, it is needless to say again that I regard it as of no necessary importance. Dr. Gowers thinks its significance is much less than that of the "lead-line." Perhaps this is true, but a person may have a marked lead-line and yet no impairment of health. This was strikingly shown not long ago at the Massachusetts General Hospital, where a typical and very bad case of universal drinking-water paralysis presented itself. The patient's aunt, who accompanied him, denied all symptoms of the disease, but her gums showed a well-marked lead-line.

I think the result is that it is never safe to say how large a quantity of lead a person may bear, nor how small a quantity may effect him badly, and that we probably do not yet know all the manifestations of the poison.

In conclusion, I wish to say a single word about the source of lead-poisoning in drinking-water, an old but ever new subject for investigation and discussion.

Dr. E. M. Greene, of Boston, has recently been making some observations on this subject which show the danger to which dwellers in our large cities are still exposed.

My own house being unused this summer, and therefore a good subject for study, I asked Dr. Greene to make the following analyses, the results of which are appended.

(1) First drawing of water (Ov in each case) from kitchen faucet; the water having lain in a pipe about seventy feet long: Large amount of lead found.

(2) Water drawn after faucet had discharged for five minutes: Lead still present.

(3) Water drawn after faucet had discharged for fifteen minutes: Traces of lead.

(*3a*) Ibid; and then allowed to remain closed for half an hour: Larger traces than in last case.

(4) Water drawn after faucet had discharged for an hour: No lead found.

(5) Ibid; and then allowed to remain closed for three and a half hours: Traces of lead.

The water from the faucet at the top of the house (five stories) was found to contain lead after it had been running for half an hour.

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OBSERVATIONS ON THE OCCURRENCE OF LEAD IN BOSTON DRINKING-WATER.[1]

BY E. M. GREENE, M.D.,
Pathologist to Boston Dispensary and Carney Hospital.

The attention of the writer was directed to this subject last April, when he became acquainted with a family of which several members were evidently suffering from lead-poisoning, the source of which was not readily apparent. Finally the drinking-water was examined and found to contain a large amount of lead.

In order to determine the frequency with which lead is found in Boston drinking-water, a number of examinations were made of water taken from different parts of the city and coming from Lake Cochituate. In each case the houses were supplied with lead pipes, and the specimens for examination were taken after the water had been allowed to run from two to five minutes. The reagents used for the lead analysis were first tested in an examination of distilled water for lead, and no trace of lead was found. The first two specimens came from the house occupied by the family above-mentioned, who lived on the third floor.

(1) Bennet Street: water, after running two minutes, contained a large amount of lead, very nearly one grain to the gallon.

(2) Same house, from an adjoining room: water, after running five minutes, contained a considerable amount of lead, about one-half as much as the preceding. A similar specimen, sent to Prof. E. S. Wood, was found by him, also, to contain a considerable amount of lead.

(3) Marlborough Street: after running five minutes contained considerable lead.

(4) Hancock Street, first floor: after running three minutes contained much lead.

(5) Same house, next room: from a leaky faucet which was constantly running a small stream, no lead.

(6) Another house on Hancock Street: after running four or five minutes, considerable lead.

(7) Ash Street, first floor: after running several minutes, considerable lead.

Following Dr. J. J. Putnam's suggestions, a number of examinations were then made of water taken from different parts of the same house, and after running for various intervals. The following nine specimens came from 106 Marlborough Street:

(8) Drawn after standing two days and practically for several weeks, much lead.

(9) Same tap, after running full stream for five minutes, considerable lead.

(10) Upper story, first drawing, much lead.

(11) Same, after being allowed to discharge for fifteen minutes, small amount of lead, perhaps a thirtieth of a grain.

(12) Upper story, after running thirty minutes, a slight trace of lead.

(13) Kitchen faucet, after running fifteen minutes, small amount of lead.

(14) Same, after running fifteen minutes, then closed thirty minutes, considerable lead.

(15) Kitchen faucet, after running one hour, no lead.

(16) Same, after standing three and one-half hours, considerable lead.

It would be interesting to know whether injurious results have followed from drinking the water above analyzed. In three of the above places, where I have had opportunities to investigate, such has been the case.

On Bennett Street, the family consisted of a man, his wife and son, all of whom spent the greater part of every day at home. The wife enjoyed fair health. The father and son, especially the latter, a young man, suffered from general debility and marked anæmia. He had been unable to work for several months, and suffered from severe, frequent, abdominal colic, gastro-intestinal disturbances and general muscular weakness. The physician called to attend him made a diagnosis of lead-poisoning before the drinking-water had been examined. After giving iodide of potash, the urines of both father and son were examined and found to contain a considerable amount of lead. The father's urine showed a slight trace of albumen, and contained uric acid crystals and hyaline casts. Under iodide treatment and spring water, after several weeks the colic and gastric disturbance disappeared entirely, and the general health in both cases was much improved.

In the first house on Hancock Street, the family consisted of a middle-aged lady and two adult daughters. The mother and younger daughter were very anæmic and easily fatigued. The former complained of numbness, amounting at times almost to loss of sensation in both arms and general muscular weakness, especially in the forearms. Her daughter was still more anæmic and poorly nourished, although having a good appetite. For a long time she had been subject to severe muscular cramps of short duration and sudden onset, affecting mostly the calves, but often, also, the muscles of the trunk. After taking iodide of potash, the mother's urine was analyzed and found to contain a small amount of lead. The daughter's urine contained much lead, also a slight trace of albumen, and a few hyaline casts.

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[1] Read by invitation before the Boston Society for Medical Improvement, October 28, 1889.

The elder daughter was well nourished and of fairly good color. For several years she had suffered from severe attacks of abdominal colic, attended often with vomiting and diarrhœa, and followed by constipation. These attacks were constantly becoming more frequent and severe in spite of medicine to regulate the bowels and the most careful attention to diet. Her urine was not examined. These three persons were all put on iodide of potash and spring water, with the result of gradual, but complete, disappearance of the above symptoms.

The family on Ash Street, likewise, consisted of a lady and two adult daughters. Although not under the writer's care, he has learned that the daughters have never been strong and well. They are both very anæmic, suffer from constipation, frequent headaches and occasional colic. There is nothing in their habits of life to explain these symptoms. The mother complains only of chronic bronchitis. The urine could not be obtained for examination in this group of cases.

Although these notes are quite incomplete, it is hoped that they will direct attention more strongly to the frequency with which lead is found in common drinking-water, the difficulty of getting the pipes clear of it and the dangers which are liable to follow from drinking-water as ordinarily drawn.

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SOME CLINICAL NOTES ON THE WORK OF M. APOSTOLI.

BY MARY F. HOBART, M.D., BOSTON.

As the work of M. Apostoli has been a source of so much general interest in the last few years, it does not seem amiss to introduce the following clinical notes by a short account of the immediate conditions, under which he conducts his methods.

We find Apostoli busy at the examining table; his assistant taking histories at a desk, and a capable woman attendant watching and reporting the galvanometer and turning the electric current on or off, as she is ordered. On the presentation of a visiting card, Apostoli says some word of welcome which puts us at our ease at once, and we join the group of six or eight interested observers, about the table. Apostoli invites us to examine all the new cases and, from time to time, the older ones of special interest. He calls on his assistant for the various histories, and puts us in rapport with his cases, explains his methods to the newcomers, and answer questions with patience and courtesy. He begins his afternoon clinic somewhat before three and rarely closes before six. A constant attendance of three times a week for several months, affords an insight into his cases and the results of his now celebrated methods. Apostoli's face and bearing denote the hard worker. His dignified manner to the patients, his conscientious attention to the minute details in his treatment, the extreme care with which he notes the symptoms and the success or failure of his applications, inspire the observer with confidence in the man and his devotion to his work. The cases that present themselves for treatment are chiefly those of metritis, following subinvolution, hæmorrhagic endometritis, prolapsed ovaries and tubes, and fibroid tumors; also, cases of hysterical ovarian pain, and occasionally something more unusual.

The statement that this wide range of pathological conditions can be successfully treated by electricity must presuppose first, a careful investigation of the requirements in each individual case, and second, a thorough understanding of M. Apostoli's methods and the many delicate variations with which he adapts them to different conditions. To understand when to apply the positive pole and when the negative, when the carbon and when the platinum electrode, when to faradize and when to galvanize, when the long, fine wire should be used and when the short, coarse one, cannot be acquired in one visit to his clinic, or explained within the limits of one paper.

So much has already been written by, and about, Apostoli, that the medical public is too well acquainted with his instruments to require more than a passing mention of them. The abdominal electrode is of potter's clay, twelve inches long, by eight broad, and one and a half thick, well moistened and enveloped in a layer of tarletan which keeps it from falling apart. The flat, tin plate with rheophore well soldered to it, is imbedded in its upper surface. Apostoli prefers this electrode to all others that he has tried, on account of its perfect adjustment to the skin. He also recommends the warm-water electrode, designed by Dr. Martin of Chicago; it is cleaner and quite as serviceable with a current of less than 200 milliampères, after which, the application is more painful than with the clay.

The intra-uterine electrodes are three:

No. 1. The gas-carbon electrode, of seven different diameters, for canals of various dimensions; used for the positive current of high intensity, its rounded, bulb-like extremity adjusting itself perfectly to the endometrium so as to cauterize it equally on all sides. The shaft of this applicator is notched at intervals of two and one-half centimetres, these notches, during the withdrawal of the instrument, serving to inform the examining finger as to the exact extent of the surface cauterized.

No. 2. The platinum electrode, uninfluenced by the acids which gather about the positive pole, or the intense heat to which it is often subjected; in shape, like an uncurved uterine sound.

No. 3. The intra-uterine, bipolar electrode, by which both poles of a faradic current may be applied to the endometrium at the same time.

The intra-vaginal electrode is on the same pattern as the one last mentioned, but of larger calibre, and can be obtained in two sizes. Fine steel trocars serve for the galvano-punctures.

Any good galvanic battery of sufficient power will answer the purpose of this work. Apostoli, by preference, uses the bisulphate of mercury battery of A. Gaiffe. A reliable galvanometer is an absolute necessity. The best is one manufactured by Gaiffe, with a registering power of three hundred milliampères; it can be easily attached to any battery.

In his employment of electricity, Apostoli calculates its therapeutic value, not only from the transitory application of the current, but from its continuous chemical action. This, he thinks, may last for hours and often for days after the treatment. Apostoli claims that electricity must influence the entire fibromuscular substance, inducing permanent contraction, thereby increasing the firmness of the uterine tissue, while the application of caustics, or astringents, or the use of the curette affect only the diseased mucosa of the endometrium. This applies especially to the cases of metritis and other consequences of subinvolution. On this chemical action, too, he depends in his treatment of salpingitis and old cellulitis. In his treatment of hæmorrhagic fibromata, and also of polypi, which occasion profuse bleeding, Apostoli relies on the cauterizing action of the strong acids, which, according to the well-known laws of electrolysis gather about the positive electrode.

In order to test the action of the different currents and electrodes on uterine tissue, Apostoli first experimented on the cervix with electrodes made especially for the purpose, using, at the same time, a speculum, in order to have ocular proof of the effects he might be producing. For example, after scarifying, he employed different currents and electrodes of different material, thus satisfying himself as to the best method of checking hæmorrhage.

Some questions always present themselves to any one not personally acquainted with his methods.

(1) Can they be carried out antiseptically? Apostoli has proved, that they can be. Disinfecting injections must be given before and after treatment. All instruments are so constructed that they may be sterilized by boiling, before being dipped in carbolic acid. An iodoform gauze tampon is left in the vagina after an application.

(2) Is the application free from pain? This depends, as in other applications, on the endurance of the patient and the skilfulness of the manipulation.

The first treatment will often be painful, but tolerance increases with the number of applications. It is best to inform the patient that sharp, colicky pains may continue for some hours after treatment, but that they will invariably pass off. One important point may be mentioned here — Apostoli does not give a second treatment till the painful reaction of the previous one has passed off.

(3) Does the treatment confine the patient to her bed? Less than almost any other. All the patients, during the months of my observation, were working women, unable to rest while attending the clinic. Apostoli is glad when he can have a patient in a hospital for a few weeks, as he finds his results are more rapidly accomplished; after a strong application, he enforces a rest of one to four hours.

(4) In his treatment of fibromata, for instance, does he really terminate the disease? If the disease consists in the symptoms, yes, in the greater number of cases; if simply in the presence of the neoplasm, no, or only partially; hæmorrhagic symptoms are controlled, the feeling of weight and the gastric reflexes are ameliorated, a sensation of well-being takes possession of the patient and the tumor frequently diminishes in size. In making the first measurements of the patient, Apostoli always measures the thickness of the skin and adipose over the tumor; this may be tense and thin at first, but as the fibroma diminishes in size, the subcutaneous tissues increase in thickness. Hence, without the independent measurement of the skin, one might be easily deceived about the changes in the size of the tumor.

(5) Is the treatment of fibromata by electricity superior to surgical measures? It is, of course, more gradual, requiring many applications. It does not, however, endanger life — like a laparotomy — neither does it, like the latter, compel the patient to relinquish her ordinary employment for a number of weeks. We make our brilliant hysterectomy in the hospital; the patient does not die of shock on the table, the wound heals by first intention, we send her out at the end of three weeks, or a month, and write "cured," or "perfect recovery," in our books. We do not see her, as with weakened abdominal muscles or sense of pelvic inertia, she wearily resumes her household cares. I was told, in Paris, of a sad show of patients collected at the Hôpital Lourcine, one morning in December, 1888; those who had had laparotomy performed during the previous year, a sickly crowd, with aches and pains innumerable. At Apostoli's clinic, I have seen women find immense relief from fibromata, which surgeon after surgeon had refused to interfere with. So, whether we believe or not, that electricity can be a substitute for surgery, we can, at least, feel that we have some alternative to offer in those desperate cases, where the surgeon refuses to operate, or to those timid women who cannot decide to submit to a capital operation.

By permission of M. Apostoli, I will present a few cases whose treatment and progress came under my own observation at his clinic, in Paris, in the latter months of the year 1888, adding further note on his peculiar methods, as the cases themselves may suggest:

Case I. Madame R., fifty years old, newspaper vender. Works from 3.30 a. m. till 7 p. m. Multiple fibroma, extending far above the umbilicus. Uterus measures 13¼ c. m. During twenty years has suffered with menorrhagia; scarcely ever goes over three or four days without losing blood; hæmorrhage profuse. At one time she passed such large clots on the street, that the police would not believe her statements, and sent her to the Maternity for abortion. After two treatments at Apostoli's clinic, she went a whole month without flowing.

October 15th. Galvano-caustic, positive, carbon electrode, 250 milliampères; ten minutes; well tolerated. Rests for half an hour at the clinic; then goes off to her work, from which she cannot long be absent.

November 15th. Doing well; menstruates regularly once a month, flowing only three or four days. Receives her sixth treatment; galvano-caustic, positive, carbon electrode, No. 2; six minutes in two successive cauterizations.

Here let me say that for hæmorrhagic cases the positive current is used, either with the platinum or carbon electrode. The latter electrode is employed when hæmorrhage is severe, and a definite cauterization is deemed advisable. For simply reducing the size of a tumor, the negative current is employed; this is, as a rule, more painful than the positive, and must be used with greater discretion. The introduction of the straight electrode is effected without the intervention of a speculum.

Case II. Madame B., forty-eight years. Interstitial fibroma with profuse hæmorrhages. Uterus measures 9½ c. m. For two years patient has never had more than twenty days between her periods. During the four months preceding her first treatment by Apostoli, she was unable to leave her bed, on account of hæmorrhage. After the first application of electricity, the hæmorrhage ceased; she was less nervous, slept better, urinated less frequently.

October 20th. Galvano-caustic, positive, carbon electrode, No. 3, 184 milliampères; ten minutes; well borne.

November 1st. Walks much better; 200 milliampères; ten minutes.

November 8th. Still loses a little bloody fluid, but feels much better. Does not urinate at all in the night, formerly, five or six times; 110 milliampères; ten minutes; galvano-caustic, positive, carbon electrode, in two successive cauterizations.

November 10th. Galvano-caustic, positive, carbon electrode, 210 milliampères in three cauterizations of three minutes each.

November 20th. No blood since last treatment; 210 milliampères; six minutes.

December 15th. Much better; very slightly indisposed at last menstruation. Walks better, feels perfectly well.

Case III. Madame G., forty-seven years. Multilobular, non-hæmorrhagic fibroma. Patient is director of a public school of five hundred children. Has suffered with inconvenience from tumor for seven years. Lately, it has been increasing in size, and during the last two weeks she has walked with such difficulty that she has been obliged to give up her work. Two of the first surgeons in Paris have refused to operate. The patient looks pale, haggard and thin, and seems very weak; suffers constantly with migraine, has no appetite and says she gets feverish towards night. She has an immense bilobular tumor, the left lobe of which is so sensitive that she can scarcely bear the lightest palpation. The measurements are as follows: Circumference at umbilicus, 100 c. m.; below the umbilicus, at most prominent point of tumor, 113 c. m.; above the umbilicus, 96 c. m.; distance between the anterior superior spines of crista ilii, 29 c. m.; symphysis pubis to umbilicus, 25 c. m.; symphysis pubis to summit of tumor, 45 c. m.; symphysis pubis to xiphoid appendix, 49 c. m.; symphysis pubis to summit of right lobe, 36 c. m.; to summit of left lobe, 47 c. m.

November 8th. First application; galvano-caustic, platinum, positive, 100 milliampères; five minutes. The treatment gives her great pain; she is lifted from the table and laid on the bed for some hours.

November 10th. Has recovered from the immediate effect of the treatment. Less sensitiveness over left side; otherwise, about the same. No treatment.

November 13th. Sensitiveness over left lobe has entirely disappeared; face looks very much less worn. Application, galvano-caustic, positive, platinum electrode, 210 milliampères; five minutes; admirably tolerated. Walks from the table unassisted, and requires no repose.

November 15th. Eats and sleeps better; no pain, and much lighter in abdomen; feels better every way.

November 20th. Has resumed her work, is constantly on her feet, going from one story to another in a large building, in supervising her classes. Feels better than for months previous. Treated the same as last time.

November 27th. Much better. Can walk the long distance, two miles, between her home and the clinic without fatigue. Treatment continued.

The measurements were not again taken in this case before I left Paris, but the patient seemed like a different woman, and was profoundly grateful for the relief afforded by the treatment.

Case IV. Madame D., forty-one years. Fibroma extending to umbilicus. Has suffered for several years with profuse hæmorrhages, lasting five to six days. Has been three times operated for mucous polypi. Between October 1st and November 1st, she menstruated three times, with so much pain that she was kept in bed. After four treatments by Apostoli, at the Hôpital Saint Louis, her period appeared at the regular time, and lasted only three or four days. On the 7th of November, she presented herself at Apostoli's dispensary clinic, and between then and December 15th, when I saw her for the last time, she had had six galvano-cauterizations, always with the positive current, sometimes with the platinum and sometimes with the carbon electrode, the intensity varying from 120 to 200 milliampères. During this time her menstruation was regular, the flow of a normal character, and the tumor was so reduced in size that the summit was felt midway between symphysis pubis and umbilicus.

In some cases, the os uteri will be so inaccessible as to render treatment by galvano-puncture necessary. This is made per vaginam, in the posterior cul-de-sac, at the most salient point of the tumor. The puncturing needle, made of steel, is sharp and fine, and is introduced only one centimetre into the tissues. This operation is performed without anæsthetics, and a negative current of 30 to 100 milliampères is employed.

Case V. Miss G. Large fibroma, filling the entire abdomen and occluding the cavity of the pelvis, like a presenting fœtal head. Cervix found with difficulty, very high, and pressed by the tumor against the symphysis pubis. No possibility of entering the os uteri. Patient suffers with frequent and profuse hæmorrhages and with inability to walk, owing to œdema of legs. She was treated with galvano-punctures, November 25th, December 1st, December 10th and January 5th (when I saw her for the last time). The œdema in her legs had entirely disappeared, she was walking quite easily, and had resumed her work as seamstress, which she had been obliged to give up before coming to Apostoli.

Other cases might be cited to illustrate the improvement of old exudations of cellulitis, or prolapsed tubes and ovaries, under intra-uterine galvanism. Sometimes Apostoli secures a more speedy cure and absorption of the inflammatory masses by galvano-puncture.

In ovarian neuralgia and the hyperæsthesia of hysteria, great relief is afforded by use of intra-uterine faradism, the bi-polar electrode described above, being used for this. In unmarried women, where intra-uterine treatment would be difficult, these symptoms respond well to intra-vaginal faradization.

The methods of M. Apostoli present new fields of usefulness to the gynecologist. The technique is not so simple as it sounds. It requires special study, skilful manipulation, great caution, perfect antisepsis and close adherence to the details so carefully presented in the writings of M. Apostoli himself.

Clinical Department.

CUMULATIVE CONSTIPATION.

BY HENRY M. FIELD, M.D., NEWTON,
Professor of Therapeutics in the Dartmouth Medical School.

The fact that during the brief ten days since I returned from my annual course of lectures at Dartmouth College, I have encountered two cases of cumulative constipation, — one a very pronounced case, under the attendance of a competent physician, and seen by myself in consultation,—affords the *motif* of a brief paper, which perhaps you will kindly accept and insert in your columns.

I say recent experience suggests this communication; but I have long been satisfied that the general profession knew relatively but little concerning the subject of my paper.

I intend, as from necessity, to keep well read up in practical therapeutics; and when the Blakistons published my book upon "Cathartics and Emetics," in 1887,— wherein, in its proper place, cumulative constipation, is discussed,— I was well assured (and I have received no evidence contrawise since then) that myself was the first writer who had given especial attention to this subject; at least, so far as writings in English, French and German are concerned.

A special study of this most uncomfortable condition, for more than ten years past, has increasingly impressed me with the fact of a kind of treacherous obscurity which appears to be inherent to it. That is to say in one sentence: It is not individuals of irregular lives, the ignorant, the indifferent as concerns the essential conditions of health, who are chiefly the subjects of the affection under discussion; and, again, failure in recognition as to the patient's real state, false diagnosis, has quite as often as otherwise fallen to the lot of the careful and competent physician.

In the interest of brevity — and without illustrations drawn from clinical experience, which would expand my promised *brief* paper to the dimensions of a brochure — I will say that cumulative constipation presents generically two typical forms; namely, that attended with diarrhœa and the form without such complication.

The physiological experiments of Brunton are familiar to all; by which it was shown that a gentle tickling of the intestine with a feather would occasion a considerable secretion of mucus with a subsequent downward passage of such mucus. Now the representative patient, whom we have so often seen, will, quite likely insist that he has been regular every day, surely for the last two or three weeks; but quite as often as otherwise has not observed that the usual daily evacuation was not an *evacuation.* The force of habit has prevailed to the extent of procuring regularly diurnal defecation; but, day after day, one-half or one-third of the fæcal quantity which should have been discharged, was retained. Thus, progressingly, the large intestine and, later, the small intestine got *packed;* until at a certain epoch the imbecile *vis medicatrix naturæ* offers its aid. Imbecile, because the secretion, which the irritating fæcal mass has provoked, as in the irritation of Brunton's feather experiment, is poured out at the *locus* (or below) of the cumulation packing: it can avail nothing in dislodging the "fæcal plug," as it might have availed if only the glandular outflow had been brought to bear a little higher up.

After a period of such diarrhœa, with anorexia, the patient seeks medical advice, and he will be exceptionally fortunate if the doctor does not prescribe opiates and astringents. I remember the case of a young lady, seen several years ago, exactly representing this condition; her physician had given his diagnosis — "typhoid fever"— I whispered in his ear after our consultation, "we will cure this typhoid fever within twenty-four hours"; and results verified the promise made.

The second variety of cumulative constipation is the affection under discussion but uncomplicated with diarrhœa, and it is wonderful to observe how "regular" and cleanly a person may be and yet this long-continued daily incomplete defecation, and to remark what an immense amount of fæcal matter the bowels may be induced to pack away; this often, without any serious danger to health and with but temporary inconvenience.

What is the treatment? It may well be that the advent of the doctor has close association with the first approach of danger to the sufferer. What information do our standard text-books give us — whether books devoted to therapeutics or to practice — as to the selection of cathartic materials, in an emergency like this! In a word, our treatment must be progressive and cumulative as has been the condition against which it is directed, and, first, to state it negatively, avoid *senna* and all like *convulsivant cathartics,* unless you would expose the patient to the tortures of colic in its worst form. To give a *saline,* in whatever form or quantity, is little better than to give "an inverted injection"; moreover, there must be an element of peristaltic power beyond what salines possess, and, finally, in the present state, great drenches would be required, forced upon the man who is already more than full, and, to make one more negative point, all cathartics must be avoided which act so high up on the intestinal tract, as, possibly, to involve the stomach in their irritation; vomiting is always more or less imminent in the subject of cumulative constipation, and, if gastric continence be lost early in the treatment of the case, the condition has become serious indeed.

And now for a brief positive statement as to treatment. The patient will pretty surely be an adult; have him kept quiet in bed, watch the stomach and *order every hour one compound rhubarb pill.* The prescription should call for twenty such pills, they should be freshly made and, if nausea threatens, each pill may be lightly coated with silver leaf. Let the patient understand that he will probably require as many as fifteen of these pills before the bowels give evidence of response. Indeed, in the case lately seen in consultation, twenty pills were swallowed — one every hour — and still further help was demanded by means of the fountain syringe and rectal bougie. used by the attending physicians.

The treatment, thus sketched, rarely fails; and when the bowels begin to unload, little or no pain attends the process, although great surprise may be expressed at the quantities of long-stored fæcal matter discharged.

— *Hospital-ity.* — Hospital physician (with a view to diagnosis): "What do you drink?" — New patient (cheering up at the proposal): "Oh, sir! — thank you, sir — whatever you — I leave that to you, sir!" — *London Punch.*

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

BY F. B. HARRINGTON, M.D., SECRETARY.

REGULAR Meeting, Monday, October 28, 1889, The President, DR. W. L. RICHARDSON, in the chair.

HYPERTROPHY OF PROSTATE; SPONTANEOUS FRACTURE OF STONE IN THE BLADDER.

DR. F. S. WATSON showed a specimen of a bladder from a patient aged sixty-seven years who had died recently and who had presented symptoms of hypertrophy of the prostate, stone, cystitis and secondary renal disease of gradually increasing severity for the past two or three years. This specimen shows a small rounded prominent enlargement of the median portion of the prostate, and no accompanying lateral hypertrophy. As is well-known these small median enlargements cause often more marked organic changes in the bladder than the larger lateral hypertrophies in the absence of median enlargement. This growth is an example of the class in which I have formerly advocated operative interference with a view to the removal of the growths when the symptoms due to it render the operation appropriate and in this case the operation could have been satisfactorily accomplished through a perineal section of the urethra, because the distance of the growth from that wound is not so great as to prevent its being reached effectively by the finger. Since publishing a monograph on this subject a year since, the removal of these growths has become much more frequent, and the excellent results in many cases testify strongly to the desirability of further efforts in this direction.

In the bladder, which was the seat of a chronic cystitis and of many diverticula, lay these eleven stones, weighing in all 1050 grains, one as you see has an hour-glass shape and its inner portion is retained within a diverticulum. The interest in the stones lies in one of these, one end of which lay in a diverticulum also, which portion has, as you will see, undergone spontaneous fracture. This end is broken into three fragments which when put in proper apposition fit exactly in such a way as to leave no doubt but that they originally were in this position and formed the complete end of the stone entire. That they underwent spontaneous fracture, as it is called, there can be little question because the patient never had a hard instrument introduced into the bladder, and no injury has occurred to the stones since death. The fracture of the fragments occurred on that end of the stone which occupied the interior of the diverticulum for the reason that this end is rounded and has a roughened surface while the other end beyond the hour-glass contraction of the stone's body is worn smooth and flattened by rubbing against its neighbors, and resembles exactly the surfaces of those which lay free in the bladder.

This is the second time that I have met with this rare phenomenon in my own experience, last year Dr. Debout D'Estrées, of Contrexéville, while here showed me two or three specimens of bladder calculi in which the same condition was present, and stated that it was not very unusual to see such cases at Contrexéville.

The two explanations that have been put forward to account for this condition are: (1) chemical action of the urine of some undetermined nature upon the stone, and (2) force exerted by the bladder in pressing two or more stones together with sufficient power to break them. The latter seems to me the less probable explanation, while the former is suggested by such facts as the sudden alteration in the character of the urine as might occur when beginning a course of alkaline waters as at Contrexéville and elsewhere, and by the fact of such a case as this one in which that part of the stone which lay within the diverticulum and consequently protected from direct friction from the other stones, and also lying soaking in retained urine, was the part broken, while that which lay outside subject to injury from the other stones was rubbed smooth but not broken.

DR. F. I. KNIGHT showed a

PAPILLOMA OF THE VOCAL CORD,

which was of interest as showing the value of cocaine in operating on the throat. It was removed from the middle of the vocal cord of a patient on his fourth visit. Those who were in Vienna fifteen or twenty years ago will remember what a long training most patients with polypi had to go through before they could be successfully removed. Since cocaine in strong solution has been introduced into practice the time has been very much shortened; and in this case I succeeded in getting the whole growth on the fourth visit.

The difficulty of these operations increases in proportion to the smallness rather than in proportion to the largeness of the growth. It is pretty easy to take out a certain amount of large growth, but to remove a small growth entire, of course, is more difficult. One patient in whom I removed the growth at the first visit was a lawyer who was referred to me by a laryngologist in New York, because he lived nearer Boston. I cocainized him (20% solution), removed the growth and he went to Bangor that night.

There is a great difference in the susceptibility of patients to the anæsthetic action of cocaine in the larynx. The throats of these two patients were completely anæsthetized: while in other cases the same solution would produce scarcely any effect. In cases where it is of service, it is of the greatest service as these cases illustrate.

In one or two cases I have had very disagreeable effects from the use of a 20% solution. It is important in applying it in the larynx to apply it with a sponge or with cotton and a special probang in order that as little as possible may be swallowed. In one case where I sprayed the 20% solution freely into the larynx, the patient, a lady, was in a state of collapse after leaving town. The symptoms as described to me were very disagreeable. In one or two cases where I sprayed it freely into the nose of pretty strong male subjects who were not at all nervous or timid I have had disagreeable faintness and irregularity of the pulse; so that I do not feel like using it with entire recklessness as some men do, and in the larynx I use it with a probang or brush so that as little as possible may be swallowed.

DR. A. N. BLODGETT: In two of the many cases in which I have used cocaine, although not in the strong solution mentioned by Dr. Knight, I have seen symptoms of great disturbance in the circulation with active delirium. I feel rather cautious about its promiscuous use, and particularly in the vicinity of the large vessels. I thought in one case the injection might have entered the circulation directly through a channel of a large vessel, and produced the symptoms which were very alarming for a time, but eventually subsided. Another injection fifteen minutes later in the same patient produced anæsthesia. I feel more timid in regard to cocaine than I did before these occurrences, which came in two patients very near together.

Dr. J. J. Putnam read

REMARKS ON THE FREQUENCY WITH WHICH LEAD IS FOUND IN THE URINE, WITH STATISTICS; AND ON THE OCCURRENCE OF LEAD IN DRINKING-WATER.[1]

Dr. E. M. Greene read

REMARKS ON THE OCCURRENCE OF LEAD IN DRINKING-WATER.[2]

Dr. H. F. Vickery: I would like to say how surprised I was to find lead in the water. After taking water for the table, we let it run still longer, and I thought it would be perfectly safe to drink such water; and that was the specimen I gave to Dr. Greene, at his suggestion, and it impressed me very deeply. I don't believe that ordinary lodgers in Boston escape drinking a lot of lead. I have particularly instructed my servants about letting the faucets run a long while, and I thought we were safe. I think it ought to be impressed by physicians upon such patients of theirs as don't own the whole of a house, that they can't take the water in their rooms without drinking lead.

Dr. S. G. Webber: I suppose the reason we are not all troubled with lead-poisoning is that in the majority of people the kidneys act pretty well and lead is eliminated and some are less susceptible than others. If further investigation shows, as it seems it must, that lead is so very prevalent in drinking-water we ought to find some other piping than lead. It is a very serious matter. Very many symptoms have been traced and are being traced to lead. In eleven of the cases mentioned, muscular tremor and nervous debility are recorded and in all these cases lead was found. In Class 3 the symptoms are more serious and would attract attention more particularly perhaps to lead than in Class 2. If it occurs in simple nervous debility it may be that in a good many of the cases which have been ascribed to overwork, to insufficient nutrition, etc., lead may really have more to do with the breaking down of such patients that what we have supposed. It strikes me as a little peculiar that in all the cases of sciatica, lead is absent; but there are only three of these. I suppose that digestive disorders might be found where lead is present. It would be interesting to know how many cases of dyspepsia are caused by lead, and whether that may not be the reason why a good many people have chronic dyspepsia.

The President: Dr. Putnam speaks of drawing water in the kitchen. Did he mean from the cold-water pipe? I supposed that in the houses with modern plumbing the cold-water pipe was entirely disconnected from the general circulation of water in the house and was always through iron pipes.

Dr. Putnam: I have inquired about that of the plumbers; and in Cambridge the pipes are of iron, in Boston in the majority of cases and all the older ones they are of lead, you are not allowed to connect iron piping directly with the main pipe. There must be a certain amount of lead pipe between; and they don't like to put that in because the best iron pipe rusts. They recommended tin-lined lead pipes.

Dr. E. S. Wood: I am surprised to hear that they recommend tin-lined lead pipe, because it is far more dangerous than pure lead pipe itself, there being a little galvanic action set up and the lead is attacked more rapidly than pure lead pipe by the water. That I can show from specimens I have where a little bit of solder has touched the inside; it makes a galvanic action; and after the pipe has been subjected to the action of the water a few months, there will be quite a cavity in the surface of the pipe near the solder.

In connection with Dr. Putnam's paper it strikes me when we come to consider the exceedingly large number of sources of lead and arsenic and the great extent of some of these sources, it readily accounts for the finding of traces of arsenic and lead in the urine of persons suffering with many forms of disease; and the fact that certain persons don't have marked symptoms is largely explained, of course, by the difference in the individual susceptibility to the action of lead and of arsenic. Certainly, as Dr. Putnam has stated, there is a very large number of arsenical wall papers within the houses of the city; and a great many people are exposed to the action of arsenical wall paper and to the action of lead.

With regard to our Boston water. Any aqueduct-water will attack lead pipe much more than hard well-water will, because hard well-water will soon cover the inside of the pipe with an insoluble coating. Where a soft-water has been in contact for a long time with lead, as when the water has not been drawn off, there is a more or less pulverulent lead compound upon the inside of the pipe which does not easily wash off; and in Dr. Putnam's house where the water had not been drawn for a long time, it took sometime to thoroughly remove the lead compound which was only loosely applied to the inside of the pipe.

I might in this connection mention a new source of lead-poisoning; from cement containing a large amount of lead, used in soldering a leaky wooden pipe used for conducting drinking-water from a cistern.

Dr. Putnam: with regard to these various symptoms I don't want to be understood as maintaining that they are due to lead. I took the cases as they came. In certain groups I tried to make examples of them. Apropos of what Dr. Wood said with regard to hard and soft waters is the interesting suggestion in a valuable treatise on drinking-water by a French writer, that although we speak of the salts being deposited on the interior of lead pipes and covering them so that they make them comparatively harmless, yet that very action is probably a chemical action otherwise the salts would be precipitated on the bottom of the pipe, whereas they are distributed pretty evenly on the surface; that if enough chemical action is present to cause the salts to be deposited it may be supposed that chemical action would still go on in spite of the covering of the salts. It seems to me that the danger of lead-poisoning increases for the persons who live in the top of tenement-houses. In the top of my own house after the water ran one-half hour the water still showed a considerable trace of lead.

Dr. W. F. Whitney read a paper on

FATTY DEGENERATION OF THE DIAPHRAGM; A NEGLECTED DEATH-FACTOR.

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[1] See page 530 of the Journal.

[2] See page 533 of the Journal.

MEDICAL AND CHIRURGICAL STATE FACULTY OF MARYLAND.

Semi-Annual Meeting, held at Hagerstown, Md., November 12 and 13, 1889.

FIRST DAY.

The President, Dr. A. Friedenwald, in the chair.

Dr. A. S. Mason, of Hagerstown, delivered the

ADDRESS OF WELCOME,

in which he welcomed the members of the Society to his city.

Dr. A. Friedenwald thanked Dr. Mason and the profession of Hagerstown for the cordial reception given the Society. He spoke of the great age of the Society; its former activity; its subsequent apathy; its rejuvenation, due in part to the activity of the younger members of the Society, so that in the past nineteen years it had done good work and had increased in strength and membership.

Dr. Robert W. Johnson, of Baltimore, read a paper entitled

SOME PRACTICAL REMARKS ON HERNIA,

in which he spoke of the simplicity of early operations in general, and the crude wound-dressings used, many of which were better than some used now. The difficulty of remembering all the various anatomical parts in operating for hernia was great; but practically we did not always regard the layers as laid down by the anatomists, but simply cut with care. A patient should not die of strangulated hernia because the surgeon cannot correctly name the anatomical coverings. The two kinds of hernia were acquired and congenital. This nomenclature is simple and should be used. It is not true that the smaller the hernia the more dangerous, but the smaller the opening. The sac of the hernia may be absent at the seat of a wound. The patient always knows more of the hernia than the doctor, so let him try to reduce it first. A patient on the operating-table reduced a hernia at the last moment, and thus avoided an operation. Taxis should be done if possible, but we should not practice taxis too long before chloroform is given. If all methods fail, give an anæsthetic, and use taxis. Cutting should not be done without good reason. Chloroform produces less vomiting. Strangulated hernia, at the outset, is not dangerous; it is made so by delay. Stercoraceous vomiting is the latest symptom to be waited for. The application of a truss is as important as the fitting of a shoe. It should not be left to the instrument maker. In emergency a skein of worsted knotted may be used in children in whom the natural tendency is to recover. This is good until the truss has been applied. A picture-nail head makes good pressure. The prophylaxis is to avoid constipation and appease their crying. In operation the danger is great without asepsis. His hernia knife, all one piece, nickel-plated and smooth, for cleanliness, was a good instrument to use.

Dr. J. W. Chambers, of Baltimore, thought that an important fact had been brought out. Each case should be treated on its own merits. The question of time in taxis was very important. A hernia should be strangulated for as short a time as possible. Consent of the patient to an operation should be obtained if taxis fail. The danger was not in the operation but in the condition of the gut found when the doctor is called. Temporizing cannot improve the gut, therefore waiting is uncalled for. Strangulated cases need radical operation unless they can be kept up by a truss.

Dr. J. E. Michael, Baltimore, approved the conservatism expressed in the paper read. He thought the view taken of hernia in children was very sensible, and related a case of umbilical hernia in his own practice. He thought a large wooden button covered with chamois made a good truss. In some operations the sac was used as a barrier to the opening, and removed as in Banks' operation. With this operation he had several successful results.

Dr. E. Tracy Bishop, Smithsburg, said that hernia might be prevented in the adult, and this had not been sufficiently noticed in the remarks made. In a case which came to his notice, the patient had cured himself by active exercise, thus developing the muscles and tendons, and narrowing the opening.

Dr. J. McPherson Scott, Hagerstown, reported a case of strangulated hernia in which the operation did not reduce the hernia. He opened the sac, and found the gut in a semi-gangrenous condition, in the upper part adherent to the sac. He found it was an old case of hernia. He did not open the bowel, but broke up the adhesion, and the patient got well.

Dr. R. W. Johnson, Baltimore, in closing the discussion, did not intend to give the impression that one should not operate at once, but that it was not always easy at once to decide if it were a case of strangulated hernia or not. He did not agree with Dr. Michael as to the operation. Dr. Johnson would be satisfied with a truss as long as the hernia did not give trouble. Muscular exercise will not help after the hernia has been caused.

Dr. William Lee, Baltimore, read a paper on

RACHITIS CONSIDERED IN REGARD TO SOME OF ITS SPECIAL SYMPTOMS.

After considering the causes of rachitis, and its prevalence, he spoke of errors in diet, and the lactic acid theory on the cause. It often followed syphilis, but the two diseases are separate and distinct. There is a tendency in rickets not to appear in one region until it has ceased in another. The nervous symptoms come last. In the treatment phosphorus, cod-liver oil (internally and by inunction) had been recommended. Plaster-of-Paris support was necessary in great deformities.

Dr. V. M. Reichard, Fair Play, said that in a negro family rickets often appeared first in the second or third child. Any child in whom the anterior fontanelle remained open after the first year, and there was delayed dentition, he looked on with suspicion.

Dr. J. E. Michael, Baltimore, reported

A CASE OF ANEURISM IN EACH POPLITEAL SPACE; LIGATURE OF EACH FEMORAL ARTERY; RECOVERY.

A stevedore, aged thirty-seven, general health good, no syphilis, no constitutional disease. Two years before, noticed a small swelling in the right ham and noticed pain and swelling, later the left ham similarly affected. Pressure did no good. The left femoral was ligated in the upper part of the thigh with the antiseptic animal ligature. A month later the right was ligated in the same way. A few weeks later the man was walking about, and the aneurismal swelling disappeared. He is now well.

Dr. Wm. B. Canfield, Baltimore, read a paper on

THE EARLY DETECTION OF PULMONARY CONSUMPTION, WITH MICROSCOPICAL DEMONSTRATION OF THE QUICK METHOD OF STAINING THE TUBERCLE BACILLI.

He spoke of the importance of early recognizing consumption, and the necessity of always examining the sputa early in suspicious cases. This gave the best hope of cure, which in his hands has occurred by early recognition of the disease, and the selection of a proper climate. He then went through the process of staining the sputa before the Society, which he did in one minute, showing that such a procedure was not so time-wasting nor difficult for a good microscopist as one would think. He said no one had improved on Koch's method of staining the bacilli.

Dr. Joseph T. Smith read a paper on

TYPHOID FEVER

in which he spoke of the mortality in Baltimore since 1879. The cause is generally the typhoid bacilli in the drinking water. He spoke of fifteen cases in Woodberry. They had taken water from the same pump, which was then locked, and no more cases occurred. The water was examined and typhoid bacilli were found. There is great danger of cesspool contamination. Disinfection would prevent spreading.

Dr. Wm. B. Canfield, Baltimore, referred to the improved condition of Munich since Pettenkofer and Voit had used such stringent measures to stamp out typhoid fever. It was with great difficulty now that the schools could find a case for demonstration.

Dr. George J. Preston, Baltimore, spoke of the effect of high temperature acting mainly on the nervous system. He had had the best effects from antifebrin as an antipyretic.

Dr. W. F. A. Kemp, Baltimore, spoke of a case of his with persistent high temperature on which antipyretics had no effect.

Dr. E. Tracy Bishop, Smithsburg, referred to isolated cases in different parts of his county, all occurring at once and the impossibility of tracing their origin to water.

Dr. T. A. Ashby, Baltimore, thought that drinking water was always directly or indirectly the cause.

Dr. J. W. Humrichouse, Hagerstown, reported six cases in one house due to the drinking water.

Dr. William Lee, Baltimore, was surprised that antifebrin had not reduced the temperature. He had always used it successfully.

Dr. A. Friedenwald, Baltimore, spoke of the danger from depression from too large doses of antipyrin and antifebrin.

Dr. William H. Perkins, Hancock, referred to a very remarkable case in his practice, of typhoid fever which was interrupted by scarlet fever, and after the scarlet fever ended the typhoid fever went on. He had heard of scarlet fever interrupted by typhoid fever but never the reverse.

Dr. J. T. Smith, Baltimore, in conclusion, said that a high temperature did not prevent the case from recovering if the heart was supported by alcohol.

SECOND DAY.

Dr. Randolph Winslow, Baltimore, read

REMARKS ON SOME RECENT CASES OF ABDOMINAL SURGERY.

He said operating early was conservative surgery, as it gives the patient the best chance. There were more laparotomies for other diseases than for abdominal tumors. During the past summer he had done the operation five times for various reasons, and they all recovered.

He also reported

A CASE OF SUPRA-VAGINAL HYSTERECTOMY FOR MULTIPLE UTERINE FIBROMATA; RECOVERY.

He reviewed the three methods of treatment — palliative, by electrolysis and by operation (or the radical method). The palliative treatment consisted of rest, curetting, ergot, etc., but it was too slow. The treatment by electrolysis was still *sub judice*.

Dr. T. A. Ashby, Baltimore, read a paper

THE ORIGIN AND TREATMENT OF PUS ACCUMULATION IN THE FEMALE PELVIS,

in which he advocated freely removing pus from the pelvic cavity by operation when it was necessary.

Dr. George J. Preston, Baltimore, then read

A REVIEW OF HYPNOTISM,

in which he spoke of its antiquity under various names, as practised by the priests. The Chaldeans had the exorcists, sages, and star-gazers. It was practised daily by Isis and Osiris; and the three varieties of catalepsy, lethargy and somnambulism were later appreciated. He then referred to Mesmer and his followers and later to hypnotism as practised at the present day. No one could be hypnotized who did not give himself up to it. It was not easy to find good subjects everywhere. Nervous and hysterical women went under the influence, but the insane could not be affected.

Dr. Joseph T. Smith, Baltimore, thought barriers should be raised against the practice of hypnotism.

Dr. S. T. Earle, Baltimore, then read a paper on the

PRINCIPAL METHODS OF TREATING HÆMORRHOIDS.

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Recent Literature.

Gynecological Electro-Therapeutics. By H. R. Bigelow, M.D. With an introduction by Dr. Georges Apostoli. Philadelphia: J. B. Lippincott Company. 1889.

The merit of this book consists in the fact that it presents in a convenient form the substance of Apostoli's teaching on the subject of gynecological electro-therapeutics. In view of the great interest which is now felt in this subject the book is very timely. In spite of Apostoli's success and the wide-spread knowledge of his methods, the use of electricity, as he recommends it has not become as yet by any means general. This may be due partly to the expense of the apparatus, and partly to the fact that the more brilliant if less safe results by operative measures, have proved more attractive to the surgeon. The increased knowledge of the methods of Apostoli which this book will bring within easy reach of every gynæcologist, will undoubtedly result in a more wide-spread use of this agent. Dr. Bigelow is to be congratulated upon presenting to the profession in so attractive and satisfactory a form the important facts with regard to this agent, and its application, by the acknowledged leader in its use.

THE BOSTON

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ENGLISH IDEAS ON THE SURGERY OF THE PROSTATE.

"THE Treatment of Retention of Urine from Prostatic Enlargement" was one of the subjects announced for discussion at the Annual Meeting of the British Medical Association, last August.

The discussion was opened by Mr. McGill of Leeds, who proposed to limit it to that chronic condition which prevents the bladder from thoroughly evacuating its contents and thus eventuates in chronic retention, and to that class in which the catheter gives only temporary relief. He laid down certain propositions on which he stated his own opinion, and asked for criticism.

I. That prostatic enlargements which give rise to urinary symptoms are intra-vesical and not rectal.

Of the large number of men of fifty-five and upwards who have enlarged prostates only a certain proportion suffer from urinary symptoms, and this difference depends upon the position of the enlargement. Prostates of immense size toward the rectum may present no urinary difficulty while severe urinary symptoms may supervene when the prostate by rectal examination is normal.

II. That retention is caused by a valve-like action of the intra-vesical prostate, the urethral orifice being closed more or less completely by the contraction of the bladder on its contents.

III. That in many cases self-catheterism is the only treatment required.

IV. That when the catheter treatment fails or is unavailable more radical measures are necessary.

Even in cases where there is no difficulty it is sometimes impossible to teach the patient to pass a catheter for himself.

V. That this treatment to be effectual should (1) *for a time thoroughly drain the bladder and* (2) *permanently remove the cause of the obstruction.*

VI. That these indications are best fulfilled by a suprapubic rather than by a urethral or perineal opening.

Mr. McGill entirely disapproves of the operations through the urethra, nor does he think much better of the perineal operation. He speaks highly of Watson's monograph, but differs from his conclusions. He prefers the suprapubic operation because it is more generally applicable, because it can be performed with greater precision and completed with greater certainty, because it ensures complete and most efficient drainage and because it is equally safe. As to the drainage, being more efficient above than below, McGill speaks from experience. His statement as to the comparative safety of the suprapubic operation is merely his opinion, and does not rest on a statistical foundation.

Some of Mr. McGill's suggestions as to the *technique* of the operation are worth mention. He believes the quantity of water in the rectal bag should be less than usually recommended because of possible injury to the rectal mucous membrane. He thinks it better to leave the catheter in the bladder as a guide until its cavity is opened. The bladder should be secured to the deeper part of the abdominal wall by sutures before proceeding to remove the prostate. The prostate should be removed so far as possible by enucleating with the finger and not by cutting.

Of course, the greatest interest is connected with the final and permanent results of the operation. Mr. McGill has tabulated twenty-four cases performed in the Leeds Infirmary. In estimating the final effects of supra-pubic prostatotomy, he throws out seven cases in which a stone was removed, as it might be urged that a favorable result was due to the removal of the calculus, and four deaths, three directly due to the operation and one to pneumonia when the patient was convalescent. Two patients are still under treatment, and one cannot be traced. Of the ten remaining cases eight have continued well, only one of them having required the use of a catheter, and that only after excessive drinking. In one case the operation was very unsatisfactory, owing to the extreme hardness of the prostate. One case was relieved for a time, and then apparently relapsed. His home surroundings were of the worst possible description, and he became insane.

Mr. Edward Atkinson, one of the surgeons of the Leeds Infirmary, had contributed five cases to the list already mentioned. One of his cases was the one that had died of pneumonia. In this case the pathologist found nothing to suggest that any breach of surface had been made. The other four cases were on exhibition. They were all able to tell that they could not only retain, but also expel their urine, that the number of times they required to relieve themselves in twenty-four hours varied from six to ten, instead of from twenty to forty, and that their lives are now not only tolerable, but comfortable.

Mr. Jessop, another of the Leed's surgeons, said that when regular catheterism could be practised without difficulty or hæmorrhage or inflammatory consequences, there was no need for operative interference of any kind; "but when inordinate impediment to the introduction of a catheter was met with, when the patient, after frequent trial, continued to present a hypersensitiveness of urethra or hæmorrhagic tendency, or again when, in spite of antiseptic washings and other preventives, cystitis could not be averted, suprapubic prostatectomy would, he believed, be found to offer a means of escape from impending death superior to any other with which he was acquainted."

Mr. W. Bruce Clarke felt that the great difficulty was in knowing when the operation should be performed. When the use of the catheter failed, it is his habit to make a small opening in the perineum, to slightly incise the prostate in the middle line, if necessary to admit his finger. If the prostate was not much enlarged, the retention of a tube in the bladder, for ten days or a fortnight, was often sufficient to restore to the patient for some time the power of urinating naturally, and at the same time it was quite possible for a pedunculated portion of the prostate to be removed through the perineal opening. When, however, he found that the prostate was considerably enlarged and its base much thickened, he always advised that the suprapubic operation should be immediately performed. He had operated in all on eleven cases suffering from prostatic obstruction, and success had been complete in all save two, who were practically moribund before they sought advice, but in only two cases had he found the suprapubic operation necessary.

Mr. Bennet May has done the suprapubic operation for prostatic obstruction four times, and believes it the only way by which we can hope to afford permanent radical relief.

He has not found removal at all an easy matter. In his experience, the tissue does not readily enucleate or tear, and has to be cut away nearly to the last shred. Hæmorrhage may be serious in an old or feeble patient, but may be minimized by removing only a portion of the collar, as in his own case, in which he so cut away the tissues as to leave a deep indentation in front of and behind the urethral orifice.

He regards formal removal of any portion of the prostate by the perineum as impracticable in most cases. Those cases in which masses have been removed in this way, he believes to have been lucky accidents only.

"On the other hand," to quote his own words, "suprapubic cystotomy is in itself an extremely easy and safe proceeding. . . . By this route it is possible, in a large majority, to remove the obstruction. But this removal adds appreciably, though not greatly, to the danger of cystotomy, principally by the loss of blood and extra time occupied. Consequently it should be done before the patient is much exhausted or enfeebled. In such patients drainage by median perineal incision may be the more prudent course."

Professor Trendelenberg, of Bonn, who was present, drew attention to the advantages obtained by raising the nates so as to partially invert the patient. The intestines, by their own weight, fall towards the diaphragm, and the view of the vesical cavity is greatly facilitated.

Mr. Macewen, of Glasgow, said that perineal prostatectomy had had fair results in his hands, though it left much to be desired. Mr. McGill's operation, from an *a priori* point of view, promised to be much better, as it removed the pathological cause of the disturbance. The patients seen were proofs of the success of the operation. He was convinced that suprapubic prostatectomy was a practical operation, and one which he was inclined to practise.

The discussion is given in full in the *British Medical Journal* of October 19th and is extremely instructive. It will doubtless lead to a greater popularity for the operation. But the great difficulty will still consist in knowing when the operation should be performed and we doubt if surgeons will yet be entirely unanimous in utterly discarding the section through the perineum.

THE PHYSIOLOGY OF HYPNOTISM.

THE interest which is at the present time taken in hypnotism, is seen in the fact that, during the past twenty years. more than thirty different works have appeared on this subject in various parts of Europe and the United States. Some of these pertain to hypnotism in its applications to medicine. This journal has at different times called attention to the earnest endeavors which are being made in some of the hospitals of the old world to utilize this agency in the treatment of insomnia, contractures, paralyses, painful affections of all kinds, even functional derangements of various organs. There is now an International Congress of Hypnotism, containing among its members many of the most celebrated physicians of Great Britain and the Continent of Europe, and whose first meeting in August last was largely attended. A *Quarterly Journal of Hypnotism* presents the scientific aspects of the subject. The enthusiastic advocates of hypnotism claim that it is not only a powerful remedial agent in the morbid conditions above mentioned, but that it also lends itself to a new and hitherto unheard of use, that of reforming drunkards and criminals (!) And quite recently some refractory cases of insanity are said to have yielded to hypnotic influence.

The time has gone by when intelligent men could dismiss the facts of hypnotism with a sneer or blank incredulity; and while it is admitted on all sides that from the marvels and mysteries of so-called "animal magnetism," quacks have reaped a rich harvest in the past, and that much that has been styled hypnotism has been fraud and imposture, nevertheless, it is now generally conceded that there are genuine facts connected with this strange influence of mind over mind that are of the greatest interest, and deserve investigation.

As for the term "animal magnetism," it originated with Mesmer, who died early in this century. Mesmer supposed that a peculiar magnetic influence (called by Reichenbach, *odic force*) passed from the operator to the subject. Braid, in 1842, showed that there was no transmission of a magnetic or other fluid, and that the phenomena of "animal magnetism" are all referable to disturbances of the nervous system and may be brought under the known laws of sleep. He assigned the principal rôle to the subjectivity of the sleeper, and explained numerous somnambulistic phenomena by a morbidly increased sensibility, hyperæsthesia.[1] He showed that as natural sleep is variable in its phases, from deep insensibility amounting almost to coma, to a light dreamy state, in which many of the cerebral faculties are awake while the higher consciousness still remains dormant, so there is the same variability in the induced or mesmeric sleep.

Braid was the first to use the word "hypnotism" (Greek ὑπνος, sleep) to denote the sum of nervous phenomena characterizing the induced or artificial sleep. He understood suggestion, though he did not use the name. "One can play," he says, on "hypnotized subjects as on a musical instrument, and create dreams in their imagination which they accept as reality."

The key-note was struck when the word *hypnotism* was pronounced; henceforth, whatever was genuine in the manifestations of the so-called "mesmerism" was destined to be referred to the agency of laws, not more intricate or mysterious than those which preside over natural sleep and its modifications.

The principal characteristic of the hypnotic state is the suspension of the voluntary and conscious energies, and the dominance of pure automatism — in one of the phases of hypnotism the subject is perfectly lethargic. In natural sleep, too, volition and consciousness are dormant. Natural sleep is occasioned by a torpor or *engourdissement* of the cerebral cells; this comes about through fatigue; Preyer says that it is a species of intoxication caused by retention of the waste products of denutrition. In the induced sleep, this lethargic condition of the cells is produced by suggestion. As to the *mode* of hypnotizing, this seems to be a matter of indifference, provided the attention of the subject is gained, and a sufficient impression made on his sensorium to inhibit the higher faculties and engage the automatic in the way desired. Tiring the cerebrum through fatigue of the visual organs (by gazing at a glass knob, etc.) was Braid's method; sometimes the deferential mental state is obtained by simple verbal suggestion. According to Bernheim, some of the methods by which mothers lull their babes to sleep are a species of hypnotization. This is mysterious, but not more so than the influence which some minds exert over other minds. Do we not continually see persons who have a chilling and depressing influence over us, who, more or less, inhibit our trains of thought? Hypnotism in animals is, doubtless, nothing but an inhibition of the voluntary and even the reflex energies by fear of man; at least much that has been reported under this head seems to have been simply paralysis from terror.

The cortical centres, whose torpor is the immediate antecedent of sleep, may be in a partially active state in natural sleep, and give rise to dreams; now the dream-state characterizes the most interesting phase of hypnotism. In fact, there is not one of the psychical features of the artificially induced sleep that does not find its counterpart in natural dreaming. In dreams naturally occurring, there is sometimes concentration of the attention on certain images and impressions, and frequently (see instances given by Carpenter) the current and complexion of the dream may be determined by suggestion. It is needless to say that this is also a leading phenomenon of hypnotism. And, if we compare hypnotism with somnambulism, we find that the phenomena of the one are matched by the phenomena of the other; the resemblance, in fact, is so striking that physiologists long since denominated the hypnotic state an artificially induced somnambulism. That exaltation of certain faculties and senses, so often remarked in somnambulic subjects, is seen in the "mesmeric" sleep, and is the source of all the marvels connected therewith. The cataleptic rigidity (due to excitation of the motor part of the cortex cerebri), sometimes witnessed in the hypnotic state, is seen in other forms of somnambulism not brought about by suggestion (Carpenter).

From the point of view above stated, several important works dealing with the phenomena of hypnotism have been written. Carpenter, in his "Human Physiology" and in his "Principles of Mental Physiology," presents the argument in a way that has not since been surpassed. Barth's "Sommeil Non-Naturel; ses Diverses Formes" handles the question perspicuously; while by far the most popular work of the kind which has appeared during this decade is Émile Yung's "Le Sommeil Normal et le Sommeil Pathologique." In German, we have the valuable treatises of Heidenhain and Obsteiner. The work entitled "Animal Magnetism," by Binet and Feré, appeared in 1887; it is a part of the "International Scientific Series," and takes its stand-point from the phenomena of natural sleep. The recently published volume of Fredrik Bjornström (whose untimely death we have now to record) is a clear, concise and popular statement of the subject; it cannot, however, in our judgment, rank as a really careful, critical examination of the phenomena of hypnotism, of which he attempts no explanation.

From a therapeutic point of view, the works of Liebault, of Bernheim, of Fontan and Segard, and of Delbœuf are the most valuable.

For the physician, the fact of most interest and importance connected with hypnotism, and the thus far largely inexplicable element, is the dominant influence of one mind over another, and the power which the hypnotic operator has, in some cases, to change morbid states of innervation in his subject, arousing torpid centres, and stimulating the normal energies. But this is sometimes done by the strong will of the individual, apart from any hypnotic suggestion. And do we not ourselves often realize partial exemplifications of this power in our own lives?

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[1] Bjornström. Hypnotism; its History and Present Development. Translated by Baron Nils Posse. Humboldt Publishing Company, 1889.

MEDICAL NOTES.

— Much interest was felt alike by native and foreign physicians in Vienna, in the recent case of Dr. G. Hoffmann, assistant in the Hygienic Institute at Vienna, who fell a victim to glanders whilst conducting experiments with the virus, and who was said to have contracted the disease by using upon himself a hypodermic syringe with which he had made the inoculation of animals with the cultures of the bacteria. It is now authoritatively stated that this method of infection has been disproved by the post-mortem examination, which showed the respiratory mucous membrane to be the starting point of the infection.

— A London paper says that some experiments, in judging distance by sound, were carried out recently by one of the London brigades of the Metropolitan Volunteers. This branch of military tactics is quite a new departure. It was first explained to the men that sound travels at the rate of 1,100 yards in three seconds, and on this basis they were to estimate the distance at which some rifles were being discharged in the darkness. The answers at first were very wide of the mark, some of the men being as much as 150 yards out in their calculations. With a little practice, however, a great improvement was shown, many of the men guessing the distance exactly. The experiments are not as satisfactory as was hoped, and it is thought some time must elapse before judging distance by sound can be relied upon with any certainty.

NEW YORK.

—Subscriptions amounting to $31,000 have been raised in Paterson, New Jersey, for the erection of suitable buildings for the General Hospital of the city.

— Dr. T. Gaillard Thomas, who is now a professor emeritus in the College of Physicians and Surgeons, is engaged in giving a special course of six lectures before the students of that school. The subject of the course is an exhaustive study of "Abortion" from the stand-point of his thirty years' experience.

— Mayor Grant has re-appointed Mrs. Mary Nash Agnew, widow of the late Dr. C. R. Agnew, a member of the Board of Education, and has filled the place of Miss Grace Dodge, daughter of the late William E. Dodge, whose time as a member of the Board is also about to expire, with another lady, Mrs. Clara M. Williams.

— During the last voyage of the North German Lloyd steamship *Fulda*, which arrived November 18, from Bremen and Southampton, four children died of diphtheria in the steerage. The disease was brought on board at Southampton by a child seven years of age who was not known to have diphtheria until some hours after the vessel left port.

— Mr. A. H. Gallatin, the chemist, has called public attention to the danger attending the use of many of the compressed tablets of "soda mint" now so generally sold in the shops. He states that while safe enough when sold in bottles with glass stoppers, they should be avoided when the stoppers are metallic. The decomposing tablets attack the copper in the lead stoppers, and become impregnated with that poisonous metal, as shown by the fact that they are sometimes spotted and sometimes completely stained a bright green. Copper has been extracted from the cotton plugs often placed between the stopper and the tablets, in the laboratory of the University of the City of New York.

— Dr. Wm. Cockcroft, one of New York's old practitioners, died November 19th. He was born July 26, 1817, and was the son of Dr. James Cockcroft, who was a physician of distinction in the city in the early part of the century. He was a graduate of Columbia College and the College of Physicians and Surgeons, and for many years he was engaged in active practice, occupying a home which be subsequently sold to the New York Hospital, which now occupies the premises. He was especially distinguished in surgery. About fifteen years ago he retired from practice, and for some time past he had been in failing health.

— Dr. John S. Billings, U. S. A., of Washington, is this year delivering the Cartwright Lectures before the Association of the Alumni of the College of Physicians and Surgeons; the subjects of the Lectures being "Vital and Medical Statistics." His object, he stated in the first of the lectures, is to treat of these statistics and some of their relations to each other and to scientific and practical medicine and sanitation; the discussion including such points as character of the data required, methods of obtaining them by the census, by registration, and in other ways; relations of physicians to this kind of work, methods of compilation and forms of publication, the best existing sources of such data, and some of the more common fallacies in drawing conclusions from the data as ordinarily published.

— At the meeting of the Medico-Legal Society held November 20th, Dr. Phillip E. Donlin, Deputy Coroner, who read a paper on "The Pathology of Death by Electricity," exhibited the larynx of the lineman Feeks, whose tragic death on a telegraph pole excited so much attention a short time ago. It presented striking evidences of the injuries received from the fatal wire. In the course of the paper he said, "the popular idea that the electrical current passes along the nerves and produces shock, by conducting the current to the brain, is, as you know fallacious. Our knowledge of the great electrical conductive power of water, and the experiments of Dr. Richardson, which show the still greater electrical conductive power of blood, would lead one to suppose — and, in fact, it is proved by the greater damage done to the most vascular organs of the body — that the blood is the great conductor of electricity; and that in all cases of exposure to the electric current the blood is the first to suffer, and the nerve centres and cells the last.

"Unquestionably our knowledge of the manner of death points out clearly that when death is not on the moment produced by the shock of the current it must be produced by the electric current's action (conducted by the blood) upon the ganglia of the heart, causing spasm of the heart muscle, emptying the ventricles and abnormally forcibly propelling the charged and fluid blood to the periphery; producing hyperæmic ecchymosis in the most vascular portions of the most vascular organs. Where death is not instantaneous it must be produced by disorganization of the blood; interference with the circulation causing engorgement of some vital vascular organ. The lungs being the most vascular, death usually results from asphyxia either through the unoxygenated condition of the blood or hyperæmia of these organs."

In reply to a question as to the effect likely to be produced by the infliction of the death penalty by electricity, Dr. Donlin said that the immensity of the power of the machines constructed was such that the purely mechanical result would occasion death. It was possible with those appliances to drive the current of electricity through the tissues with such power as to destroy them, though the amount of power to be employed was clearly within the control of the electrician.

— The forty-third anniversary of the New York Academy of Medicine was celebrated on the evening of November 21st, when Dr. William M. Polk delivered an address on "The Relation of Medicine to Some of the Questions of the Day." In introducing the speaker, the President, Dr. Alfred L. Loomis, stated that while the building fund of the Academy now amounted to $150,000 and it was hoped to realize $70,000 from the sale of the premises now occupied, the subscriptions of $20,000 additional was still needed for the completion of the new building, which it was hoped to make a model of its kind in every way.

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Miscellany.

A CASE OF RECURRENT ILEO-COLIC INTUSSUSCEPTION.

AN interesting case of recurring invagination of the bowel where the fatal attack occurred seven months after the first, is recorded by Mr. Jones (*Illustrated Medical News*, September, 1889 and *London Medical Recorder*, October 1889). A child, aged five months, was noticed to be out of sorts and feverish on July 4, 1888. On July 5th she vomited some bile-colored fluid. On July 6th the vomiting was persistent. On July 7th the author was sent for and found the child very restless, with a temperature of 102° F. The child had passed a normal motion in the morning, the abdomen seemed tender but was not distended, and no tumor could be felt. The vomiting, however, continued, and in the evening some blood and mucus passed by the rectum. Next day more blood and mucus passed, and a distinct tumor could be felt in the neighborhood of the cæcum, and there were signs of commencing tympanites, with bilious vomiting. A diagnosis of intussusception was arrived at, and inflation with a pair of bellows was at once resorted to, under chloroform, but without success. The author next injected warm water, at the same time kneading the abdomen at the seat of obstruction; after using some force, the obstruction was removed, and a great deal of bloody mucus came away with the water. The child made a good recovery. Seven months later, on February 17, 1889, the child seemed out of sorts and the author ordered some Dover's powder to be given freely, as examination of the abdomen gave negative results. Next morning some blood was passed, but no motion, and bilious vomiting had set in. A tumor as large as a sausage could be felt in the old site, so at 3 P. M. chloroform was given and hot water injected at the same time as kneading was applied over the cæcum. After about ten minutes this measure apparently succeeded; the child recovered from the anæsthetic and seemed quite lively. About 8 P. M. the mother unwisely allowed her to take the breast, and half an hour later vomiting set in, and at 10.30 P. M. the child died rather suddenly. On *post-mortem* examination the small intestine was distended with gas; colon empty; no adhesions; no fluid in peritoneal cavity; occupying the cæcal region was an example of true ileo-colic intussusception. The ileum had been protruded through the ileo-cæcal valve into the cæcum.

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THE INVASION OF THE "MASSEUR."

The *Medical Record* thus discourses upon the function of the *masseur*:

"We must beg our readers to keep a close eye upon the *masseur*. He is bearing down upon unhinged humanity with a steady and relentless stride. He develops in the midst of us, he sails over from Germany and England to us, while, if there are any graduates of Heilgymnastik still left in Denmark, Sweden, or Norway, we should like to know it; for it has appeared to us, after some busy morning, that they have all called. Truly, the *masseur* is among us. He is a man of great resources. As his fraternity increases, he does not lose heart, or complain of competition, or seek protection from the State — he simply enlarges his field. . . . Adipose tissue in excess is made to disappear, while glandular tissue, if mammary, is rubbed to make it grow. Massage has now applied itself to diseases of the eye, and granular lids are, *quoad* the granulations, artistically rubbed off; it has invaded the mouth and throat, reducing hypertrophied tonsils, opening the Eustachian tubes, and curing catarrh and deafness. The abdominal viscera were the early and easy subjects for this now illustrious science. The colon's lax vermicular waves are tempestuously hastened, and the modest stream from the smaller bowel has scarcely babbled through the ileo-cæcal valve before it is rushed madly into the rectum. The pelvic organs have of late received the devoirs of this new art; and the uterus has been rubbed and stroked and pommelled, all in pure French terminology, until this martyr-viscus could not help but free itself from adhesions and congestions, and pillow itself gently on its original vesical cushion. Lastly, we learn that the heart is to have massage. The heart has been, we are told by poets, torn and bruised, and bled and broken; but it remains for modern science to see that it shall have *effleurage* and lomi-lomi. There are still a few things left for the *masseur*. Can he not apply *tapotiment* to the brain, or, at least, to the cerebellum? Has he done justice to the kidneys? Might not the ovary receive a course of artistic jabbing before it is removed and bottled? When all fields are conquered, and every viscus springs responsive into blooming juvenescence beneath his learned touch, we recommend the *masseur* to Christian science."

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Correspondence.

VARIOLA AND VARICELLA.

Pawtucket, R. I., November 23, 1889.

Mr. Editor, — All readers must be interested in Dr. McCollom's paper, in the Journal for November 21st, on "Variola and Varicella." Perhaps it would be well to remember, however, what I was taught and have observed, that is, that variola, whether modified by vaccination or not, is the most regular of diseases. On the third day after the chill, be that severe or nearly *nil*, the eruption appears. It comes out in one crop, never otherwise; whereas in varicella there are most usually a succession of eruptions. The eruption of variola never appears of different ages, as is often the fact in varicella, and many of the vesicles are ovoid, which I never saw in variola. An expert can tell, at a glance at the eruption, when the initial chill or backache took place in variola, but not so in varicella. I will here mention that, twelve days (to an hour) after seeing, and freely examining a person ill of confluent variola, in the winter of 1846, modified small-pox began. In 1872, I had a patient who knew, to an hour, when his exposure was; his attack occurred ten days and twelve hours thereafter, a very unusual thing. Authors speak of a sense of nausea or something akin to disgust at the moment when the infection is received. Such was the fact in my case, I was in a profuse sweat, tired and hungry also. When I inspected the sick man, fear did not enter into the case, I went on purpose to see a case of small-pox, and I both saw and felt of him. The regularity of the symptoms of variola — only one crop of the pimples — always round, never ovoid, as is often the fact in varicella, will, I think, enable all to distinguish between variola and varicella. James O. Whitney, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 16, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	607	183	12.00	14.24	1.76	1 76	4.96
Philadelphia	1,010,245	370	120	18 80	11.61	.81	2.16	5.13
Chicago	830,000	286	106	20.65	9.10	3.15	5.60	9.80
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	125	46	15.20	16.80	1.60	3 20	6.40
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	148	41	11.39	14.07	4.02	1.34	6.03
New Orleans	250,000	144	37	9.66	11.04	2.76	1.38	2.76
Cincinnati	225,000	101	—	18.81	11.89	2.97	1.98	10.89
Washington	225,000	99	35	16.16	18.18	2.02	5.05	5.05
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	10	4	30.00	10.00	20.00	—	10.00
Charleston	60,145	31	12	9.69	9.69	3.23	3.23	—
Portland	40,000	10	2	—	20.00	—	—	—
Worcester	78,292	24	15	20.80	—	—	—	16.64
Lowell	71,518	28	11	14.28	7.14	3.57	7.14	3.57
Cambridge	65,552	25	8	4.00	4.00	—	—	4.00
Fall River	62,647	22	7	4.55	22.75	—	—	4.55
Lynn	53,334	14	3	—	14.28	—	—	—
Springfield	40,731	21	2	9.52	9.52	—	—	—
Lawrence	40,619	16	4	12.50	18.75	—	—	12.50
New Bedford	37,253	12	5	8.33	16.66	8.33	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	17	6	5.88	—	—	—	—
Salem	29,011	—	—	—	—	—	—	—
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	14	2	7.14	28.56	—	7.14	—
Haverhill	26,058	5	1	—	20.00	—	—	—
Taunton	25,170	6	1	16.66	33.33	—	—	16.66
Gloucester	24,263	5	1	—	20.00	—	—	—
Newton	21,553	6	0	33.33	16.66	—	16.66	16.66
Malden	19,774	2	2	—	—	—	—	—
Fitchburg	17,534	6	1	—	16 66	—	—	—
Waltham	17,332	5	0	20.00	20.00	—	—	20.00
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	4	2	—	25.00	—	—	—
Quincy	13,728	7	3	28.56	—	—	14.28	—

Deaths reported 2,170: under five years of age 660; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 289, consumption 283, acute lung diseases 233, diphtheria and croup 128, typhoid fever 56, diarrhœal diseases 45, malarial fevers 17, whooping-cough 13, scarlet fever 14, cerebro-spinal meningitis 12, measles 3.

From malarial fevers, New York 8, New Orleans 4, Baltimore 2, Philadelphia, Charleston and Springfield both 1. From whooping-cough, New York 7, Philadelphia 3, Baltimore 2, Cincinnati 1. From scarlet fever, Philadelphia 6, Chicago 4, New York 2, Baltimore and Somerville 1 each. From cerebro-spinal meningitis, Washington 4, Chicago and Cincinnati 2 each, New York, Worcester and Springfield 1 each. From measles, New York 3.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending November 9th, the death-rate was 18.1. Deaths reported 3,321: infants under one year of age 843; acute diseases of the respiratory organs (London) 318, scarlet fever 81, measles 66, whooping-cough 52, fever 46, diarrhœa 43, diphtheria 36, small-pox (London) 1.

The death-rates ranged from 12.2 in Birkenhead to 26.0 in Plymouth: Birmingham 18.2, Bradford 24.6, Hull 19.1, Leeds 18.1, Leicester 18.4, London 16.2, Liverpool 21.1, Manchester 23.3, Nottingham 15.4, Sheffield 21.0.

In Edinburgh 17.0, Glasgow 24.2, Dublin 24.5.

The meteorological record for the week ending Nov. 16, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Nov. 16, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...10	30.01	42.0	44.0	40.0	96	79	88.0	N.E.	N.	17	12	R.	C.	6.30	.39
Monday,..11	30.17	44.0	52.0	35.0	75	85	80.0	N.W.	W.	4	8	C.	O.	0.50	T.
Tuesday,..12	30.21	50.0	56.0	44.0	83	37	85.0	S.W.	S.W.	3	9	O.	O.	1.00	.02
Wednes...13	29.86	51.0	54.0	48.0	87	97	92.0	S.E.	N.E.	5	12	O.	R.	13.15	.30
Thursday,.14	29.69	56.0	62.0	49.0	81	61	72.0	W.	W.	6	17	C.	C.		.0
Friday,....15	30.11	34.0	40.0	27.0	62	66	64.0	N.W.	N.W.	18	24	F.	C.		.0
Saturday,.16	30.57	29.0	37.	21.0	74	46	75.0	W.	W.	9	7	C.	C.		.0
Mean for Week.	30.09		49.0	38.0			79.0								1.11

[1] O., cloudy ; C., clear ; F., fair ; G., fog ; H., hazy ; S., smoky ; R., rain ; T., threatening ; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 15, 1889, TO NOVEMBER 22, 1889.

By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability, granted Major LEONARD Y. LORING, surgeon in S. O., No. 241, October 16, 1889, from this office, is still further extended one month on surgeon's certificate of disability. Par. 3, S. O. 268, Headquarters of the Army, A. G. O , November 16, 1889.

Captain EDWARD B. MOSELEY, assistant surgeon, is relieved from duty at Whipple Barracks, Arizona, to take effect upon the expiration of his present leave of absence, and will report in person to the commanding officer Fort Clark, Texas, for duty at that station, reporting by letter to the commanding general Department of Texas. Par. 4, S. O 268, A. G. O., November 16, 1889.

Captain WALTER W. R. FISHER, assistant surgeon, is relieved from duty at the Presidio of San Francisco, Cal., and will report in person to the commanding officer Fort Assinniboine, Montana, for duty at that station, reporting by letter to the commanding general Department of Dakota. Par. 4, S. O. 268, Headquarters of the Army, A. G. O., November 16, 1889.

The leave of absence on surgeon's certificate of disability granted Captain RUDOLPH G. EBERT, assistant surgeon in S. O 109, May 11, 1889, from this office, is extended six months on surgeon's certificate of disability. Par. 13, S. O. 270, Headquarters of the Army, A. G. O., November 19, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 23, 1889.

RUSH, W. H., past assistant surgeon, ordered to U. S. S. "Saratoga."

URIC, J. F., assistant surgeon. from Coast Survey steamer "Gedney," and to the U. S. S. "New Hampshire."

BRYANT, P. H., assistant surgeon, from the Norfolk Hospital, and to the Coast Survey steamer "Gedney."

SMITH, GEORGE T., assistant surgeon, from the Army and Navy Hospital, Hot Springs, Ark., and to Naval Hospital, Norfolk, Va.

STENE, E. P., assistant surgeon, after examination for promotion, await orders at Boston, Mass.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL OBSERVATION — A Regular Meeting of the Society will be held at 19 Boylston Place on Monday evening, December 2, at eight o'clock. Readers: Dr. G. H. M. Rowe, "On the Necessity of Further Legislation on the Laws for Public Health"; Dr. C. P. Putnam, "Constipation as a Factor in Diarrhea." Election of Associate Members.

T. F. SHERMAN, M D., *Secretary*.

DEATH.

Died in West Somerville, Mass., November 20, 1889, Moses Collins Greene, M.D., M.M S.S., aged seventy-nine years.

BOOKS AND PAMPHLETS RECEIVED.

Enteralgia and Chronic Peritonitis. By A. Jacobi, M.D. New York, N. Y.

The Annual Report of the Health of the Imperial Navy for the 21st year of Meiji (1888).

Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy. 1889.

Over-Strain and Under-Power of Brain. By C. H. Hughes, M.D., St. Louis, Mo. Reprint. 1889.

Taylor's Clinical Atlas of Venereal and Skin Diseases. Parts VII and VIII. Philadelphia: Lea Brothers & Co. 1889.

Ninth Annual Report of the State Board of Health of New York, transmitted to the Legislature, February 26, 1889.

Thirty-Sixth Annual Report of the Trustees of the State Almshouse at Tewksbury, for the year ending September, 30, 1889.

A Successful Case of Laparotomy and Supravaginal Amputation of the Uterus for Rupture. By Henry C. Coe, M.D., M.R.C.S. Reprint. 1889.

The Physicians' Visiting List. (Lindsay and Blakiston's) for 1890. Thirty-ninth year of its publication. Philadelphia: P. Blakiston, Son & Co. 1889.

Transactions of the Tenth Annual Meeting of the American Laryngological Association held in the city of Washington, September 18, and 20, 1888. Published by the Association, 1889.

The Necessity of Increasing Improvement An Address Delivered before the New Hampshire Medical Society, June 17, 1889. By the President, Samuel C. Whittier, M.D., of Portsmouth.

Foods for the Fat. A Treatise on Corpulency and a Dietary for its Cure. By Nathaniel Edward Davies, R.C.S.E. American Edition. Edited by Charles W. Greene, M A., M.D. Philadelphia: J. B. Lippincott Co. 1889.

The Comparative Merits of Abdominal Section and Vaginal Incision in the treatment of Extra-Peritoneal Hematocele, with Report of a Successful Case by Section. By Marcus Rosenwasser, M.D., Cleveland, Ohio. Reprint. 1889.

The Electric Illumination of the Bladder and Urethra as a Means for Diagnosis of Obscure Vesico-Urethral Diseases. By C. Hurry Fenwick, F.R.C.S., England, Assistant Surgeon to London Hospital, etc. London: J. & A. Churchill. 1889.

A Text-Book of Practical Medicine Designed for the Use of Students and Practitioners of Medicine. By Alfred L. Loomis, M.D., LL.D., etc. Eighth Edition. Revised and enlarged with two hundred and fifteen illustrations. New York: William Wood & Co. 1889.

A Treatise on Gout. By Sir Dyce Duckworth, M.D., Edinburgh; M.D. (Hon. Causa), Royal University, Ireland; Fellow and Treasurer of the Royal College of Physicians of London, etc. With frontispiece and illustrations. Philadelphia: P. Blakiston, Son & Co. 1889

A Plea in Favor of Early Laparotomy for Catarrhal and Ulcerative Appendicitis, with the Report of Two Cases. By N. Senn, M D. Ph.D., of Milwaukee, Wis., Professor Principles of Surgery and Surgical Pathology in the Rush Medical College. Chicago, Ill. Reprint 1889.

Reformation in the Practice of Medicine by the Dosimetric Method of Practice; or, the method of small doses of the active principles of plants, mathematically measured and scientifically adapted to the varied abnormal conditions. With biographical sketch of Dr. Ad. Burggraeve. By J. E. Macnell, M.D. Reprint. 1889.

Original Articles.

CLINICAL NOTES ON HERPES ZOSTER.[1]

BY F. B. GREENOUGH, M.D.

There can be no question but that during the last few years many more cutaneous eruptions have been classified under the head of neuroses, that is to say, as being caused by some trouble of the nervous system, than formerly. This being the case, herpes zoster, the neurotic origin of which has for a long time been concealed, assumes a special interest.

Having the records of quite a large number of cases noted in the case-books of the Dermatological department of the Boston Dispensary, a large proportion of which have come under my own observation, I have thought that from their tabulation and comparison, some facts of interest might be obtained. It is true that a certain number of these records, and not a small one, only give the sex and age of the patient with the date of the occurrence of the disease, but on the other hand, in several, more complete records have been made, and in quite a number the anatomical distribution of the efflorescence is given, as also the existence or non-existence of pain.

The whole number of cases of zoster recorded is 255, during a period of sixteen years, that is, from July 1, 1873 to June 30, 1889. Those 255 cases of zoster occurred in 17,741 cases of skin disease, that is to say, the ratio of zoster to general cutaneous trouble is, on our books, a little less than $1\frac{1}{2}\%$. Of the 255 cases 140 were males and 115 females, which would make the ratio about 55% males and 45% females. The statistics resulting from the tabulation of the ages of the cases were rather a surprise to me as it appears from them that the disease is decidedly more frequent between the ages of ten and fifteen, than at any other time, and not only that, but the general average of age in the cases recorded is much younger than I should have expected to find it.

I have divided the patients according to age into groups (of five years up to twenty years old and from there to eighty) of ten with the following result. Up to five years of age 14 cases, the youngest ones being 1 of three months, 1 of two and one-half and three years each.

5 to 10	32	40 to 50	12
10 to 15	59	50 to 60	18
15 to 20	38	60 to 70	17
20 to 30	31	70 to 80	7
30 to 40	26	Over 80 (being 88) . . .	1

From this table it will be seen that 143 of the 255 cases $\frac{5}{9}+$ occurred in patients under twenty years old.

In addition to the data of sex and age, the whole number of cases have a record as to what time of year they were observed, and I have thought that it might be of interest to see whether zoster was more frequent at one season than another, I have, therefore, drawn up the following table showing the number of cases which are recorded as having been observed during each year, which is divided into quarters of three months and I have taken the natural division by seasons, namely: winter, December, January and February; spring, March, April and May; summer, June, July and August, and autumn, September, October and November. From this examination it is found that of the 255 cases 64 occurred during the winter months; 76 during the spring months; 59 during the summer months, and 56 during the autumn months.

It will be noticed that a decidedly larger number of cases are found in March, April and May than in any of the other periods of three months. Besides the question of a greater prevalence of zoster at one season over another, it seemed to me that it would be worth while to see whether it was marked more frequent in one year then in others or whether its percentage was about the same through a period of years, and in order to determine this point I have drawn up the following table. The first two entries are not of a year each and need explanation.

I first made a statistical tabulation of the cases at the Boston Dispensary when they reached the number of 5,000, which they did on November 26, 1876. From that time to July 1, 1878, I tabulated 2,494 cases and from July 1, 1878 up to July 1, 1889, I have reported the statistics yearly to the Committee of this Association. A reproduction of these reports gives the following results as showing the percentage of herpes zoster to general skin diseases during the mentioned periods of time.

July 1, 1873, to Nov. 26, 1876,	5,000	cases,	99	of Zoster,	or —2%
Nov. 26, 1876, to July 1, 1878,	2,494	"	30	"	or +1.5%
July 1, 1878, to July 1, 1879,	872	"	18	"	or +2%
" 1879, to " 1880,	872	"	10	"	or —1.5%
" 1880, to " 1881,	808	"	12	"	or —1.5%
" 1881, to " 1882,	885	"	17	"	or —2%
" 1882, to " 1883,	646	"	10	"	or —1.66%
" 1883, to " 1884,	841	"	11	"	or —1.2%
" 1884, to " 1885,	1,025	"	13	"	or +1.25%
" 1885, to " 1886,	1,094	"	21	"	or —2%
" 1886, to " 1887,	974	"	11	"	or +1.1%
" 1887, to " 1888,	1,072	"	19	"	or —1.4%
" 1888, to " 1889,	1,158	"	16	"	or —1.33%

GENERAL AVERAGE.

July 1, 1873, to July 1, 1889, 17,741 cases, 255 of Zoster, or —1.5%

From this table it would appear that during sixteen years the percentage of zoster has not varied largely, the extremes being $+2\%$ and $+1\frac{1}{10}\%$, which is certainly not a large enough variation to warrant the conclusion that during that time anything like an epidemic of the disease had occurred. On the contrary, it seems to have kept as close to the average, $1\frac{1}{2}\%$, as could be expected to be found in any of the records of average occurrence of disease deduced from statistics going over so long a period, which was not liable to be influenced by marked epidemic increase in certain years. This seems to me to be of especial interest, as if, as my statistics show to be the case, the months of March, April and May show a decidedly larger number of cases of zoster than any other three, we must assume that the disease is influenced by certain factors which must be more prevalent during those three months, and if such is the case, one would suppose that said factors, especially in our New England climate, might be much more prevalent some years than others. I am entirely begging the question as to what these factors may be, but merely want to state that if a certain season of the year seems to be especially productive of zoster we are justified in thinking that certain years ought to be much more so than others, which, according to my statistics is not the case, and although these are not very large in number, an average of over 1,000 cases a year, for a period of sixteen years, ought to give some approximation to the general truth. In view of the result of the investigation as to possible epidemics of zoster, so to speak, I was much interested by hearing from my friend, Dr. Bowen, that at the service at the Massachusetts General Hospital he had lately had many more cases than usual and also that they seemed to be of an especially severe type. I thought it well to overhaul the Boston Dispensary records from July 1st, up to which time my tables extend, and found that during July and August three cases were recorded in 231 of skin disease, that is an average of $1\frac{3}{10}\%$ which is close to the general average of my sixteen years, that is $1\frac{1}{2}\%$. Dr. Bowen was kind enough to look up the record of the Massachusetts General Hospital and found that the number of cases of zoster reported in January, 1889, was three; in February one; in March one; April one; May one; June two; July two and in August seven.

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[1] Read at the Annual Meeting of the American Dermatological Association held in Boston, September 17, 18 and 19, 1889.

This is certainly a very large increase, especially when we consider the great regularity of the numbers running through the preceding seven months, and what is more, the cases were exceptionally severe in type.

These statistics, with regard to the ratio of zoster to general cutaneous affections, the comparative frequency of the disease in the two sexes, the relative frequency of it during the different seasons of the year, the average of its occurrence yearly for the period covered by the records, and the comparative frequency in which it is found in the various periods of age. are all that can be deduced from the 255 cases as a whole. This is due to the fact that during the first few years of the dermatological service at the Boston Dispensary, these facts were the only ones recorded. Later, more complete notes on each case of zoster were made, and we have the anatomical distribution of the effloresence given, and also in a smaller number of cases, the presence or not, of pain noted. It may be said that the two chief reasons for assuming a connection between zoster and some nervous lesions are, first, that in a rough way the eruption is found to be distributed over the branches of certain nerves, and that, in too large a proportion of cases to be considered merely a coincidence, it is preceded, accompanied or followed by a pain, which is decidedly of a neuralgic character, and not to be confounded with the soreness which might be attributed to the eruption itself. Statistics as to these two conditions, therefore, are important in considering this subject.

In 160 cases the situation of the eruption is given, and from a tabulation of them and a classification into groups that covered about the same regions of the cutis, it appears that they were distributed as follows:

Occipital and clavicular region,	3	Clavicular and deltoid	1
Occipital, sternal and deltoid	1	Breast, shoulder and arm	1
Frontal and scalp	1	Brachial	6
Nucha, brachial and breast	1	Brachial and pectoral	1
Facial	11	Digital	1
Cheek and ear	4	Base of thumb	1
Aural	3	Costal	73
Submaxillary	1	Abdominal	8
Cervical	11	Abdominal and crural	1
Cervical and scapular	1	Lumbar	1
Shoulder	4	Lumbar and iliac	1
Scapula, axilla and clavical	2	Iliac	1
Scapula, axilla and pectoral	1	Penis and crural	1
Scapula, axilla and brachial	1	Penis, scrotal and crural	1
Scapula and deltoid	2	Crural	6
Scapula and brachial	1	Leg	3
Scapula and pectoral	1	Gluteal, calf and sole of foot	1
Scapula and costal	1		
Back	1		160
Pectoral	1		

From this table it appears that by far the largest number of cases in any one region are costal, nearly 50% of the whole; next in frequency comes those in which the eruption is situated in the cervical region, branching on to the occiput, the ear and face, clavicle, deltoid and scapular, then the scapular cases, extending over the shoulder to the clavicle, or in the axilla and onto the pectoral region, or down the arm; then the abdominal, with the lumbar and illiac, and last those found on the lower extremities.

With regard to neuralgic pain as a concomitant symptom of zoster, I regret that I only have records in 73 cases, but comparatively small as this number is, some interesting facts are shown by an examination of them. In 17 of these cases, there was no pain; in 37, pain existed; in 19, severe pain was felt.

From clinical observation, I should have said that pain, in cases of zoster, was very apt to be in proportion to the age of the patient, that is to say, that the older the patient was, the more likely was pain to accompany an outbreak of zoster, and it was with much interest that I went through the process of taking the age of each patient in whose case a record on this subject was made, and figuring out the average, which resulted as follows: The 17 cases in which no pain was reported, —19 years; the 37 in which pain existed, +28 years; and the 19 in which severe pain was felt, +44 years.

The general result was satisfactory, but I was rather surprised at the wide range of age in each class, which, while as a whole comfirming what I felt sure from observation must be true, showed what great variations are to be found of general laws, in individual cases.

The ages of the 17 cases without pain were, 3, 4, 5, 6, 6, 7, 8, 13, 13, 16, 16, 17, 22, 34, 45, 47 and 62; average, —19.

Of the 37 cases in which pain was a symptom, 4, 5, 6, 8, 9, 11, 11, 11, 11, 12, 12, 16, 17, 19, 19, 19, 20, 20, 20, 24, 25, 27, 27, 30, 32, 34, 38, 38, 40, 40, 45, 51, 56, 65, 65, 67, 70; average, +28.

Of the 19 cases in which severe pain was noted, 18, 21, 22, 27, 29, 31, 31, 35, 42, 45, 45, 50, 50, 52, 55, 64, 65, 72, 74; average, +44.

It must be understood that these 73 cases are the only ones in which any record as to pain was made, and not be supposed that in the much larger proportion of the 255 cases entered on the books, no pain was felt because not noted. This is due to the fact, that it was not until the department had been running for some time, that records on the subject of pain were made, and even after that, they were omitted occasionally both by myself and by my colleagues who had the service when I was away. I think that the above ratio, therefore, of 73 cases, may be considered a fair one; namely, no pain in 17 cases, some pain in 37, and severe pain in 19. And what seems to me especially interesting, is that the average age of the cases in which a record on the question of pain is made, shows that age does have a decided influence on it.

Assuming that the pain, which in a by no means insignificant proportion of cases of zoster, is found as a symptom, is due to some lesion, or at least, a functional impairment of the nerve over the course of whose cutaneous terminal branches the eruption is developed, the question naturally arises as to whether the sensitive fibres of such nerves are only affected, or whether the nerve as a whole is temporarily in an abnormal condition, that is to say, its motor fibres also having their functions interfered with. As the great majority of cases of zoster are found over the superficial cutaneous branches of nerves, whose motor fibres might be paralyzed without any evidence of such being the case being noticeable, it is not to be wondered at that the lesion of the sensitive fibres is noticed, and that of the motor fibres is not. In two cases that I have known of, however, marked facial paralysis was due to this cause. The first of these cases is one I saw and reported in full, twenty years ago.[2] The patient was seen through the kindness of Dr. John Homans, and the history of the case condensed, is as follows: He had had some thoracic acute trouble which was undoubtedly pneumonia, and which had left some consolidation of lung tissue. During the last part of October, 1868, he had been troubled much with neuralgic pains on the left side of his face and neck. On November 1st, an eruption appeared on the left side of his neck, which he described as consisting of "blisters," some of which he pricked, and a clear, transparent fluid oozed out, the pain continued, but not so severe after the eruption was developed. On November 11th (the eleventh day), he felt a "numbness" of the left side of his face, he could not close his left eye, and his mouth was drawn to the right. He was much troubled by his food getting between his gums and his left cheek, from whence he had to remove it with his fingers. The left eye become congested and painful. I first saw him on November 19th (nineteen days after the eruption had appeared), and found on the neck extending to the thyroid cartilage in front, and running backwards to just below the occipital protuberance, with an extension upwards, behind the ear, several patches of what evidently had been vesicles, some of them being covered with crusts, and others, where the crusts had been removed, showing superficial ulceration, with an angry red areola surrounding them. The left eye could not be closed, the left nostril was flat, and the mouth was drawn to the right. This facial paralysis gradually improved. and when I last saw him, he had recovered the full power of his facial muscles. The eruption, however, left decided cicatrices.

The other case of facial paralysis is one that I did not see until over a year from the time of the eruption, but the case had been under the care of a physician whose diagnosis of zoster, would be accepted by any of his colleagues, even if the history of the case did not confirm it. The patient, a young lady, had not been feeling well, and for two or three days had been troubled with pain in her left ear, something like a sore throat, and a "weakness" in her left eye. Her mother urged her to call in their family physician, and he found no evidence of anything more than a feverish cold — this was on a Wednesday. Her left ear continued to be quite painful, and on Saturday morning when she arose, she found that her face was "twisted," her mouth being drawn to the right. Her physician when he called found an eruption of zoster about her left ear. The facial paralysis has improved somewhat, but it is still quite marked.

Both these cases of facial paralysis due to, or at least coincident with an outbreak of zoster, seem to me to be especially interesting from the fact that the efflorescence was not in the region of the motor nerve (that is, the facial), which supplies the muscles that were paralyzed, but in the neck and more especially about the ear. The connection between the fibres of the cervical branches, the auricularis magnus more especially, with the facial, explains it. In both cases the auditory nerve showed sympathy with the facial nerve.

These are the only cases in which I have felt sure that actual paralysis of motor fibres could be assumed although I have seen a case of crural zoster in an elderly lady where I was in doubt whether the inability to move the limb was due merely to the pain and soreness, or whether there was actually some loss of power in the motor nerves. Zoster ophthalmicus is more likely to come under the observation of the occulist then the dermatologist and in the dispensary cases I have reported there was only one that aproximated to that serious trouble. It was one of the cases classified as "facial" where the eruption was on the forehead and cheek and for two or three days there was a violent conjunctivitis which passed off, however, without any evidence of deeper seated trouble. The anastomoses between the fibres of the cervical nerves (mixed nerves, that is sensory and motor) through the superficialis colli, the auricularis magnus and occipitalis minor with the facial (a motor nerve) and the trigeminus, the ophthalmic and superior maxillary branches of which are sensory while the inferior maxillary not only has sensory and motor fibres but also one branch of the gustatory or lingual belongs to the nerves of special sense and in addition the connection by ganglia with the sympathetic are such as to make it not improbable that impairment of function of one of these nerves coexistent with a lesion of another one, might be conceded as cause and effect. It is on this account that I have thought it worth while to report rather in full the two cases I have seen where zoster in the auricular region was accompanied by facial paralysis.

In looking back over the cases of zoster I have seen, there are a few points that seem to me worth mentioning. Unilateralness is always stated as being one of the characteristics of this eruption, that is to say, that it does not extend beyond the median line. In some cases of costal zoster on inspection this does not seem to be the fact. I have seen several where the efflorescence appeared to extend beyond the median line on the back. A careful examination, however, has shown that in these cases there was a slight lateral curvature of the spine, enough to throw the spinous processes out of the perpendicular and although the eruption appeared to extend beyond the median line, it was on its own side (so to speak) of the spinal column. One of the cases reported as facial is also reported as having the eruption on both sides of the nose. One case was unique, I think, it was that of a boy five or six years old who had a well-marked zoster on his scapular deltoid and clavicular pectoral region on one side, and lumbar iliac and abdominal on the other. I thought that I had put this case on record with an outline showing the distribution of the two-sided eruption, but I cannot find it, and it must be that I spoke of it at some society meeting and drew the outline on the blackboard. I should not be willing to say that I had never seen a case in which one or two vesicles extended slightly beyond the median line in the sternal region, neither should I be willing to say that I had. I have seen two or three cases where I was in doubt on the subject, but the over-lapping, if any, was so slight that only the most careful and accurate measurements could have determined this point.

From my statistics it appears that nearly one-half of the cases of zoster seen are costal, and I should say that a large proportion of the costal cases are distributed somewhere between the fifth and eighth rib, the bulk of the eruption being apt to be on the side of the thorax with usually a few vesicles near the median line behind, and also, but not so frequently I should say, the same in front, although when the crop of vesicles is closely crowded together, they are apt to coalesce. The individual vesicle of zoster does not show the tendency to increase in size that other vesicular or bullous eruptions do. At times we see a hæmorrhagic tendency in the vesicles, and it is different in appearance from any other hæmorrhagic bleb I have seen. The color is rather a blue, or at most a purple one, than red, and although I should say that such cases suffer more from soreness of the skin lesion, I have not been able to convince myself that they show any evidence of more neuralgic troubles than others. Another fact that I have noticed is that the extent or size or angry-looking condition of the efflorescence cannot be taken as an indication of cicatrices being left. Of course, the question as to whether the eruption does or does not leave scars is dependent on whether the papillary layer of the cutis has been distroyed or not, but I do not think that this fact can be determined by the character of the eruption during its vesicular stage.

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[2] Boston Med. and Surg. Journ., Jan. 28, 1869.

On the extremities zoster seems to follow the course of the cutaneous nerves, in most cases being confined to the upper part of the extremity and then generally connected with some manifestations on the trunk also, as in the case of the upper extremity, scapular, clavicular or pectoral, and in case of the leg, lumbar, iliac and gluteal. Two cases, however, showed the eruption only at the terminal end of the brachial nerves, one at the base of the thumb and one on one finger. The only case in which the eruption extended below the knee, was the one recorded as gluteal calf of leg and sole of foot.

While the difference between typical cases of zoster and the other two divisions of herpes, that is, facialis and progenitalis is well-marked clinically I think we see some that are not so easy to classify. I can remember a case of herpetic eruption on the shaft of the penis in a patient whom I had treated for relapsing herpes progenitalis, that if I had not known of his previous attacks, I should have called zoster, and I have seen a case of herpes labialis, or rather facialis as it was not confined to the lips, coming on in connection with a febrile catarrhal attack, which if there had only been one vesicle besides those on and just about one side of the mouth, on the cheek, neck and ear, anybody would have diagnosticated as zoster.

In this connection I want to state a personal experience. Last winter, after suffering from severe neuralgic pains on one side of my face due to the filling having come out of a bicuspid that had become carious at and below the level of the gum, I had that peculiar feeling of numbness and fulness of the mucous membrane of the lower lip at the corner of the mouth which precedes an attack of herpes labialis. This was so marked that I told a friend that evening that I was in for about as nasty a "cold sore" as one could have, and I was much astonished on rising next morning to see that the mucous membrane was normal and had not been raised by a large vesicle. This has been repeated twice since. Of course, the feeling as though a vesicle was there and one really being there is a very different thing, but it seemed to me interesting as connected with well-marked neuralgic pain of known origin.

With regard to the treatment of zoster, I have very little to say beyond that it should be symptomatic, that is to say, that I do not believe the course of the eruption can be aborted or shortened, or that cicatrices can be prevented by any application or the administration of any drug. It is important to prevent any friction or irritation of the skin, at the seat of eruption. With regard to the vesicles I should say decidedly that it was best to let them alone as they do better by being allowed to dry up and scab over than by being emptied artificially, in this respect, I think, being different from most eruptions of a vesicular character with a tendency to become pustular. The eruption can be protected from the air and friction from the clothes in a degree by the use of powders, such as oxide of zinc and starch, or oleate of zinc and starch, or plain flour, for that matter, or by ointments of zinc or boracic acid, etc. I have found in costal cases a large plaster made by spreading diachylon ointment on a piece of linen the right size and shape and put on to be kept on permanently, to work well. When neuralgia exists I do not believe that any topical application will control it, at least I never have been able to do so, neither have I ever got any benefit from quinine or other anti-neuralgic remedies. I must admit, however, that in the cases reported, the fact of their being Dispensary out-patients makes them of not much value as examples of the result of any special treatment. What I have said, however, is borne out by the result of my experience in the very much smaller number of cases of zoster that have come under my observation in private practice. I have not used cocaine but I should doubt whether its use externally would control a really severe case. When necessary, we have always at least a temporary relief in a hypodermic administration of morphine. In cases where pain persists afterwards, and cicatrices are formed, a circular incision around them deep enough to go through the cutis and divide any nerve filaments that might be bound down by cicatricial tissue, might be of value.

I have not attempted in this communication to give any resumé of what is known at the present time of such a thoroughly understood disease as zoster, but having records of quite a number of cases I meant to simply deduce what statistics I could from them. Having done that, there were a few points which had struck me as interesting during my observation of the cases and I have in a brief and hurried way referred to them. The only excuse, however, for my having occupied your time, is the fact of my having quite a large number of cases from which to calculate certain ratios and averages which however uninteresting they may be to listen to, may furnish data for important work in the future.

— The Paris correspondent of the *American Practitioner* gives an account of a case of syphilis of the mouth of unusual origin. The patient, a girl of twenty years, had for three months had superficial lesions of the lips, at first supposed to be eczematous, but afterwards shown to be chancre. The patient was a factory girl, and there was working in the building a young man who had sores about his lips. He, as well as the girl and several others, frequently used the same speaking-tube. It is probable that by placing his lips on the mouth-piece and leaving on it virus, that he infected the others, who also pressed their mouths against it.

PRIMARY CANCER OF THE GALL-BLADDER AND BILE-DUCTS.[1]

BY J. H. MUSSER, M.D.,

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Symptoms.[8] — The most frequent symptoms and signs observed in the course of carcinoma of the gall-bladder are pain, jaundice, emaciation, cachexia, and the presence of a tumor. Digestive troubles, vomiting, constipation, diarrhœa, fever and ascites occur in a considerable number of cases, and are worthy of detailed study.

Pain. — This is a symptom the presence of which was noted 62 times. It was located in the right hypochondrium 25 times; in the epigastrium, 17 times; in the abdomen, nine times; in the hepatic region and right side, four times; in the right shoulder, three times; in the back, twice; in both hypochondria and at the umbilicus, once each. It was associated with tenderness in the right hypochondrium or liver nine times, and was increased by movement or position. In nine instances it was colicky; in three, lancinating; in four, paroxysmal; 16 were of varied character; in three instances dull; and in four, constant. In two instances pain unqualified was noted, and in two it was noted as absent. In a very large proportion of the cases the pain was preceded by a sense of weight or uneasiness in the right hypochondrium. Certainly the pains increased in frequency and severity as the disease progressed. The abdominal pain above noted was due in nearly every instance to peritonitis, so that practically pain in the right hypochondrium or epigastrium of a colicky or lancinating nature is seen in a larger number of cases of cancer of the gall-bladder.

Jaundice. — Observed in 69 cases. Characterized as slight in six cases; transitory, in one; recurring, in one. In 58 instances, however, the jaundice gradually increased in severity until it presented the characteristic olive-green or deep yellow appearances of chronic icterus. In a few instances it developed less than one month before death, and in three less than three months. The jaundice was due to new growth in the ducts, the pressure of enlarged glands, or to catarrhal or purulent inflammation, or the results thereof, that is, adhesion of the walls. In two instances stones were impacted in the common or hepatic duct, and in one instance the hepatic ducts were dilated on account of the passage of a gall-stone a few days before death (Kohn). Accompanying the jaundice in its final stages, delirium in three and coma in five instances were observed. Itching is noted three times.

Emaciation. — Distinctly noted 44 times, but no doubt much more prevalent, as will be seen later. Death often took place from acute complications before the disease had progressed very far. In Wagner's case the flesh was preserved; the patient (a woman) died of peritonitis. In 22 cases debility, weakness or exhaustion are recorded.

Cachexia. — Noted in 14 cases. The deep jaundice prevented the recognition of the characteristic cachexia very frequently, no doubt.

Vomiting. — Due to catarrhal gastritis, to pressure of external growths, or to secondary growths in the viscus, occurred in 39 instances. Usually of the ordinary character, in three instances it was bloody, in one stercoraceous (Lang Heinrich's perforation of gall-bladder and colon, peritonitis). In Pepper's case there was bilious vomiting, no jaundice, and no bile in the stools. Pressure on and occlusion of the duodenum by the enlarged gall-bladder caused the phenomena. In two instances nausea without vomiting and in five with it, took place.

Diarrhœa was present in 15 cases; *constipation* in 23. Diarrhœa occurred more frequently from other causes than perforation of the colon, as intimated by some.

The *appetite* was lost in 15 instances, and *indigestion* marked in 13 cases. These figures are small, no doubt, for these symptoms. Hiccough is recorded four times, ptyalism once and dysentery once.

Fever. — The temperature was subnormal or more frequently normal; eighteen had marked fever, in some a few days before death only, in others as long as one to four months. In three instances it was distinctly intermitting. In every instance it was due to some complication, either inflammation of the bladder or ducts, peritonitis or ulceration. If, therefore, this symptom arises in the course of the suspected disease, it is due to one of these causes. It could be due to calculus impacted in the duct no doubt, although such circumstance was not reported.

Ascites was noted in 18 cases, and was almost always due to pressure on the portal veins, either by the primary growth or the lymphatic glands. In twelve instances there was œdema of the legs, and in two anasarca.

Hæmorrhages were noted in seven instances. The hæmorrhages were due to passive congestion from local obstruction, or to secondary growths, or were of the nature of such discharges in chronic jaundice, and occurred from mucous surfaces remote from the disease.

Tumor. — 68 times a tumor was discovered. The following numbers represent the frequency of location in the positions indicated:

In the right hypochondrium or gall-bladder region . .	27 times
Attached to the liver	10 "
In umbilical region	12 "
In the iliac fossa	4 "
In the flank	2 "
Near the pylorus	1 "

The positions of most frequent occurrence are, therefore, the right hypochondrium and the umbilical region. All the tumors that occurred in the umbilical region were thus placed because of enlargement of the gall-bladder, or enlargement of the liver. If the latter organ is enlarged, a tumor in the umbilical region, particularly to the right of the median line, is probably an enlarged gall-bladder.

Size of Tumor. — This was only noted 13 times. From the descriptions one concludes the organ was seldom larger than normal. It is said to vary in size from a hazel-nut to a child's head; of the latter three instances are recorded. In the course of the disease it may change. This is especially true if fluctuation has been previously detected. By ulceration the contents are discharged, and the tumor disappears. One disappeared after a copious emesis of mucus and bile, the temporary occlusion having been removed. Sometimes they disappear temporarily on pressure (one case).

The tumor was movable as above or with respiration (2); movable on palpation (6); fluctuating (3); fixed

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[1] Continued from page 529 of the Journal.

[8] It should be remembered that in a small percentage of the cases, particularly those of Zenker, there is no record except of the autopsy. It may be assumed, therefore, that the symptoms noted below occurred more frequently than the numbers I have given indicate.

(6); elastic (2); solid (11); smooth (3); in 22 instances hard or firm; in 21 painful or tender; in 9 irregular; three of which are noted above among the "hard," and the remainder are presumably hard. Practically the tumor was movable in eight instances, and fixed or firm in about fifty cases in which the character is recorded.

Shape. — Noted ten times: round (5); oval (1); pyriform (2); cylindrical (1); oblong (1).

Two of the tumors are described as growing rapidly. We may conclude, therefore, that a tumor in the right hypochondrium, or occasionally in the umbilical region, about the size of the fundus of the gall-bladder, hard and painful, and of indifferent shape, is found in cancer of the gall-bladder.

Liver. — During life the liver was found to be enlarged 29 times, five of which times it was irregular or nodular, and four times it was of the same character, the size not stated. The border was thickened (1); smooth (4); hard (3); and the surface tender (4). No significance attends change in the liver except enlargement. This is due to secondary growths, or to dilated channels.

The clinical picture, therefore, of cancer of the gall-bladder is about as follows: The patient, usually a female past forty years, suffers for an indefinite time with a sense of weight, or of uneasy sensations in the right hypochondrium or epigastrium. This is followed by pain, intermitting generally, for a variable period not sufficiently marked to call for local examination, but gradually increasing in frequency and intensity. Jaundice then develops, usually gradually, and upon its occurrence examination is made of the hepatic region. A tumor is generally detected, the presence of which probably had not been suspected, occupying the region of the gall-bladder in health, or found below that region and to the right of the umbilicus. The tumor is usually small and hard, but painful on pressure. With the onset of jaundice the symptoms of indigestion, which were present from the first, become more aggravated, loss of flesh and loss of strength are then noted, and with the persistence of the jaundice its usual deleterious secondary phenomena are induced. In the larger majority of cases these symptoms continue with the final termination of the case, and death is caused by exhaustion or by a cholæmia or by intercurrent disease. In quite a number of cases, however, other phenomena may occur in the course of the disease, the symptoms above noted being essential. Thus, in some cases, fever commences at first about the middle period of the disease and continues to the end, either being intermitting or of continuous character, and always due to the presence of inflammatory complications. Vomiting may be one of the important and persistent symptoms, particularly if there is noted marked increase in the size of the tumor. Constipation, often present throughout the course of the disease, is naturally expected. Diarrhœa attends quite a number of cases, and its onset after an attack of increased pain and local tenderness in the gall-bladder region, associated with fever, is often caused by the occurrence of ulceration between the colon and the gall-bladder. In a few cases ascites is noted, and its occurrence as an accidental complication must be remembered. Throughout the course of the disease the liver usually remains about the normal size.

Diagnosis. — The diagnosis of this affection presents the same difficulties that arise in an attempt to recognize chronic affections of the organs and tissues in the upper central half of the abdominal cavity. Early in the history of the case it is impossible to make a positive diagnosis, while even in its full development the difficulties often are not much lessened, but by attention to the perfect evolution of the disease, as indicated in the symptomatology, coupled with a consideration of its frequent etiological associations, and with exclusion (by the customary means and by recent methods of clinical research in gastric diseases) of disease of the surrounding viscera, carcinoma of the gall-bladder can be more than strongly surmised.

Not much can be learned from the mistakes of writers or the difficulties that they encountered in their observation of this disease. One can readily appreciate their difficulties, however, and easily understand how the disease can be confounded, as it has been, with cancer of the pylorus, with cancer of the liver, and with an ovarian tumor, when one remembers the extraordinary changes of position and structure which malignant disease of the gall-bladder may undergo. Even in the light of the clinical history with the autopsy one can scarcely see how anything but the diagnosis of an ovarian tumor could have been made in Case XII of the table accompanying. In this instance the gall-bladder was enormously distended and adherent to the round ligament, occupying the position which ovarian tumors usually take in the abdominal cavity. In some few instances the tumor was mistaken for a floating kidney: the methods of differential diagnosis we will refer to again.

As aids to the diagnosis, we must first bear in mind the age and sex of the individuals, and the prominent relation of gall-stones to this affection. They appear to be more striking factors in carcinoma of the gall-bladder than in carcinoma of any other organ in this neighborhood. Another minor but important fact in the differential diagnosis is the short duration of the case; the average duration, between six and seven months, is certainly shorter than in cases of carcinoma of the pancreas and carcinoma of the stomach.

Before attempting a differential diagnosis of the various affections with which this disease may be confounded, let us consider the prominent symptoms of cancer of the gall-bladder, and determine, if possible, if there are any characteristics of them that pertain particularly to this affection. Pain is the first and most prominent of these, but does not differ from pain due to any other disease in this neighborhood, and is especially allied to the pain of carcinoma of other organs; of itself, therefore, save in location, it is not a valuable diagnostic factor; nor is jaundice of itself of much value. It indicates that there are obstructions in the biliary passages, but of the nature of these its occurrence gives no clue. Emaciation is common to most of the affections of a chronic nature here found, and it, too, is not of any value. The occurrence of fever is only an index of the occurrence of processes secondary to the malignant growth, processes, too, which may occur secondarily to any obstruction of the biliary passages. In it, likewise, we see no positive value from a diagnostic standpoint. The cachexia, which is insisted upon by so many authors as presenting a valuable aid to diagnosis, simply indicates, if its presence can be determined, that there is malignant disease, the exact nature of which, however, it does not, of course, determine. Indigestion, loss of appetite, the vomiting that possibly occurs, are likewise of small diagnostic value. The occurrence of the tumor is certainly the only distinctive condition of this affection which may be studied independently or without association with the other symptoms. Singly, therefore, the symptoms just enumerated are of no value whatsoever, but taken together, observing their association in the proper relationship which we indicated under the symptomatology, they are of value, and only in that way.

Tumors of the Gall-Bladder. — A word further, however, regarding the malignant tumor of the gall-bladder and tumors with which it is confounded. The size and shape and the position of the former tumor must be borne in mind. It frequently changes in position as adhesions form, and sometimes in shape, as when perforation takes place. Thus a tumor found early in the right hypochondrium may later be found in the epigastrium or about the umbilicus. At first smooth and fluctuating, it may diminish in size and become hard and irregular. Usually noted as fixed, it is sometimes quite movable. It may contain bile or calculi, or simply the clear fluid the accumulation of which is known as hydrops vesicæ felleæ. If the tumor is believed to be the gall-bladder, one must distinguish enlargement of it from accumulation of its contents and enlargement of the organ from disease of its walls. The tumor due to the accumulation of fluid occupies a similar position but is generally much more movable than tumors due to cancerous disease. Their characters have frequently been dwelt upon. They are usually painless, and the nature of the fluid can be determined by the aspirator. Dropsy of the gall-bladder occurs from obstruction of the cystic duct, which may be due to a stone or to the inflammation that follows the passage of a calculus, or to an adherent inflammation which attends some forms of chronic catarrh of the ducts. It may attain a large size, and indeed is usually of larger size than in cancer, is painless, and is generally, although not necessarily, associated with the symptoms of obstruction of the hepatic and common ducts. A history either of gall-stones, or in the writer's experience, more frequently of catarrh of the ducts, antedates the development of the tumor.

The exact nature of a tumor of the gall-bladder can be more definitely ascertained by means of aspiration, and by determining the nature of the fluid contained in the viscus an idea can be formed of the morbid process. The presence of stones can be ascertained, if the gall-bladder is enlarged from that cause, by means of the aspirating needle, too, or by a probe introduced through a canula as has been previously described by various writers. One must remember, however, that calculi are present in cancer of the gall-bladder in the various relations previously described, and, therefore, the presence of a stone as detected by a needle does not necessarily exclude carcinoma. Moreover, one can readily be deceived by this means of exploration, for the hard scirrhus masses very frequently give to the hand the same sensation of hardness, and even the same character of sound, that one gets with stone. The calculi often by palpation move upon themselves, causing a peculiar grating sensation, and even a rubbing sound can be created, and the tumor caused by their accumulation is hard and rough. The enlargement of the gall-bladder due to an accumulation of fluid is usually progressive, and more rapidly increases in size than a carcinoma. One cannot possibly, from the physical characters of the tumor, determine the nature of the obstruction; for a carcinomatous mass small in size may obstruct the outlets of the flow of bile and cause this tumor formation.

A clear fluid would indicate obstruction of the cystic duct; and other symptoms being latent, such obstruction is in all probability due to inflammation with adhesion of the canal. Tumors containing bile indicate obstruction of the common ducts, as by a calculus or by external pressure, the exact nature of which can only be ascertained by the history of the case and by the order of development of the different phenomena. Tumors of the gall-bladder may be due to purulent inflammation with accumulation of pus. The aspirator would reveal the nature of the tumor, while the phenomena of inflammation would contribute to its recognition. Of course, just such condition takes place in cancer of the biliary passages, is frequently an epiphenomenon, and therefore the presence of symptoms indicating it are weighed with the previous symptoms indicative of malignant disease of the gall-bladder. Just as in the other conditions indicated, the nature of a tumor of the gall-bladder cannot be determined without studying also the general symptomatology and etiology in each individual case.

Having considered the characters of tumors of the gall-bladder, other affections which are associated with or are the cause of tumors in the right hypochondriac or umbilical regions must be excluded.

Jaundice from cancer of the pancreas is most common; the differential diagnosis between the two affections is of importance. On the whole, the presence of a tumor of the character of cancer in the region of the gall-bladder, or to the right of the median line, would exclude cancer of the pancreas; in both a tumor is possible. In cancer of the gall-bladder its position is somewhat different; it is certainly superficial and is movable with respiration or with the movements of the liver. The tumor of cancer of the pancreas is deep-seated, in the median line more particularly, and fixed absolutely. Cancer of the pancreas is attended with fat in the stools in many instances, and is more frequently associated with ascites than is malignant disease of the gall-bladder. In both affections there is jaundice, emaciation and cachexia. In both there is abdominal pain, but it is more commonly present in cancer of the gall-bladder. Dyspeptic symptoms appear, however, to be more marked in cancer of the pancreas, and particularly is vomiting of more frequent occurrence.

Cancer of the pylorus presents some symptoms in common with cancer of the gall-bladder. In cancer of the pylorus, however, jaundice is rare, while the tumor is likely to be in a different position, possibly more frequently near the umbilicus than in cancer of the gall-bladder, while it does not attain great size without much more marked gastric phenomena than occur in cancer of the gall-bladder. Pain attends both. In cancer of the pylorus it possibly has a more definite relation to the time of taking food. Usually dilatation of the stomach supervenes upon cancer of the pylorus, while chemical examination of the gastric juice or the matters washed out of the stomach may indicate the presence of cancer of that organ, or at least of organic disease. Disease of the lymphatic glands in the portal fissure, the symptoms of which simulate cancer of the gall-bladder, may be determined by recognizing disease of these structures in other parts of the body, or of distant disease, as carcinoma or tubercle, which may lead to secondary disease in these glands. The tumor due to disease of the lymphatic glands, which simulates the enlarged gall-bladder, of course, only is of the same character as any enlargement on account of accumulation of fluid. The glands themselves cannot be made out by palpation. We can only suspect their presence, therefore, by the means just indicated. This presumption is made more probable by the absence of pain or of local tenderness. Tumors of the omentum and mesentery rarely, if ever, assume the position that tumors of the gall-bladder occupy. A tumor of the mesentery, for instance, does not occupy as limited an area, but will fill the umbilical region and extend into the epigastric or hypochondriac regions; while tubercular disease of the omentum causes a transverse tumor of the abdomen. They rarely produce jaundice, and are likely to be secondary to processes similar to disease of the lymphatic glands in the fissure. If tubercular, ascites is always present, and the general phenomena of tuberculosis, fever, sweats, etc. Tumors of the omentum, non-tubercular, are usually found in a lower position in the abdominal cavity, and if cancerous are associated with bloody effusions in the abdominal cavity. Cancer of the transverse colon may cause symptoms very much like those of cancer of the gall-bladder. Symptoms due to stenosis of the bowel would arise, however, early in the course of the former disease, while they do not occur in the latter. Then, too, the phenomena of each usually differ.

The enlarged and movable gall-bladder may be taken to be a floating kidney. Landau refers to such a case. Mears has recently had a case of tumor of the gall-bladder which was mistaken for a floating kidney, and once in the writer's experience a large, rather firm, rounded tumor in the gall-bladder region, movable on pressure, and after some prolonged pressure disappearing entirely for hours or even a day, when the patient was kept at rest, was thought to be a floating kidney. The tumor had all the characteristics of a solid tumor, but was due to an extremely distended bladder filled with bile, the duct being obstructed by a small secondary carcinoma. One can conceive considerable difficulty, however, in certain instances in the differential diagnosis, particularly in those cases of floating kidney which are attended with colic. The general condition of the patient, and the evidences of alteration in hepatic structure or function are to be considered. For practical purposes cancer of the gall-bladder need not be distinguished from primary cancer of the liver. It can, however, generally be so distinguished by the absence of enlargement of the organ, by the almost constant occurrence of jaundice, by the absence of general hepatic pain, and by the absence of the irregular outline or masses over the surface of the liver. In all probability primary cancer of the liver is of much rarer occurrence than cancer of the gall-bladder and bile-ducts. Ascites occurs more frequently in cancer of the liver than in cancer of the ducts. Hydatid disease of the liver with or without rupture into the gall-bladder and ducts, presents no features in common with carcinoma of the gall-bladder. In both, it is true, the disease is chronic, in hydatid disease eminently so; in both there may be jaundice, in hydatid disease less frequently than in cancer; in both there is a tumor, in cancer more localized, smaller in size and more painful. In cancer emaciation, cachexia and loss of strength go hand in hand, while in hydatid disease these conditions are absent. The associated etiological conditions are far different from those of cancer, while expiration with aspirator or trochar shows the presence of an encysted fluid which has the characters of an hydatid cyst. Hydatid disease of the gall-bladder or of the gall-ducts is usually accompanied by jaundice, by attacks resembling biliary colic, and is frequently associated with fever and with diarrhœa. After an attack of colic in hydatid disease the tumor lessens because of communication with the biliary passages, and the discharge of its contents into the intestinal canal. In cancer the tumor lessens after a period of pain and fever similar to a local peritonitis. In hydatid disease the tumor usually returns; in carcinoma when it disappears it never returns.

In that peculiar disease known as multilocular hydatid disease there are symptoms very like the disease we are studying. There is found a hard nodulated tumor with intense and persistent jaundice, rapid emaciation, prostration and ascites. The tumor of a multilocular hydatid does not occupy the region of the gall-bladder usually but has the other characteristics of cancer. In almost all cases, however, this form of hydatid disease is associated with enlargement of the spleen, a condition always absent in primary cancer of the biliary passages. Of course, in this disease the age and the sex and the evolution of the disease must be remembered.

The occurrence of fever, associated with a tumor or swelling in cancer of the biliary passages, might lead one to suspect the presence of abscess of the liver. The absence, however, of jaundice in abscess of the liver, its rarity in this climate—except after ulceration in some portion of the portal area which can frequently be determined—the enlargement of the liver, the different character of tumor, its increase in size, the entire disease progressing more rapidly, are points in favor of abscess of the liver.

Duration and Course. — The duration of carcinoma of the gall-bladder appears to be about six and two-thirds months. The shortest case was seven weeks; the longest alleged to be four years. It was not included in making up the average.

The course of the disease is uniformly and progressively downward, generally; in some its course is intermitting. The symptoms abate for a while. The progress is modified by complications. Jaundice hastens the end, while the accidental occurrence of peritonitis is always fatal. In two instances death took place from perforation of the bladder into the peritoneal cavity, and in ten instances from peritonitis, and in two from perforation into neighboring organs. Cholæmia was the cause of death in eight instances, exhaustion in twenty-four, marasmus in two. Shock, dysentery, œdema of the lungs, acute pleurisy, and asthma complicated the affection, and were the immediate cause of death, once each.

CONCLUSIONS.

(1) Primary cancer of the gall-bladder is not as rare a disease as we have been led to believe.

(2) It occurs in females nearly three times as often as in males.

(3) The larger number of cases occur before sixty. It is not a disease of as late life as has formerly been taught.

(4) Gall-stones are a possible exciting cause, especially in a person predisposed to carcinoma.

(5) The organ is not generally much enlarged, save occasionally by the secondary process of dilatation.

(6) Metastasis is not widespread, and by continuity of structure neighboring organs are involved.

(7) Adhesions to adjacent organs, and ulceration and perforation are not common.

(8) Pain, jaundice, emaciation, cachexia and tumor are present in the largest number of cases, while indigestion, vomiting, constipation or diarrhœa and ascites are of more frequent occurrence than most persons think, and are important associate phenomena by means of which the disease is recognized.

(9) Pain occurs in about sixty-two per cent. of the cases, at first ill defined, it soon becomes localized to the right hypochondrium, and is lancinating in character.

(10) Jaundice in about sixty-nine per cent. of the cases. Gradually increases in intensity.

(11) Tumor in about sixty-eight per cent. of the cases. (*a*) Situated in (1) the gall-bladder region, (2) to the right of the umbilicus (when it is in the latter location the liver is usually enlarged). (*b*) Character (1) hard or firm, (2) painful and tender.

(12) The progress of the disease is almost always progressive, and toward a fatal termination.

(13) Complications are due to (1) occlusion of the ducts, and secondary effects on the liver and gall-bladder; (2) ulceration and perforation of gall-bladder; (3) the symptoms that arise by metastasis in other organs.

(14) Duration is short, the average being six and two-thirds months.

(15) Death due to (1) Exhaustion; (2) Peritonitis; (3) Metastasis to other organs; (4) Biliary obstruction.

(To be continued.)

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REPORT OF ONE HUNDRED AND EIGHTY-SEVEN CASES OF MIDWIFERY IN PRIVATE PRACTICE.

BY MARIE E. ZAKRZEWSKA, M.D., BOSTON.

I PRESENT here the summary report of these 187 cases in my private practice, recorded in the succession in which they occurred at the beginning of my obstetrical career. My object in so doing is to encourage the young practitioner, who is entering on a field of work, the importance of which is so variously described in the different medical journals. To explain my meaning, let me refer to sentences like these: — "When I am called to a case of child-birth, I prepare myself as if I were going to perform a capital operation"; or, "No physician ought to follow an obstetrical call without taking with him a well-equipped bag, containing instruments, disinfectants, drugs, etc."; then follows a full, and minute list of articles, the expense of which would look like a small fortune to a young practitioner, who is warned to prepare thus, for a normal case of labor.

Such remarks in our journals are evidently intended to instruct and caution, yet must necessarily alarm the young practitioner, in regard to the most natural process in a woman's life. It is within the last decade, that in all the medical journals, East and West, may be found similar paragraphs of caution, more necessary perhaps to the country practitioner who must depend upon self, than to those in towns and cities; but the effect is to engender in the beginner an anxiety, a fear, which finds expression in manners and words towards the patients before, during, and after the lying-in period, and still more, transmitting, as it were, the same anxiety, or creating the same fear among our otherwise most sensible and courageous classes of women.

There already exists a feeling of fear and anxiety about this natural phenomena of child-birth, in just that social grade who possess the best qualifications for propagating the race by raising a number of children.

Thus the fear of losing health by child-bearing and the increase of expenditures for costly preparations, supposed to be essential, make many a couple of moderate wealth consider it beyond their means to have children born to them. If, however, such fears have not been created as yet in all classes of people, still the young practitioner himself suffers an undue anxiety concerning the possible result, when meeting neither the willingness, nor the means to carry out such preparations as he has been taught to think absolutely necessary in modern midwifery. Meanwhile, the richer woman who can provide all the costly luxuries demanded, is victimized by being over-nursed, and petted into a delicate state of health, which she did not experience before child-bearing, which thus seems the cause; but this condition would never have existed, had she been led with confidence and courage towards the great event of a woman's life, the birth of her first babe, and if she had been guided during the lying-in period with that kind of rational treatment, which is called common-sense, and had not been regarded as a sick person who was hovering between life and death, until her full recovery.

Propagation of the race is a mere process of nature, as is proved by the thousands of children who swarm the streets inhabited by our healthy working classes, where neither indifference nor neglect, yet no "preparation as for a capital operation," is practised, where cleanliness is sufficient and disinfectants are unknown. The woman, not the physician, brings the child into the world. The presence of the doctor is simply desirable in exceptional cases when abnormal conditions may occur, and when obstetrical art will assist or supplement nature.

It is for this reason that I maintain that the young obstetrician is preferable to the old, if he is not disturbed by the admonitions of which I have spoken. The younger practitioner has much more patience to wait quietly for the natural process to take its course, the lessons received concerning the action of a normal labor are fresh in his remembrance, and are applied while watching over the case. The desire to establish a reputation of success, of having "everything go well," will prevent meddlesome interference, and will encourage the woman, and strengthen the patience of both doctor and patient; and the young mother will recover far better than with the "experienced" old practitioner, whose patience is worn out, and who understands better how to shorten the healthful suffering of a woman, by using forceps, and hastening the removal of the placenta, and afterwards has to sew up consequent tears, and perform all sorts of "scientific" measures "to bring a woman through."

When I studied clinical midwifery, in 1851–52, in the Royal Charité, of Berlin, the male students remarked that the clinics were rather tedious during the winter months from November to April, as there were so few instrumental labors. The "*accoucheuse-en-chef*" consoled by telling them to wait until summer, and she would provide them plenty of chances to see forceps used. I asked her how this could be; she simply said, "I *make* these cases then." And so it was. During the winter months, when the students in midwifery were young women, they were thoroughly instructed in the course of a normal labor, and in patiently letting nature do the work; consequently we seldom used forceps, and had very little child-bed fever. When the summer came, and young men students took the place of the young women, every third case was made a forceps-case, by untimely rupturing the membranes, or by other meddlesome interference with nature, which consisted chiefly in yielding to the *woman's* wish to put an end to her suffering. Of course, we now had plenty of interesting work, and were removed by whole wards to the isolating building, in order to stop the spreading of fevers, purulent ophthalmia, and peritonitis. When, in 1853, I took the place *accoucheuse-en-chef*, for which I had studied, I followed a different course, teaching the young men minutely the mechanism of normal labor, showing them when and how to assist nature in case of an abnormal deviation, using for this purpose the manikin, instead of the living woman; and not one single time, were we removed to the isolating building during that summer, and the young men were as well, even better satisfied with the knowledge gained thus, than in witnessing the use of forceps by the *accoucheur-en-chef*.

Of the three branches which constitute our profession — Surgery, General Diseases and Obstetrics — the latter is the only department in which we can approach to something like science. A diagnosis of pregnancy can almost always be made from the time a woman is six weeks' pregnant, and the prognosis can be deduced in advanced pregnancy with much more probability of certainty than in any condition belonging to the two other departments.

The position of the child in the uterus can be ascertained; with a little practice, the size of the pelvis can be correctly measured simply by the hand, provided the practitioner knows the size of the span of his fingers, and has paid attention to measuring the small pelvis when for whatever purpose, an internal pelvic examination is made of the condition and relations of the bones of the small pelvis.

During labor, if possible at its very early stages, the presentation of the child ought to be correctly ascertained, and this can be done, even before the os uteri is open, if the hand has been well trained; but it *must always* be ascertained before the membranes break, and therefore examinations should take place only between the pains when the membranes are soft and no danger exists of an untimely rupture; this must be repeated until the practitioner has obtained knowledge of the exact presentation. Then a prognosis, so far as the birth is concerned, can be given, provided the dynamic conditions are normal. Yet here, again, we often meet with new difficulties in the power of perception in the attendant. What are the normal dynamic forces? They are different in every woman independent of her size or appearance. It is far oftener the physician's patience gives out than the strength of the patient, and instrumental interference is resorted to, less for the benefit of the woman than for the relief of the physician from the tedious watching and constant work of encouraging the woman during the passage of the child through the pelvis.

It is a marvellous process, and every time I witness it, it is as new as at the first time when I stood by and watched a woman working to bring forth her babe. I know from experience that the older I grow the less faith I have that the woman will accomplish the task, when I hear her declare that all her strength is gone. I am even obliged to recall to my own mind, the rules I laid down to the students, that patient waiting will teach me and her better, and that she will have the strength needed, that she will accomplish the work far safer than I can do for her artificially, and with less danger of injury to the child.

It is for these various reasons that I have made the statistics of these cases in order to prove by number what cannot otherwise be affirmed. In order to simplify the records, I call all first positions, when the diameter avoiding the rectum is covered and the dorsal side of the child is against the abdominal walls of the mother. The second positions when the diameter in which the rectum lies is covered with the dorsal side of the child against the abdomen of the mother. The third and fourth positions when the dorsal side of the child lies in the dorsal side of the mother in the first or second diameter.

If such a correct diagnosis is obtained, the pelvis is well measured inside with the fingers from promontory to lower edge of pubic symphysis, and the relation of the latter to the os coccyx and the position of child is ascertained, then the physician's work is done. If the dynamic forces should now fail, easy and correct assistance can be rendered to bring forth the child; otherwise simply patience has to be exercised in order to avoid all artificial stretching of the os uteri and adjacent parts thus preventing the frequent tears of these delicate organs.

The active part of the physician's work begins only after the woman has done her work and brought the child where it can be fully seen. Then support of the perineum is to be given, and given with such understanding as to again imitate nature, preventing, if possible, the tearing of this so thinly stretched organ.

After the child is fairly in the world comes the real test of the physician's good sense, namely, in the delivery of the placenta. Here again, in most cases, nature will do the work. I always advise my students to place the woman on her back if not delivered in that position, as soon as the child is removed, thus causing a natural return of the abdomen and its contents and its walls to their place, before I even touch the placental portion of the cord. In this position the uterus will soon regain its tone, contractions will recommence and thus will be expelled what no longer belongs there, namely, the placenta. An occasional gentle touch of the abdomen under the bed-clothing will convince a practised hand whether the uterus has resumed its activity or not. If the placenta is entirely detached, the uterus will appear hard under the abdominal wall and the expulsion of the placenta into the vagina will take place within fifteen minutes in the case of a primipara, with but few pains. If it is not entirely detached as is most frequently the case in the multipara, or in premature births, then provided there is no hæmorrhage, I teach to wait quietly for an hour or more thus leaving nature to perform its task, and never interfere by putting the hand into the uterus; such interference being, I have no doubt, often the cause of inflammation and fevers. Only in case of hæmorrhage or appearance of abnormal pains do I interfere with nature.

As soon as the placenta is felt in the vagina, and is not expelled by the muscular contraction of this organ, then a moderate pull on the placental cord will assist in ejecting it from the vulva, and with it will be brought the membranes and such clots of blood as may have been formed in the process of loosening. This simple method I call self-expulsion; and you will find that my statistics prove this to be the most frequent form.

During the last four months of my holding the position as *accoucheuse-en-chef* in the Royal Chartié, of Berlin, Professor Credé held the office of clinical professor, to which he was appointed after the death of Prof. J. H. Schmidt, my steadfast friend and teacher. Dr. Credé was ambitious for success *à tout prix.* During the winter preceding his appointment he acquired some notoriety in his efforts to gain renown by inventing a new — his own — method for delivering the placenta — the Credé Method. As soon as he had the direction of the *clinique*, he taught practically, during *his hour* of attendance, what he had before taught theoretically; while I, during *the other* twenty-three hours of the day, very unwisely perhaps, not only discouraged the young men from following his method, but when teaching the midwives, actually opposed his method.

The Credé method has been followed by many of his pupils, and even gained some reputation in this country; but now Dr Credé is making an effort to add to his fame and this time it is by renouncing lately his "method," acknowledging it to be an error, and admitting that it may have been practised to the detriment of many a woman.

I have recorded these 187 cases on a paper which I had lined and printed for the purpose; they are selected from my private practice in preference to that of the hospital; the latter can never give a criterion for the former, because the conditions and surroundings of the patients, are so utterly different in their homes from those in institutions. Also, I have collected these cases from my general records commencing in 1855, and giving them in just the succession in which they occurred, not making intervals of years between. They are, therefore, really a record, consequently include all classes and conditions, from the mechanic's wife, who could not even afford the attendance of a nurse, to the wife of the wealthiest man in the best of surroundings, who employed a nurse for months. But no dispensary patient is recorded among them.

Although I tried to make a record of all my practice, even of the slightest consultation and prescriptions ordered, yet I did not in the earlier years keep it as minutely as I might have done, had I supposed I should ever write about it, or wish to make use of it scientifically. I keep my records chiefly for my own instruction and satisfaction, in order that I may from time to time test thus the clearness of my perceptions.

I will commence by giving statistics relating to the age of the patients. The youngest primipara was 18 years old; the oldest was 41 years old; 75 primiparæ are recorded, the ages varying between 20 and 30 years. The ages of the multiparæ varied up to nearly 50 years; and the eleventh child-birth was the highest number in an individual.

The hours of birth I have not strictly kept; 60% of those whom I recorded were born between midnight and noon.

There were, with two pairs of twins, 183 infants in all, 99 boys and 84 girls; 4 were miscarriages under 16 weeks.

I had almost every infant weighed; the smallest living child was in a multipara, weight 2 lbs.; another one was 4 lbs. One pair of twins weighed 5½ lbs. and 4½ lbs., each; one pair, 6 lbs. and 7 lbs., each.

10	infants weighed	6 lbs. net
56	" "	7 " "
74	" "	8 " "
31	" "	9 and 9½ " "
1	" "	10 " "
2	" "	11 " "
1	" "	12½ " "

Duration of labor from first pain to birth of child: 70 from 1 to 10 hours, 64 from 10 to 20 hours, 32 from 20 to 30 hours, 12 from 30 to 40 hours. Of these 12 cases 7 were 36 hours. There were besides these, one each of 48, 54, 60 and 70; and two of 72 hours.

These 187 cases also include 4 miscarriages, of from 12 to 16 weeks' pregnancy, and 20 premature births, of from 20 to 36 weeks' pregnancy, leaving 163 cases of full time.

POSITION OF CHILD PRESENTING AT TIME OF LABOR.

Vertex presentation, I.	130
" " II.	34
" " III.	3
" " IV.	8
Breech presentations (3 times I., 1 case IV.)	4
Foot " (2 times III., 1 case I.)	3
Knees " (IV. position)	1
Face " (IV. position)	1
Transverse position, with prolapsed cord	1
Vertex position, high in large pelvis, because the brim of pelvis contracted	1

I am sorry that I did not always keep record of the time when the membranes ruptured. I marked it only in extraordinary cases; namely, in case of the 4 pounds' infant; membranes ruptured 8 days, that is 8 times 24 hours before labor; in the case just mentioned of contracted pelvis, rupture 47 hours before labor; in a case of completely adhered placenta, rupture 26 hours before labor.

Among the normal yet protracted cases of labor, there is a multipara, where the membranes ruptured 48 hours before there was a sign of labor. I find four others recorded, rupture at 15, 22, 22 and 25 hours before birth; the latter case was a primipara, labor lasted 6½ hours, during which she took eleven dollars' worth of sulphuric ether, yet recovered well, and was strong in four weeks. Several times I have noted down that membranes ruptured with the passing head of the child, and a number, rupture from 15 to 60 minutes before passage of head from vulva.

I have explained my use of term, "self-expulsion of placenta"; this occurred unassisted in 173 cases; in 10 cases a partially loosening placenta, requiring introducing of the hand and artificial removal on account of hæmorrhage; in three cases, there were completely adhered placenta requiring forcible removal, after waiting two hours or more; only one case of partial placenta prævia occurred. All these cases made a speedy and good recovery.

I may here add that most of the hæmorrhagic cases were among the miscarriages, that is less than 20 weeks time of pregnancy; but few occurred in normal labor.

The normal labors were 142; that is, in every respect, birth of child and delivery of placenta requiring no assistance.

Among the infants born, were four stillborn, so decomposed that the skin peeled off; two died from application of forceps, heads above brim of pelvis. Forceps were used in five other cases; in one, because of unyielding os coccyx, head of child having been on the perineum for nine hours; the whole labor was 36 hours. The recovery of all these patients took place within six weeks.

One case suffered from hæmorrhage from the beginning of labor until the placenta expelled itself.

There were three cases of convulsions, but all after delivery; in one, coming when the head was passing through the vulva, and continuing at intervals for four hours; in the second, beginning one hour after labor and lasting 36 hours; in the third, beginning 72 hours after labor, and lasting 24 hours, yet the patient retained her milk to nurse twins. All three cases recovered well within seven weeks.

One case of pregnancy of 32 weeks only; a multipara; there were irregular, spasmodic pains; child born with a large umbilical hernia. One case was rather formidable; primipara 34 weeks pregnant; 1 breech presentation; completely adhered placenta; hour-glass contraction of uterus, and hæmorrhage in consequence of this irregular contraction; catheter had to be used upwards of eight days.

Two cases are recorded where the contractions were perfectly painless, pressure alone indicating the approach of labor.

In one case labor was induced after 32 weeks' pregnancy, on account of contracted pelvis, craniotomy having been twice previously performed.

The majority of these 187 patients recovered health and strength within four weeks; a few within seven weeks, and three within three months, these latter having complications of inflamed breasts and hæmorrhoids.

One remarkable case was that of a patient whom I attended with typhoid fever when three months' pregnant; and when 34 weeks' pregnant, she had an attack of pneumonia which brought on labor, and a dead child was born. Patient recovered in six weeks.

Clinical Department.

A CASE OF ABDOMINAL NEPHRECTOMY FOR PYONEPHROSIS.

BY J. C. IRISH, M.D., LOWELL.

In September, 1889, I saw, with Dr. Hodgdon of Peterboro, Mrs. T., of Dublin, N. H., who was suffering from an abdominal tumor. She gave the following history: Age fifty-nine. Menstruation ceased about ten years before. Had one child, now twenty-five years old. Soon after her confinement, her abdomen became very large. Several physicians, who examined her at this time decided that she had an ovarian cystoma, and advised its removal. Subsequently, however, the tumor suddenly disappeared, and the abdomen, in a few days, became reduced to its usual size. Ever after, Mrs. T. remained perfectly well, until in the past spring, she noticed a growth occupying the left side of the abdomen. When Dr. Hodgdon saw her in August, he found a tumor extending from the pelvis to the thoracic walls, and filling completely the left half of the abdominal cavity.

Its size at the time of my examination, a month later, had slightly increased. No fluctuation could be detected. Resonance was found over portions of the tumor, especially at the upper part. Still the growth could be distinctly felt beneath the overlying intestines. It was entirely immovable and its superior outline beneath the left thoracic wall could not be traced.

By vaginal examination the tumor could not be reached, nor could anything abnormal be found in the pelvis. Yet the history of a probable ruptured parovarian cyst, although it had remained quiescent twenty-four years, lent great probability to the belief, that the present growth took its origin from this old sac — possibly with an added element of malignancy. On the other hand the immovability of the tumor, especially beneath the anterior thorax and the intestines in front, strongly suggested an origin from the left kidney. The patient, we learned by inquiry, passed a very small amount of urine and had had attacks of renal colic. She had never passed a calculus nor had any irritation of the bladder. The urine contained no pus.

From all these facts, the conclusion was reached, that we had to deal, probably, with a tumor from the kidney. The possibility that this diagnosis might require a very radical revision did not escape our minds.

The patient's general health, during the past few weeks, had failed rapidly. She was confined to the bed a large portion of each day; was somewhat emaciated and anæmic; pulse 100; tongue red; vomited often, and unable to take only small quantities of food. Her general look and condition was that which is always seen in patients in whom degenerative changes of an abdominal tumor, notably an ovarian, are actively progressing.

September 21st, with assistance of Drs. Hodgdon, Cutter, Chase and Allen, I removed the tumor through a long abdominal incision in the median line. Intestines and omentum were extensively and closely adherent to the cyst, and were separated only with great difficulty. The sac contained seven quarts of pus. Its walls were about one-third of an inch in thickness, except over the anterior and lower portion, where they were thinned by a degeneration, that was indicated by a yellowish-white color of the surface and entire lack of blood supply. At this place rupture of the cyst would have soon occurred. The renal vessels, much dilated, together with the surrounding tissues, made a pedicle somewhat difficult to ligate, both on account of its size and position. A drainage-tube extending to the site of the kidney was inserted. Abdominal wound was closed in the usual manner. The patient went on through an uneventful convalescence to a complete recovery. The average amount of urine that she now passes daily is thirty-two ounces.

A microscopical examination of the cyst, by Dr. Whitney, demonstrated malpighian bodies and urinary tubules at various points within its walls, showing that it was formed of the dilated kidney. In short the case was one of pyonephrosis, due probably to obstruction of the ureter by a calculus.

In the way of an exact diagnosis, before the abdominal cavity was opened, were these difficulties: (1) the shape, size and position of the tumor, made it possible that it might have grown either from the left kidney or left ovary; (2) the past history of a ruptured parovarian cyst, and the present condition of the patient, strongly indicative of a degenerating ovarian cystoma; (3) the absence of any fluctuation that we could detect, leading to the belief that the growth was solid, or nearly so; a very rare form of tumor in connection with the kidney, less so with the ovary. The failure to detect fluctuation was mainly due to tension of the cyst-walls, and partially to firm abdominal parieties and the consistency of the liquid. The same inability to elicit this sign I have seen, under like circumstances, in at least two cases of ovarian cyst.

Abdominal nephrectomy in this case, was the only operation that the uncertainties of diagnosis permitted. The result proves it to have been, also, the best that could have been chosen. Lumbar nephrectomy would have been impossible; and drainage of this immense pus-sac would have only relieved the patient for a time.

The walls of the cyst had so far degenerated, that a cure was only possible when they were, to a great extent, removed or expelled. Generally, in cases of pyonephrosis, where the tumor has become so large as to extend well down in the abdominal cavity, towards the pelvis, lumbar nephrectomy is always much more difficult than abdominal, and very often an impossible operation.

Therefore, in cases of the kind I have reported, the question of treatment will be between abdominal nephrectomy and the lumbar incision with drainage. The latter operation is a comparatively simple one, and its immediate death-rate very small. Yet, of the patients so treated, fully one-half die after varying periods of invalidism, from the continued suppuration that produces hectic and exhaustion, while many of the remainder have a constantly discharging fistula that never heals. After abdominal nephrectomy about one-half the patients recover and remain entirely well.

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SOME MEASUREMENTS OF THE DAILY EXCRETION AND SPECIFIC GRAVITY OF THE URINE IN AN ADVANCED STAGE OF INTERSTITIAL NEPHRITIS.

BY EDWIN FARNHAM, M.D., CAMBRIDGE, MASS.

Every practising physician knows how difficult it is to get measurements of the urine for any length of time, and for that reason the following record may be of interest. All the measurements were made by the writer.

There had been frequent attacks of dyspepsia for several years, but no suspicions arose till on March 12, 1885, a slight "cold," was attended with hemiopia. The attack passed off in a couple of weeks, and in April an examination showed the following condition:

Urine: Amount in twenty-four hours, 1060 c.c.; Specific gravity, 1016; reaction, acid; numerous small and a few large hyaline casts; fine granular casts; a few epithelial casts, some with unchanged, and some with granular epithelium; amount of urea in twenty-four hours' urine, 21 grammes.

Eyes: Vision about one-half in either eye for distance, and only slightly improved by glasses. Considerable swelling and infiltration in both optic nerves, and retinæ.

Left ventricle hypertrophied, beats 60 times a minute, and powerfully.

Pulse, full and incompressible. From June, 1885, to June, 1886, the patient was in Europe, and reported his condition as good.

In September, 1886, after his return to this country there was an attack of right hemiplegia, accompanied by hemi-anæsthesia. There was amnesia of the ordinary form, loss of certain nouns. With only one interesting feature the case went on till November, 1887, when a second attack of cerebral hæmorrhage resulted in death in twenty-three hours without any recovery of consciousness. The anæsthesia, with the exception of the right cheek and right side of forehead, never showed any change. There was no sensation on the use of the ordinary tests, ice, heat, pricking with a pin, touching the hair on the limbs. On faradization with the wire brush, however, the patient said, "I feel it," and from his motions this seemed to be the truth. Daily use of this method for several months did not result in any improved response to the other methods of testing.

"The question arises whether we have any right to assume electricity as a test of absolute sensibility or the measure of its modifications. There are serious objections to such an assumption. As an organ of sense the skin must be studied in reference to appropriate excitants only. Now these are touch, pressure, heat, and cold, and the modifications of these which are capable of causing pain. The claims of electricity to a position among these appropriate excitants is open to exception."[1]

The case is incomplete owing to the inability to obtain a post-mortem examination.

The measurements of the urine extend, with a few exceptions, from February 5, 1887 to November 22, 1887, the day before the fatal attack. Of the 291 days from February 5th to November 22d, the measurements were made on 280. The omissions were due either to a change of the patient's residence, or to an oversight of one of the servants. The lowest specific gravity reached on any day was 1005, the highest 1018. The largest amount of urine excreted in any twenty-four hours was c.c. 2866, the smallest c.c. 684.

	Range of Specific Gravity.	Daily Average Amount c c.
1st week	1010 to 1013	1566
2d "	1009 to 1012	1492
3d "	1010 to 1015	1334
4th "	1009 to 1017	1264
5th "	1008 to 1011	1519
6th "	1008 to 1012	1409
7th "	1009 to 1011	1450
8th "	1010 to 1012	1400
9th "	1008 to 1013	1418
10th "	1008 to 1011	1463
11th "	1008 to 1013	1494
12th "	1007 to 1010	1649
13th "	1007 to 1015	1569
14th "	1006 to 1010	1845
15th "	1005 to 1007	1821
16th "	1006 to 1008	1907
17th "	1005 to 1007	1941
18th "	1006 to 1007	1882
19th "	1006 to 1010	1924
20th "	1008 to 1014	1927
21st "	1007 to 1010	1639
22d "	1005 to 1012	1647
23d "	1006 to 1008	1925
24th "	1006 to 1009	2090
25th "	1005 to 1009	1944
26th "	1005 to 1008	2103
27th "	1006 to 1009	1947
28th "	1008 to 1011	1802
29th "	1008 to 1010	1624
30th "	1008 to 1011	1803
31st "	1008 to 1012	1654
32d "	1009 to 1015	1571
33d "	1009 to 1014	1616
34th "	1009 to 1011	1621
35th "	1007 to 1014	1596
36th "	1009 to 1011	1773
37th "	1008 to 1010	1623
38th "	1009 to 1012	1521
39th "	1010 to 1018	1418
40th "	1009 to 1014	1605

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[1] Erb, Electro-therapeutics, p. 155 (English translation).

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.
SECTION ON THEORY AND PRACTICE OF MEDICINE.

Stated Meeting, November 19, 1889. Dr. R. C. M. Page, Chairman.

Dr. A. D. Rockwell read a paper on

THE GENERAL THERAPUTIC ACTION OF ELECTRICITY.

Notwithstanding the vast amount of literature relating to the treatment of disease by electricity, he said, there existed so little correct appreciation of the physics of this agent, that it was necessary to emphasize again and again the statement that electricity is not a simple, single manifestation of natural force, but a generic term including complex phenomena and a wide variety of effects. It was not only a stimulant of the most powerful character, but a sedative which in some cases was unexcelled. In addition it was to be regarded as a tonic of a very high order. To produce tension of the nervous system, and the muscular fibre generally, so as to enable them to respond to their natural stimuli, the mechanical effects of the faradic current seemed to be especially applicable. Properly applied, it would not produce any appreciable muscular contractions, and yet it gave passive exercise to all the deeper-lying as well as superficial muscles.

Aside from the purely mechanical effects, it was evident that even the faradic currents exerted some other and more subtle influence upon the nerves themselves ; for by no purely mechanical means could we account for the numerous phenomena which followed its use in diseased conditions. General faradization might be said to be indicated whenever a constitutional tonic influence was called for ; and this law rendered the remedy as valuable to the general practitioner as to the specialist. For the tedious period of convalescence often following typhoid and other fevers there was no remedy that was comparable to it, and in a large number of conditions of depressed vitality, electricity in some one of its forms would prove of service. In addition to giving passive exercise to the muscles, it rendered more natural the processes of secretion and excretion, corrected circulatory disturbances, and afforded tone and strength to both nerve and muscle.

With these general principles in view, we ceased to wonder that electricity is used and recommended for such a variety of diseases, and appreciated the injustice of the criticism which condemns electricity because it is claimed to be of service in so many different conditions. When its therapeutical efficiency was denied, the inevitable conclusion at which those must arrive who have time and time again witnessed evidences of its power was, that he who thus fails in his results is deficient in experience, is not sufficiently persistent, or has somehow failed in the technique of his applications.

Some of the results in electro-therapeutics were probably due — though only to a limited extent — to physical effects. The chemical or electrolytic influences which were associated with electrical action were practically confined to that form of dynamic electricity termed galvanism. Its special utility was in the department of electro-surgery ; although it was undoubtedly true that some of the electrolytic action occurs in all ordinary applications of galvanism to the body. A distinction had very justly been made between electrolysis, which was a disintegration and separation of elements of organized structure, and galvano-chemical cauterization, which produced its effects by means of the acids and alkalies which are liberated at either pole by electrolytic action. It was the chemical galvano-cauterization, and not electrolysis, which accomplished most of the good results that followed intra-uterine applications in endometritis.

In its influence over nutrition, however, the physiological effects of electricity were perhaps the most important. Having referred to the increase of the salivary and mucous secretions caused by its excellent effects in so called dry catarrh, by reason of its stimulation of the latter secretion, he said that his experience had been that appetite is sharpened, digestion quickened, and constipation relieved, both by local and general electrical treatment, so rapidly as to make it pretty evident that the gastric, biliary and intestinal fluids are made to secrete more liberally by the action of the current on the nerves supplying the organs of digestion, rather than on the tissues of the organs themselves. These results had also been confirmed by Ziemssen by some recent experiments on animals. Among those affections of the bowels in which electricity was quite certain to exercise a beneficial influence were defective innervation, atrophy of the muscular tissue, digestive atony, and the wide section of diseases comprehended under the name of hypochondriacal and neurasthenic.

Electricity might also not only diminish, but arrest the physiological activity of the organs of secretion and excretion. This might be of service in diminishing the flow of urine in polyuria, for instance ; but in other instances the effect produced was not at all a desirable one. Thus he had known two cases in which the lacteal secretion was promptly suppressed by the injudicious use of currents of high tension. Properly applied, however, electricity often had a very beneficial effect in increasing the flow of milk or in restoring the secretion after it had been temporarily suppressed. The paper was concluded with some observations on the effect of electricity on the circulation and the process of absorption.

Dr. C. L. Dana read a short paper which was devoted to the

EFFECTS AND ADVANTAGES OF STATIC ELECTRICITY.

By using small Leyden jars which filled and discharged very quickly, the static current, he said, could be made almost continuous, and would cause chemical effects. The intensity of current strength was the amount of electricity passing through a given space in a second of time. The static discharge occupied such a fraction of a second that its intensity or current strength was hardly measurable ; but its voltage or electric-motor force was immense.

In speaking of the physiological effects of static electricity he said that the muscular contractions caused by it had been stated to be due to a purely mechanical effect. This view he thought was erroneous, for the reason the sparks caused contraction, when applied directly to muscle, while in order that mechanical irritation should cause contraction of a whole muscle it was necessary that it should be applied at the motor point. Also, because there was no apparent mechanical irritation in the ordinary sense, when the static current was applied with wet electrodes.

In the case of the spark there was a sudden expansion of the skin at the point of contact from heat, but no deep mechanical disturbances.

Therapeutically, its special advantage was in paralyses with some spastic element, as in hemiplegias and paraplegias. Aside from this, its best results were in chronic muscular rheumatic and neuralgic conditions and in many sensory disorders. It had a specific æsthesiogenetic influence in certain cases, producing effects in a way similar to metallo-therapy — not of mental influence or suggestion. It had practically a very great value in dispensary clinics where a considerable number of cases of paralysis had to be treated. In nervous clinics with few patients and abundant medical attendance the faradic and galvanic battery might suffice; but in large dispensaries he considered it almost a duty to patients to have a battery which insured a prompt and efficient electrical treatment in all cases.

Dr. J. H. Gunning spoke particularly of the good effects of static electricity in facial paralysis, in which he had found that a much shorter period of treatment was required than when other forms of electricity were employed, and of the special value of the faradic current as an emmenagogue and as a remedy for many cases of obstinate vomiting.

Dr. H. D. Chapin read a paper on

(I.) THE AURICULO-VENTRICULAR (PRESYSTOLIC) SOUND. (II.) SOME CONSIDERATIONS ON CARDIAC DISEASE IN CHILDREN.

In the course of it he said, that in some cases the presystolic murmur could only be detected after more or less active exercise, and in making his examinations he was in the habit, therefore, of requiring the patient to jump up and down a few times before he auscultated the heart. The utility of this precaution was shown by the fact that two individuals, in whom he had found the murmur present, had been able to secure first-class risks in life insurance companies, because (the applicant not having taken any exercise) the murmur was imperceptible at the time the examination was made by the medical officer. The prognosis in presystolic murmur he regarded as usually quite favorable.

In treating of cardiac disease in children, he spoke of the well-known fact that rheumatism, which was ordinarily the cause of such disease, was apt to be very much less severe in children than in adults; the affection not infrequently entirely escaping notice. In his experience, he had found that very often cardiac trouble did not occur with the first attack of rheumatism, and sometimes did not ensue until the child had had several attacks of the latter. He also spoke of the much greater tolerance of disease of the heart in children than in adults. In the treatment of such disease he laid stress on the prime importance of complete rest, and said that the earlier the trouble was detected, the better the chances naturally were of overcoming it.

The paper was discussed by Drs. Andrew H. Smith, W. H. Katzenbach, A. L. Loomis, H. N. Heinemann, E. G. Janeway, J. Lewis Smith, and W. H. Thomson.

Dr. Andrew H. Smith said that he was not one of those who believe in the existence of a presystolic murmur as distinct from the diastolic, and having a mode of production and a significance of its own. There was a presystolic murmur, indeed, but it was only a continuation of the diastolic murmur, reinforced by the contraction of the auricle. If the orifice was greatly narrowed, and especially if it was irregular, the flow of blood through it would cause a sound during the ventricular diastole and before the auricular systole. If, on the other hand, the orifice was less contracted and less irregular, the blood would pass through it silently until its flow was hurried by the contraction of the auricle, when a murmur would be developed. This supplement to the diastolic murmur had no different significance from the latter, and he could see no reason for giving it a specific name.

Having spoken of a murmur which precedes the first sound of the heart, which he believed to be systolic, and not presystolic, and which occurs in those conditions in which, from some general cause, the heart murmur is enfeebled and the ventricle becomes temporarily dilated, he went on to say that his experience coincided with that of Dr. Chapin, as regards the tolerance of cardiac disease in early life. He had some children with severe endocarditis, accompanied by very marked valvular lesions, go on for years apparently suffering but little inconvenience. He recalled especially the case of a boy, who, eight years ago, when three and one-half years of age, had a systolic murmur so loud that it could be heard distinctly when the ear was two or three inches from the chest, and who had all along run and played with other boys, apparently in perfect health. This murmur still existed; but it was greatly reduced in intensity, and the unfavorable prognosis, which he had given eight years ago, seemed as far as ever from being verified.

Dr. Loomis said that he did not suppose there was any doubt in the minds of auscultators at the present day as to the existence of a presystolic murmur. He had been accustomed to consider three classes of presystolic murmurs: (1) the hæmic, (2) the congenital, and (3) those depending on chronic endocarditis. These murmurs were often independent of systolic murmurs, and sometimes were present in addition to the latter. It seemed to him that while we were in the habit of talking a great deal about cardiac murmurs, they were not really the essential element to be considered. To be of importance they must be accompanied by changes in the cavities and walls of the heart and in other parts of the system; and this was especially true in regard to mitral disease. As far as his experience went, mitral disease was the variety commonly met with in children (aortic trouble being extremely rare in early life), and he had found that a child having this affection (provided, as was usually the case, that suitable compensation was furnished by nature) might go on to adult life without suffering any inconvenience.

Dr. Janeway said that for a long time some authorities had hesitated to accept the existence of the presystolic murmur, on the ground that the auricle has not sufficient force to produce such a murmur. It could be positively demonstrated, however, that in reality very little force is required for this purpose. As regards the prognosis of mitral stenosis, his experience had led him to take a less hopeful view of the condition than had been expressed by the author of the paper and some of those participating in the discussion. He had found that quite a number of the cases died, and sometimes comparatively suddenly.

Dr. J. Lewis Smith said that his experience coincided with that of others as to the comparative mildness of rheumatism in children, and he thought there could be no doubt that there were a great many "walking cases" of the disease. Parents would state that their children had not complained of pain, or, if they did so, the circumstance was attributed to "growing pains," and regarded as a matter for congratulation, as indicating an increasing robustness of constitution. So far from this being the case, however, such "growing pains" were too often the evidence of a condition which caused irreparable damage to the heart. The occurrence of rheumatism was thus frequently overlooked, and hence the opportunity was missed for the employment of treatment which might avert the impending danger of permanent cardiac disease.

In speaking of the differential diagnosis between malformations of the heart and true cardiac disease, he said that in two hundred cases of the former, which he had collected from various sources, he had found no record of congenital mitral stenosis, of which Dr. Loomis had spoken. It seemed probable to him, therefore, that in cases which appeared to be of this character, the trouble was really due to malformation of the right side of the heart. In seventy-five cases of organic cardiac disease in children, occurring in his service at the out-door department of Bellevue Hospital, the most frequent murmur met with was the mitral regurgitant, and the next most common, the presystolic; while the aortic murmurs were very rare. As to the matter of prognosis, it was his conviction that we are in the habit of regarding in too favorable a light these valvular lesions in childhood. In dispensary practice most of the cases were lost sight of in a comparatively short time; but in private practice, he had found that in many cases dilatation and hypertrophy became developed in the course of two or three years, and subsequently the cardiac trouble terminated fatally.

Dr. Thomson said that it seemed to him strongly probable that the disappearance of presystolic murmurs, which had been well marked in early life, was in reality due to the supervention of other conditions. On account of the healthy condition of the arteries, children had a great advantage over older persons; but the moment that arterial changes occurred, a direct effect was produced upon the heart, and the result was hypertrophy and dilatation of the left ventricle. Dilatation and regurgitation through the mitral orifice took the place of mitral stenosis, as far as the murmur was concerned; and hence it could be seen how such a murmur would disappear by reason of subsequent changes, the starting point of which was arterial obstruction.

— In a circular which accompanies one of the Navy reorganization bills prepared for presentation to Congress at the present session, its author has this to say of the medical officers: "There is no reason why the medical officer should begin his naval career with the same rank as the line officer. No other service demands it; the army does not require it. In the English service the medical officer enters with the title of surgeon and the rank of lieutenant — two grades higher than the one in which medical officers now enter the United States Navy — and gets more pay than the line officer of the same rank. In the United States Army the medical officer enters with the rank of first lieutenant mounted, two grades higher in pay than the ensign."

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FIRST REPORT OF THE BRITISH ROYAL COMMISSION UPON VACCINATION.

THE Commission appointed in May, 1889, a portion of whose report is presented in the document recently published, consists of fifteen persons. In the list may be recognized the well-known names of Sir James Paget, Sir Wm. G. Hunter, William S. Savory, F. R. C. S., Dr. John S. Bristowe, Dr. Wm. J. Collins, Prof. Michael Foster, Jonathan Hutchinson, F. R. C. S., and Charles Bradlaugh, Esq. The Commission was composed of gentlemen holding adverse views upon the subjects of vaccination and of compulsory vaccination.

The objects of the inquiry are set forth as follows:

(1) The effect of vaccination in reducing the prevalence of and mortality from small-pox.

(2) What means, other than vaccination, can be used for diminishing the prevalence of small-pox; and how far such means could be relied on in place of vaccination.

(3) The objections made to vaccination on the ground of injurious effects alleged to result therefrom, and the nature and extent of any injurious effects which do, in fact, so result.

(4) Whether any, and if so, what means should be adopted for preventing or lessening the ill effects, if any, resulting from vaccination; and whether, and if so, by what means vaccination with animal vaccine should be further facilitated as a part of public vaccination.

(5) Whether any alterations should be made in the arrangements and proceedings for securing the performance of vaccination, and, in particular, in the provisions of the Vaccination Acts with respect to prosecutions for non-compliance with the law.

The Commission held meetings weekly, from June 26th to July 31st, inclusive, and then adjourned until October 9th. The testimony of only four persons is presented in this first report, — Sir John Simon, K. C. B.; Dr. William Ogle, Superintendent of Statistics in the Registrar-General's Office; Dr. Richard Thorne Thorne, of the Local Government Board; and Dr. John H. Rauch, Secretary of the State Board of Health of Illinois. This first instalment of the report, which promises to be a lengthy one, deals mainly with the historical and statistical side of the question.

The Commission of 1871, was convened during the prevalence of the great epidemic of that and the following years. Mr. Simon had already testified before the former Commission, and a large share of his testimony before the present Commission is occupied with historical statements. In continuance of the statistics as to the death-rate from small-pox in England, it appears that the mortality from this disease for the earlier period. 1847–53, in which vaccination was *optional*, was, for all ages, 305 per million of the living population; and for children under five years of age, 1,617 per million living at that age. For the period 1854–71, in which it was *obligatory, but not efficiently enforced*, the death-rate from small-pox was 223 per million of the living population, at all ages; and 817 per million for children under five years. For the period 1872–87, in which vaccination was *obligatory and more efficiently enforced*, the death-rate from small-pox was 114 per million, at all ages; and 242 per million for children under five years. The witness also testified that there had been a very great improvement in the *quality* of vaccination within thirty years. He gave credit to the superior quality of the recent vaccinations practised in Germany, especially in the German army.

The term "spontaneous cow-pox," which was generally recognized as a correct expression on both sides of the Atlantic not many years since, Mr. Simon summarily and very justly disposes of as follows:

Dr. Bristowe. — "Is there any foundation for the belief that there is such a thing as spontaneous cow-pox?"

Answer. — "There may be speculative ground for it; but, as to matter of fact, I have never known of spontaneous cow-pox, any more than of spontaneous cat or dog."

The witness, after a life-long experience, was induced to modify his views to some degree as to the duration of the effect of vaccination as a preventive of small-pox. Mr. Simon's testimony is supplemented by a voluminous appendix, comprising the same data, mainly historical, which were presented in the report of the former Commission.

Dr. William Ogle, the second witness, the successor of Dr. Farr, the noted statistician, showed from the Registrar-General's Reports, the evidence of the general decline in small-pox under the successive enactments relative to vaccination, and also the marked changes which have taken place in the incidence of the disease upon different age-periods of life. These changes consisted in a very marked diminution of the mortality of young children as compared with the period before vaccination, and a slight increase in the mortality among adults; the explanation of which was that in former times a very large proportion of the population had small-pox while they were young, and were thereby protected throughout life, but that since the introduction of vaccination the protection enjoyed is only that of primary vaccination, the effect of which wears out sooner than that of an attack of small-pox. Consequently the death-rates are increased in the advanced ages because protection by vaccination has taken the place of protection by small-pox. He laid special stress on the fact that while the mortality from other diseases had been diminished since the introduction of vaccination, this decrease has been quite insignificant as compared with that of small-pox.

The testimony of Dr. Thorne Thorne was remarkably clear and convincing, and included many important points. He detailed minutely the effect of vaccination upon the small-pox fatality by ages, a point briefly noticed by the preceding witness. He also testified as to the effect of the quality of vaccination upon the small-pox mortality. He quoted the experience of the Local Government Board, and especially Dr. Barry's recent report upon the Sheffield epidemic, in support of Marson's statement as to the increased protection afforded by good vaccination over indifferent or bad vaccination. Upon being questioned quite closely as to the effect of sanitation, in the broad sense, upon small-pox, he replied that different diseases have different causes, different modes of transmission and different methods of prevention, and that while overcrowding might undoubtedly increase the liability to an epidemic of small-pox, "when you come to general insanitary conditions such as faulty drainage or water-supply, I confess I have no knowledge that such conditions have ever produced a single case of small-pox since small-pox has been in existence." He agreed entirely with Dr. Seaton in the statement that the influence of general sanitation is "wholly insignificant as compared with that of the presence or absence of effective vaccination in controlling small-pox mortality, especially among young children."

Dr. Collins, who appears to take the lead upon the Commission, as an opponent of vaccination, plied his inquiries very sharply, but was met very fairly and very successfully at all points by Dr. Thorne Thorne. The evidence of these two witnesses is supplemented by abundant statistical data, from which the following is selected as presenting a most convincing argument as to the effect of vaccination upon the small-pox mortality of the early ages of life. (See Table, page 566.)

Dr. John H. Rauch, Secretary of the State Board of Health of Illinois, was the last witness examined. He testified as to his experience with small-pox as an army surgeon in the war of 1861–65, as a sanitary officer at the time of the great Chicago fire in 1871, and as the executive officer of the State Board of Health. The vaccinations performed under his direction in 1882 and 1883 as detailed in the Fifth Report of the Illinois Board of Health were the most numerous ever made under the direction of any State authority in this country. He stated the number vaccinated in the public schools of Illinois in these two years as about 600,000, and about 50,000 in the parochial schools; and his estimate of all vaccinations and revaccinations in the State at the same time was about one and a half millions.

MEAN ANNUAL DEATHS FROM SMALL-POX,

At Successive Life-Periods, per Million living at each such Life-Period, 1847–53, 1854–71, 1872–87.

Period.	All ages.	0–5	5–10	10–15	15–25	25–45	45 and upwards,
(1) Vaccination optional, 1847–53 . . .	305	1617	337	94	109	66	22
(2) Vaccination obligatory, but not efficiently enforced, 1854–71	223	817	243	88	163	131	52
(3) Vaccination obligatory, but more efficiently enforced by vaccination officers, 1872–87 . .	114	242	120	69	122	107	47

In reply to a question by Dr. Collins as to certain statements made by Dr. Joseph Jones, relative to the transmission of syphilis by vaccination. from one soldier to others in the Confederate army, Dr. Rauch replied: "I have not the least doubt of it. Nothing of that kind occurred with us; we took better care of our army." He further testified that among 250,000 people whose vaccination had come under his personal supervision, he had never known a case of syphilis as the result of such vaccination.

Dr. Rauch's testimony extended to some of the points not embraced by the preceding witnesses, in consequence of his limited stay in England. It is to be hoped that the impression may not be made by his evidence, that vaccination in America is as thoroughly performed in all of the States, as it was under Dr. Rauch's supervision in Illinois in 1882–83. A general epidemic of small-pox at the present time would undoubtedly find an immense unvaccinated contingent in this country.

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THE BOSTON CONFERENCE ON PHYSICAL CULTURE.

The conference of educators and physicians held in Boston last week upon the subject of the best methods of carrying on physical education in connection with the public schools and the colleges, was, at least so far as the spirit and interest manifested, a great success. That a large hall, holding a thousand or more people, should be filled morning and afternoon for two successive days indicates a growth of public interest in this subject, which is most gratifying, in view of the general apathy with which appeals for the need of physical culture have been met in years past. That a part of the present interest was, perhaps, due to the conflict of rival systems, contesting for favor before the school authorities, does not derogate materially from the satisfactoriness of the occasion. For even if the innate liking for a fight were the immediate cause which brought some of the auditors together it matters little, so that they came to see that it was something important that the contestants were fighting about. And we cannot suppose that any pugnacious feelings had a place in the breasts of most of those in attendance, for were not a majority of the audiences of the gentle sex?

The conference was understood to be under the auspices of a benevolent lady, who has taken much interest in the subject and has expended liberally of her means to secure instruction in it for the public school-teachers, and, while she is a distinct favorer of the Ling or Swedish system, a fair field was offered to all who had other methods to advance. The German Turners presented and illustrated their system; the so-called American system was presented by a class under the direction of one of the Boston gymnasiums; the military drill was given a hearing; the Swedish system was explained by Dr. Nils Posse, and a class of female teachers demonstrated the movements. The directors of a number of the college gymnasiums also gave an account of their work: Dr. Hartwell of Johns Hopkins, Dr. Sargent of Harvard, Dr. Seaver of Yale and Dr. Hitchcock of Amherst.

Professor Wm. T. Harris, United States Commissioner of Education presided ably over the discussions, and at the close a pleasant reception was given to the gentlemen and ladies who were the guests of the occasion.

Without entering at all upon the controversies which are in the air as to methods, we may say that to our minds the choice of any particular system is of much less importance than that *some* plan should be adopted, under competent supervision of a person who believes in it and can handle it. In such hands any one of the opposing systems can doubtless do good, some undoubtedly more than others. But that the necessity of doing something is beginning to be felt, we hopefully believe. An excellent committee was appointed at the close of the conference, the only objection to which is its size, to consider carefully the methods which have been or may be presented, to report upon them, and to make suggestions as to the method of physical training best adapted for introduction into the public schools.

In regard to colleges, we believe that a department of physical education should be given a place and a voice in the regular curriculum, even if not put upon a footing of recognized equality with other departments. Such a place, such a department, has already been given at the Johns Hopkins University; and Amherst is understood to be favorably impressed with the plan. The mature, well-balanced adult of the future will probably look back with as much satisfaction to the time devoted to this department of school and college work, if having had the good fortune to be under judicious direction, as to that spent in any or all others.

In this connection, by the way, we note with pleasure that a professorship of hygiene and physical culture has just been endowed at the Pennsylvania College, at

Gettysburg, with the sum of $25,000, in memory of Dr. Charles H. Graff, by his parents. A similar memorial in other schools and colleges, at present unprovided for in this regard, would be a most admirable way of honoring the dead while serving the living.

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MEDICAL NOTES.

— Dr. Pettit, of Dayton, Ohio, reported in the *Medical News*, for August 10th, a death from the use of two doses of sulphonal of fifteen grains each, taken at an interval of fifteen minutes. The mode of death was by apnœa; the patient, a woman with melancholia, aged twenty-eight years.

— Dr. William Perry Northrup, of New York, the author of an interesting article on " Life on New York Pilot-Boats," has contributed to the holiday number of *Scribner's Magazine* a profusely illustrated paper on " Life on the Coast of Brittany," which will be found to be of great interest.

— Dr. H. C. Coe, of New York, recently reported to the Section of Obstetrics of the New York Academy of Medicine, a successful case of laparotomy and supravaginal amputation of the uterus for rupture — the first successful case of the kind, we believe, in the United States.

— Dr. John S. Billings has, with the approval of the Secretary of War and of the Surgeon-General, accepted the position of Medical Director of the University Hospital in Philadelphia to which he was recently elected. The duties of this new position will be so arranged as not to conflict or interfere with his duties as medical officer of the army at the Surgeon-General's office.

— A long-cherished plan of a training-school in New York for nurses for children has assumed definite shape, and such a school is expected to be in operation by January 1st. Quarters have been taken in the Nursery and Child's Hospital at No. 571 Lexington Avenue. A regular six months' course of training in the care of children is to be adopted. This will include instruction in matters of hygiene, such as the care of the nursery, ventilation, preparation and administration of food, dressing and washing children. A post-graduate course will provide instruction in some of the simpler methods of medical treatment of children.

— From a summary of the recent census of Greece, as contained in the *Lancet*, we learn that in one respect the Greek population stands out in strong contrast to that of almost every other European country, inasmuch as the number of males exceeds that of females. At the recent Greek census, the proportion of males was 107.6 to 100 of females. It is well known that the females considerably exceed the males in almost every other European country. At the last English census, in 1881, the sex proportion was 105.5 females to 100 males. This excess of males in the Greek population is not susceptible of satisfactory explanation without more complete vital statistics than are issued by that country. There is little reason to doubt that males are more numerous than females at birth, and the proportion of emigrants and of colonists, who leave the shores of Greece, is probably comparatively small, which tends to prevent the excess of females thus caused in most other European countries. It would, however, be very interesting to know whether the excess of males in Greece is in any degree due to exceptional sex-mortality. Excess of mortality among males, compared with that of females, is almost invariable. If the mortality of females in Greece exceeds or is equal to that of males, such an unusual fact would help to explain the excess of males in the population.

— Surgeon-General Hamilton, of the Marine Hospital Service, has submitted to the Pan-American Congress a paper on the sanitation of ships and quarantine. Among other recommendations is one that certain international refuge quarantines shall be established and maintained as near as practicable to the definite routes of travel, and be completely equipped. To these stations all infected vessels should be obliged to repair before final entry into the country of destination. The certificate of disinfection and cleanliness, from the officer in command of such station, should entitle the vessel to enter in free *pratique ;* and all port sanitary authorities should have the right to send any suspected vessel to the nearest international refuge station. Dr. Hamilton suggests that the following refuge stations would, for the present, supply the needs of this proposed service: On the coast of the United States, one at Tortugas Keys, one at the Chandeleur Islands; on the coast of Mexico, one near Vera Cruz; on the Central American coast, one near Colon; on the Caribbean coast, one near La Guayra; for the Antilles, one near Port au Prince; for the Brazilian coast, one near the mouth of the Amazon (near Para); for Uruguay and the Argentine Confederation, one at the mouth of the Rio de la Plata; for the Chilian coast, one near Valparaiso; for Peruvian coast, one near Callao; for United States of Colombia, one near Panama; for the Western coast of Mexico, one near Acapulco; and for the Western coast of the United States, one at San Diego, one at San Francisco, and one near Port Townsend.

BOSTON AND NEW ENGLAND.

— Among the estimates of appropriations submitted to the new Congress is one asking $31,000 for repairs and improvements to buildings and grounds at the Chelsea Marine Hospital, and one asking $15,000 for the Marine Hospital at Vineyard Haven, Ct.

— The annual graduation exercises of the Dartmouth Medical College occurred November 26th, at Hanover, N. H. Members of the faculty and delegates from the New Hampshire and Vermont Medical Societies occupied seats on the stage. The degree of M.D., was conferred by Prof. C. P. Frost, Dean of the Faculty, upon twenty-one students.

— A case of some importance was heard in the Municipal Court, of Boston, December 2d, in which Dr. S. H. Durgin, Chairman of the City Board of Health, was prosecutor. The defendant was Dr. Benjamin Galbenewitz, who has an office on Hanover Street, and he was charged with failing to report promptly, as by law required, the case of a patient whom he was called upon to treat for the small-pox. The Board of Health was not apprized of the case till November 20th, the notice having been mailed the 19th. It was claimed by the prosecution that the eruption must have been present and recognizable as small-pox for a week previous to the time of notification. The patient was a child of six months, and the household consisted of the father, mother and five children. They lived in narrow and contracted quarters in a small tenement in the rear of Salem Street. For the most part all were huddled in the kitchen, which was the general living-room in a crowded neighborhood, a place, in fact, where the general conditions were favorable for the spread of the disease. The mother of the patient was brought from the Canterbury Street Hospital to testify, and appeared somewhat weak and emaciated. She told of rash and pimples which were visible on the body of her little daughter about a week before she died. She had a notion that it might be chicken-pox, as another of her children had only recently recovered from that disease. The doctor had made three or four visits. The defendant, Dr. Galbenewitz, stated that he did not become convinced of the identity of the infant's complaint with small-pox until the afternoon of the day on which he mailed his notice to the Board of Health. He had been for fifteen years a physician in this country, and had practised also in Russia. The hearing closed at 4.30 P. M., when Judge Hardy imposed a fine of $100 and costs, from which sentence the accused appealed.

NEW YORK.

—There was an interesting discussion before the Section of Laryngology and Rhinology of the New York Academy of Medicine, November 26th, concerning the misuses of cocaine. Dr. W. H. Holbrook Curtis read the introductory paper which dealt with a large number of cases where the use of cocaine in a local way had affected the entire system of the patient. The fact that Dr. Köhler, the discoverer of the drug, was present at the discussion and took part in it, lent an additional interest to the meeting. Dr. Köhler said that he made it a rule of his practice never to prescribe cocaine. "Whenever I use it," he continued, "I administer it myself, and then the patient cannot secure more of it by merely refilling the prescription. I make it a rule never to use much more than a five per cent. solution because I find the results achieved quite as good as though I had used a forty per cent. solution — it only requires a little more time. In subcutaneous injections a much weaker solution should be used, two per cent. being quite effective."

— At the last meeting of the Section in Obstetrics and Gynecology of the Academy, an unusually interesting discussion took place on the use of electricity in gynecology and especially in the treatment of fibroid tumors. Papers were read by Drs. A. D. Rockwell, A. H. Goelet, and E. L. H. McGinnis, of New York; A. Lapthorn Smith, of Montreal; A. H. Buckmaster, of Brooklyn; F. H. Martin, of Chicago; and G. Betton Massey, of Philadelphia; and remarks were also made by Dr. P. F. Mundé, Dr. H. J. Boldt, and others. Two of the gentlemen reading papers — Drs. Goelet and McGinnis — spent some time in Paris during the past summer in personally studying Apostoli's methods.

— There are at present nine cases of typhoid fever in St. Peter's Orphan Asylum, Newark, an institution in which there are only seventy inmates altogether; and one death from the disease has already been reported. It is announced that arrangements have been made to remove the sick children to the German Hospital.

— Dr. Walter DeForest Day, for many years Sanitary Superintendent, New York Board of Health, died after an illness of some months, on the 27th of December. He was born in Catskill, New York, in 1835, and was graduated from Williams College in 1859. He studied medicine under the late Dr. Willard Parker and received the degree of M.D. from the College of Physicians and Surgeons, New York, in 1863. Two years earlier, however, he entered the military service of the United States as a Medical Cadet. He was with the Army at the battle of Bull Run, and immediately after the latter converted the Methodist Church in Alexandria, Va., into a hospital for the wounded. His services were so efficient at this time that he was assigned the task of organizing the hospital service of the Army of the Potomac, and it was owing to the ability that he displayed in this work that Prof. Charles F. Chandler, when made President of of the New York Board of Health in 1873, selected Dr. Day for the position of Sanitary Superintendent. This place he filled in an eminently satisfactory way until last spring, when he resigned on account of ill health. In addition, he was for twenty-one years Professor of Materia Medica and Botany in the New York College of Pharmacy, and for ten years clinical assistant to the chair of Practice in the College of Physicians and Surgeons.

Miscellany.

GASTRIC EPILEPSY.

The *London Medical Recorder* quotes from *Lo Sperimentale*, two cases by Massolongo, of epilepsy with peculiar attending features. In neither patient had any of the customary antecedents existed, both suffered from epiletic attacks supervening after gastric disturbances, characterized by vomiting of food and obstinate constipation. After treatment of the dyspeptic symptoms, the patients completely recovered. Massolongo, after recalling the cases described by Pommay and by Lepine and Schultz, cannot accept the explanation of the first, that these epileptic attacks are due to irritation of the pneumogastric; nor can he accept the hypothesis of Lepine, who believes the epilepsy in his cases of dyscrasic origin. Like Pommay, he thinks the cause resides in the stomach, but the attacks are not due to peripheral irritation of the pneumogastric, but to the absorption of anomalous products of stomach decomposition, which in dyspeptics are elaborated in great quantity. We have to do, then, not with a reflex, but with a toxic epilepsy. The favorable results obtained by removing with antiseptics these anomalous products support this hypothesis of the pathogenesis of nervous phenomena so frequent in dyspeptics.

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TETANUS IN CALCUTTA.

Dr. O'Brien, formerly Health-Officer of Calcutta in an address recently delivered (*Indian Medical Gazette*, August, 1889) thus speaks upon the surprising prevalence of tetanus in that city:

"During the past ten years close on 12,000 deaths occurred from this terrible disease. It begins to rival cholera in the mortality which it produces, and it shows a tendency to increase. In the first year of the ten, namely, 1879, the deaths from it were 936, in 1888 they were 1,324. Recent discoveries go to show that this disease is of microbic origin, that it is produced by a micro-organism existing in the air or soil, or both. Another fact ascertained is that it is enormously prevalent among horses in Calcutta. There is a large equine population here — 20,000, 30,000 — I cannot say how many. A still further fact that has come to notice with regard to this disease is that it shows a remarkable tendency to appear in the vicinity of tanks that have been filled with refuse. Here are a series of facts all pointing to a connection between the existence of this disease and city refuse, stable refuse, and such like. It prevails with most intensity in the autumn months — August, September, October. I believe it is a fact that easterly breezes prevail to a larger extent at this season than at other times of the year, so it is not far-fetched to suppose that germs from the Salt Lakes may be the cause of its greater prevalence then. In this city more deaths occur in a single year from tetanus than in the whole of England in a similar time, or in the whole of Scotland in ten years."

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THE BACILLUS OF TETANUS.

The United States Marine Hospital Service issues in its bulletin for November 29th a translation from a paper by Dr. S. Kitosato, as contained in the *Zeitschrift für Hygiene*, November 7, 1889, on the bacillus of this disease, of which article the following are the conclusions:

(1) Tetanus is an infectious disease caused by a specific bacillus.

(2) The exciting cause of tetanus occurring in man, and of tetanus, when inoculated, is some bacillus which is identical with the "anærobic" bacillus first described by Nicolaier, and later confirmed by Rosenbach and others.

(3) This bacillus appears both in the wound-pus of tetanic persons and of inoculated animals. It frequently produces spores in the pus, but if the pus is examined early it may often be seen as a small rod free from spores.

(4) Pure cultures of these bacilli can be made from the pus of tetanic patients or animals, and inoculations from these cultures will produce tetanic symptoms in other animals.

(5) The former statements, apparently contradictory, concerning the etiology of tetanus, and particularly regarding the appearance of the bacteria, are made clear by the fact that the investigations were made at different stages of the disease. The sooner patients or animals die the less likely are spores to be found in the pus. But the bacilli themselves are never wanting, and spore-forming tetanus bacilli can always be artificially cultured from tetanic pus that is free from spores.

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THE SUBCUTANEOUS USE OF ANTIPYRIN.

In the *Therapeutic Gazette*, November 15, 1889, we find a *résumé* of a graduating thesis by Dr. L. Bach (Würtzburg, 1889), dealing with the above subject.

Dr. Bach made two hundred and seven injections of antipyrin in one hundred different cases of various diseases, principally of a neuralgic character, calling for a remedy which would relieve pain.

Of these cases, there were cured twenty cases of muscular pain, nineteen cases of neuralgia, and eighteen cases of articular pain, making in all forty-seven. Fourteen cases of muscular pain, ten cases of neuralgia, and two cases of pain in the articulations, making in all twenty-six, are stated to have received temporary relief. No result whatever was noted in eleven cases of muscular pain, four of neuralgia, and one of articular pain. These cases may be again subdivided into the following groups: Nine cases of sciatica were cured, one case unaffected; five cases of lumbago were cured, one was uninfluenced; two cases of hemicrania were cured, three obtained temporary relief; three cases of trigeminal neuralgia were cured, three obtained temporary relief, and one was uninfluenced; seven cases of articular rheumatism were cured, two obtained temporary relief, and one was unaffected. The author further states that in twenty-six cases the patients complained that the injection was extremely painful, in thirty-two cases they stated that there was slight pain produced, and forty-two cases testified to entire freedom from pain. Finally, the author classifies his conclusions as follows:

(1) Subcutaneous injections of antipyrin, as regards the production of local pain, is of the most varied action, the result evidently depending upon the individual disposition of the patient.

(2) No difference between the first and subsequent injections can be made out.

(3) Whenever possible, the injection should be made into the tissue of the muscles, since in this locality it is, at any rate, no more painful than in the subcutaneous tissue, and infiltration is avoided.

(4) Previous injections of cocaine are to be recommended.

(5) As recommended by Liebreich at the last Wiesbaden Congress, the injection should be made as near as possible to the seat of pain. An apparent exception to this rule is found in the fact that in hemicrania and orbitual neuralgia relief will frequently follow with astonishing rapidity the use of injections into the deltoid muscle.

(6) There is no probability of antipyrin ever being regarded as a substitute for morphine.

(7) Injections of antipyrin arrest pain in hemicrania and in muscular pain, especially in lumbago and neuralgia of the sciatic and trigeminal nerves. In most cases the relief is permanent; in others it lasts from six to eight hours.

(8) In articular rheumatism it seems to be almost a specific, as, in the single case in which it failed to give relief, failure can be regarded as attributable to the complications existing in the case.

(9) No difference is evident as regards its influence upon acute or chronic pain; it appears to act equally well in both cases.

(10) The five cases in which chills, cold sweat, palpitation of the heart, and symptoms of syncope followed its use show that its employment should be carefully watched, although in no cases were the symptoms severe enough to cause any anxiety. Since in none of these cases was cocaine injected with the antipyrin, the results are attributable to the latter alone.

(11) Only in the rarest instances will these injections fail to produce some improvement.

In most cases the author employed a solution of antipyrin made in boiling distilled water. In other cases he employed a solution consisting of one hundred and fifty grains each of antipyrin and water in which three grains of cocaine were dissolved, the latter solution being ordinarily less painful in its employment.

It is to be regretted that the author has not in any case given more accurate statements as to the dose which he employed, other than saying that he employed a syringeful of these solutions.

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Correspondence.

[From our Special Correspondent.]

PARIS LETTER.

Dr. Philippe Ricord.

Paris, November 15, 1889.

Mr. Editor: — Dr. Philippe Ricord was one of the oldest members of the profession in France. He was born at Baltimore, on the 10th of December, 1800, whither his father had gone to reconstitute a fortune that he had lost. He commenced his medical studies in America, under the direction of his elder brother, J. B. Ricord, a distinguished Naturalist of the United States and of Rousseau, a deep disciple of Broussais. In 1820, the two brothers came to France, and continued their medical studies at the Faculty of Paris. In December, 1822, he was appointed Hospital Interne, after a successful competition, and was attached to the service of Dupuytren at the Hôtel Dieu, where he remained two years, and was then transferred to the Pitié Hospital, where he was placed under Lisfranc. On the 5th of June, 1826, he presented his thesis for the doctorate of the Faculty of Paris, the subject of which was: Divers Propositions of Surgery. As he had not sufficient means to live in Paris, he went to Olivet, near Orleans, where he remained a short time, and then went to Crouy, in the Department of the Seine and Marne. Here he soon made a good practice, and became very popular, but a small provincial town was not sufficient for his ambition. He, therefore, returned to Paris, and in 1828, he presented himself at the competitive examination for the post of Hospital Surgeon, which he obtained, and was attached to the Pitié Hospital; and being still in poor circumstances, he maintained himself by giving private lectures on surgery. In 1831, he was appointed principal surgeon to the Hôpital du Midi, the well-known hospital for venereal diseases in the male, which was the starting point of his fortune and of his celebrity. He retired from the hospital in 1863, having attained the age-limit for hospital surgeons in this country. During the twenty-nine years that he directed the clinic of this hospital, his reputation increased not only on account of the progress he caused to be made in the treatment of the special maladies to which he devoted himself, but on account of his encyclopædic knowledge, the firmness of his hand, the spontaneity of his views, his boldness of initiative, his quick intelligence, and his kindness to his pupils. It will be remembered that he delivered his clinical lectures in the open air, under the shade of the lime trees of the garden of the hospital. Around him, placed on chairs and on benches arranged in a circle, was a numerous audience, composed of doctors and of students from all parts of the world, listening with attention to the doctrines developed by the celebrated head of a school which he had formed. It was more a familiar conversation than a didactic lecture, which was much appreciated by his hearers. At this period the syphilographers in repute were the two Cullериers (uncle and nephew), Sagneau, Cazenove, Devergue and Gibert. All, with the exception of Cullerier, junior, believed in the identity of blenorrhagia and of syphilis. Ricord, after Balfour, Tode, Benjamin Bell and Hernandez, distinctly separated blenorrhagia from syphilis. His opinion was based on experiments by inoculation, and this was the first step he had taken in this direction. If the separation between blenorrhagia and ordinary chancre was well-marked, there was still a certain amount of obscurity in that which concerns syphilis. Jourdan and other syphilographers of his time saw in the manifestations of syphilis only symptoms of phlegmasia. It was the period of the so-called physiological school. Ricord had to struggle against this school, which was not difficult to combat. He had very strong adversaries in the school of the Saint-Louis Hospital. Ricord, always after inoculations, established that the primary chancre alone can give syphilis. He divided syphilis into three periods, primary, secondary and tertiary accidents. Syphilis can only commence by primary accidents. But in 1852, Bassereau separated simple chancre from indurated chancre; in 1855, Clerc established his theory of hybridity. Ricord, nevertheless, firmly maintained his doctrine, and during twenty-eight years (1831–1859) he used all his talent to establish, defend and propagate it. It will be remembered with what energy he combated syphilization. In 1859, the Minister of the Interior requested the Academy of Medicine to give its opinion on a very important question, to wit, the transmissibility of the secondary accidents of syphilis from a wet nurse to her nursling and reciprocally. A Commission was named to study the question, and Gibert was appointed reporter. Gibert's report was admirably written, and his conclusion was in favor of transmissibility. To the great astonishment of the members present at the meeting of the 31st of May, 1859, Ricord bowed assent to the report of Gibert, abandoned the ideas which he had professed for more than a quarter of a century, and finally admitted the transmissibility of these accidents. From the time he left the hospital to within a few days of his death he continued to practise his profession, and more especially in that branch which rendered him so famous. Of commanding stature, eloquent, witty and laborious in research, he became the chief of a most famous school from which emanated a group of young savants, at the head of whom may be placed Dr. Alfred Fournier, who will continue his practice and worthily perpetuate his memory. In 1850, Ricord was elected member of the Academy of Medicine; and in 1868, he was elected its President, and notwithstanding his great age, he attended regularly the meetings of the Academy. In 1869, he was appointed Consulting Surgeon to Napoleon III. During the Siege of Paris, he served as an ambulance surgeon, when he showed great patriotism and a remarkable amount of energy and bravery, for which he was raised to the dignity of Grand Officer of the Legion of Honor. He had received more than two hundred decorations from different foreign governments.

Few medical men could boast of such a successful practice as Ricord had, in a financial point of view, for from comparative poverty he became one of the wealthiest in the profession. He became the proprietor. in a few years, of the magnificent house he occupied in the Rue de Tournon, which is of itself of historical interest, each room in which is a veritable museum furnished with rare objects and paintings of great value. He was very liberal, and lived luxuriously, but as he was rather careless in the administration of his affairs, he often fell into money difficulties. From these, however, he was relieved when he handed over to his friends the management of his affairs.

At the late general elections, on the 6th of October, at Paris, he considered it his duty to come all the way from Versailles, where he generally spent his summers, in order to deposit his vote in the urn, and immediately started to return to Versailles, but being late for the train he waited an hour at the station for the next train, when he took a cold and had to return to his home in Paris. A few days after this he was seized with symptoms of pneumonia, which carried him off in three days. He had full possession of his mental faculties till within a few hours of his death, which took place at three o'clock on Tuesday morning, the 22d October, 1889.

His funeral, which he had regulated in his will, took place on the following Saturday. It was one of the largest, as well as one of the most imposing, ceremonies of this kind which has taken place in Paris for some time past. The large court-yard of the house was beautifully draped and converted into a chapel. At the foot of the coffin were placed on a velvet cushion his numerous decorations. At noon precisely the coffin was removed, when military honors were rendered to the deceased doctor as a Grand Officer of the Legion of Honor. The cortege then set out, headed by the military, while the band played Chopin's famous funeral march. The service at the Church of St. Sulpice, which was entirely draped, was extremely impressive. The building, although large, was still insufficient to contain the number of persons in attendance. The religious ceremony over, the cortege proceeded to Père la Chaise, where the coffin was placed in a family vault, erected by himself many years ago. Some eloquent parting words were delivered by Dr. Péan, on behalf of the Academy of Medicine, and M. Peyron, on behalf of the Assistance Publique.

By his will Dr. Ricord left 10,000 francs to the Académie de Médecine, and 5,000 to the Surgical Society, for prizes.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 23, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	612	199	12.32	13.76	2.56	1.60	4.48
Philadelphia	1,040,245	327	108	12 00	11.20	.60	3.00	6.30
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	140	48	6.39	9.23	—	2 84	2.13
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	168	56	16.80	13.20	1.80	4.20	9.60
New Orleans	250,000	—	--	—	—	—	—	—
Cincinnati	225,000	—	—	—	—	—	—	—
Washington	225,000	98	29	16.32	10.20	3.06	—	8.16
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	26	10	11.55	19.25	—	7.70	—
Charleston	60,145	39	10	10.24	17.92	2.56	5.12	—
Portland	40,000	12	2	16.66	8 33	—	—	16.66
Worcester	78,292	21	9	19.04	14.28	9.52	—	—
Lowell	71,518	32	7	28.17	9.39	—	16.65	6.26
Cambridge	65,552	22	11	22.75	18.20	4.55	4.55	13.65
Fall River	62,647	14	2	7.14	21.52	—	7.14	—
Lynn	53,334	12	0	—	33.33	—	—	—
Springfield	40,731	11	3	—	—	—	—	—
Lawrence	40,619	—	—	—	—	—	—	—
New Bedford	37,253	13	6	23.07	15.38	7.69	—	7.69
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	14	6	14.28	14.28	—	—	7.14
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	10	—	—	30.00	—	—	—
Haverhill	26,058	4	2	50 00	—	—	—	25.00
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	5	1	—	20.00	—	—	—
Newton	21,553	4	1	—	—	—	—	—
Malden	19,774	6	0	16.66	—	—	—	—
Fitchburg	17,534	6	2	16.66	—	—	—	—
Waltham	17,332	3	0	—	—	—	—	—
Pittsfield	15,502	—	—	—	—	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	1	0	—	—	—	—	—
Quincy	13,728	2	2	—	—	—	—	—

Deaths reported 1,602: under five years of age 414; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 206, acute lung diseases 225, consumption 203, diphtheria and croup 87, typhoid fever 42, diarrhœal diseases 29, scarlet fever 15, cerebro-spinal meningitis 10, whooping-cough 10, measles 6, malarial fevers 4, erysipelas 2, small-pox 1.

From scarlet fever, Philadelphia 6, New York 5, Baltimore, Lowell and Waltham 1 each. From cerebro-spinal meningitis, Washington 4, New York, Philadelphia, Baltimore, Nashville, Worcester and Lowell 1 each. From whooping-cough, New York 7, Boston, Washington and New Bedford 1 each. From measles, New York 6. From malarial fevers, New York 3, Charleston 1. From erysipelas, New York and Worcester 1 each. From small-pox, Boston 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending November 16th, the death-rate was 18.3. Deaths reported 3,353: infants under one year of age 831; acute diseases of the respiratory organs (London) 321, scarlet fever 72, measles 70, whooping-cough 56, diphtheria 54, diarrhœa 36.

The death-rates ranged from 11.7 in Birkenhead to 28 5 in Preston: Birmingham 16.9, Hull 13.0, Leeds 19 9, Leicester 17.3, Liverpool 19.4, London 17.4, Manchester 26.7, Nottingham 15.4, Sheffield 18.7.

In Edinburgh 20.7, Glasgow 22.9, Dublin 26.3.

The meteorological record for the week ending Nov. 23, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Nov. 23, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...17	30.405	36.5	48.0	25.0	66	34	50.0	W.	S.W.	14	8	C.	C.		.0
Monday,..18	30.270	38.5	46.0	31.0	45	81	63.0	N.W.	N.E.	7	7	O.	C.		.0
Tuesday,..19	30.035	45.5	48.0	43.0	92	100	96.0	N.E.	N.E.	14	36	T.	R.		.45
Wednes...20	29.750	51.5	56.0	47.0	97	79	88.0	N.W.	S.	5	10	T.	C.		.85
Thursday,.21	29.695	47.5	52.0	43.0	78	93	85.5	W.	S.E.	10	8	C.	R.		.10
Friday,....22	29.365	47.0	51.0	43.0	93	74	83.5	N.W.	S.W.	9	12	R.	O.		.30
Saturday,.23	29.780	47.0	51.	43.9	85	72	78.5	S.	W.	11	8	O.	C.		.0
Mean for Week.															

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 23, 1889, TO NOVEMBER 29, 1889.

By direction of the Secretary of War the extension of leave of absence granted Captain VALERY HAVARD, assistant surgeon, in S. O. No. 240, October 15, 1889, from this office, is further extended one month. Par. 1, S O. 272, A. G. O., November 21, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 30, 1889.

GUNNELL, F. M., medical director. Placed on the Retired List, November 27, 1889.

GAINES, J. H., surgeon. Ordered to duty at Army and Navy Hospital, Hot Springs, Ark.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING NOVEMBER 30, 1889.

FESSENDEN, C. S. D., surgeon. To inspect unserviceable property at Cincinnati, Ohio. November 18, 1889.

MURRAY, R. D., surgeon. Granted leave of absence for thirty days. November 30, 1889.

PURVIANCE, GEORGE, surgeon. Detailed as chairman, Board of Examiners. November 20, 1889.

GASSAWAY, J. M., surgeon. Granted leave of absence for twenty-nine days. November 13, 1889.

GODFREY, JOHN, surgeon. Detailed as member Board of Examiners. November 20, 1889.

IRWIN, FAIRFAX, surgeon. Detailed as recorder, Board of Examiners. November 20, 1889.

CARTER, H. R, passed assistant surgeon. Granted leave of absence for fifteen days. November 29, 1889.

NORMAN, SEATON, assistant surgeon. Ordered to New York Marine Hospital for temporary duty. November 21, 1889. To examination for promotion. November 22, 1889.

FATTIC, J. B., assistant surgeon. Ordered to examination for promotion. November 22, 1889.

HEATH, F. C., assistant surgeon. Ordered to examination for promotion. November 22, 1889.

MAGRUDER, G. M., assistant surgeon, Ordered to examination for promotion. November 22, 1889. Granted leave of absence for twenty-seven days. November 29, 1889.

PERRY, T B., assistant surgeon Granted leave of absence for twenty-five days. November 29, 1889.

COBB, J. O., assistant surgeon. Granted leave of absence for thirty days. November 29, 1889.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A Regular Meeting of the Society will be held on Monday, December 9, 1889, at 8 o'clock, P. M., at the Medical Library, 19 Boylston Place.

Dr. J. B. Ayer, "A Case of Intussusception complicated by Pregnancy and Tuberculosis." Dr. A. S. Cabot, "Two Cases of Abscess of the Liver opening through the Pleural Cavity; Operation; Recovery." Dr. J. Homans, "A Successful Case of Removal of a Retro-peritoneal Fatty Tumor."

Election of new members.

F. B. HARRINGTON, M.D., *Secretary*.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene, will meet at 19 Boylston Place, on Wednesday, December 11th, at 7.45 o'clock, P. M.

Papers: Dr. H. F. Vickery, "The Treatment of Chronic Diarrhœa"; Dr. F. E. Cheney, "Errors of Refraction and Insufficiencies of Ocular Muscles, as Causes of Chorea, with Cases." Drs. O. F. Wadsworth, D. Hunt, M. Standish, C. F. Carter, E. E. Jack and others are expected to take part in the discussion.

ALBERT N. BLODGETT, *Secretary*, 138 Boylston St.
A. L. MASON, M.D., *Chairman*.

OBITUARY RUDOLPH TAUSZKY, M.D.

Dr. Rudolf Tauszky, at one time a well-known physician of New York City, being an expert in lunacy cases and in questions of sanitary reform, died November 21st. at Bloomingdale Asylum, where he had been a patient for over three years, having been confined there soon after making an attempt to kill his young wife and to commit suicide. This happened on January 4, 1885. Dr. Tauszky, who was born and educated for the medical profession at Pesth, Hungary, came to this country in 1862, was a hospital surgeon in Washington, and afterward served a little time in the field. At the close of the War of the Rebellion he returned to Europe and made a special study of women's diseases in the Vienna hospitals. Returning to this country, he joined the regular army and was sent to the Western frontier and New Mexico. He came to New York in 1868, served on the Board of Health and became interested in the tenement-house problem, and lectured and wrote a great deal on sanitary reform. A favorite project of his was a system of free warm baths for winter, which according to his plan, would be largely self-supporting. He was for nearly ten years connected with Mount Sinai Hospital. For some years before his retirement he was frequently called as an expert in cases of alleged insanity. In the spring of 1881, he took the stand to assert the sanity of Miss Mary Irene Hoyt in the famous will case, and during the year following he confined himself almost entirely to the study and cure of mental diseases.

BOOKS AND PAMPHLETS RECEIVED.

Chronic Inversion of the Uterus. Reduction by a New Method. By Henry O Marcy, A.M., M.D., LL.D., of Boston. Reprint. 1889.

Death Not a Necessity. A Treatise on "Immortality," Founded on Bible Truths. By Joseph Wheeler, of St. Louis, Michigan.

The Cure of Crooked and Otherwise Deformed Noses. By John B. Roberts, A.M., M.D Philadelphia: P. Blakiston, Son & Co. 1889.

The Cure of Hernia, by the use of the Buried Antiseptic Animal Suture. By Henry O. Marcy, A.M., M.D., LL.D., of Boston. Reprint. 1889.

Original Articles.

TREATMENT IN TYPHOID FEVER.[1]

BY CHARLES F. FOLSOM, M.D.,
Visiting Physician, Boston City Hospital.

The subject suggested for this evening was the maintenance of the heart's strength in typhoid fever. But, as that is an index of the general measure of strength, its therapeutics involve a consideration of the general question of treatment. There have entered my service at the City Hospital 152 cases registered as typhoid fever, — 14 in May, June and July, 1887, with three deaths, including two in which there was no autopsy and not evidence to justify the diagnosis; 57 from May 1 to October 17, 1888, with two deaths, and 81 from June 1 to October 1, 1889, with 10 deaths. Altogether, 15 died, making an average mortality of 9.87 per cent. (or 21.43 with and 7.14 without the doubtful cases) in 1887; 3.51, in 1888; 12.35, in 1889; and 8.69, for the 138 cases in 1888 and 1889; or 8.66 for the 150 cases. Not only is the ratio of deaths to cases in the hospital less in recent years from typhoid fever, but the general death-rate from that disease has materially diminished as may be seen by the accompanying charts.

The 82 cases this year include one which entered the service just before I came on duty. The short continued fevers, with slight or doubtful enlargement of the spleen, were not recorded as typhoid. All other doubtful cases were excluded, except where the diagnosis was affirmed by autopsy, and no others of them died. In 51 the spleen could be felt; its upper border being at the sixth rib in nine, at the seventh in 41, at the eighth in one. In all the others it was clearly made out to be enlarged by percussion, except once, where there was also broncho-pneumonia of the left lung, and again in a patient who died of acute alcoholic mania with convulsions on the second day after admission, in whom there was found *post-mortem* slight swelling of the follicles and Peyer's patches without enlargement of the spleen. In those cases in which the spleen was not felt, its upper edge was at the seventh rib in 11, seventh interspace in one, eighth rib in 15.

It is quite true that there may be acute hyperplasia of the spleen in various conditions beside enteric fever, acute and chronic, of malarial origin and otherwise. But I should not accept, in the second or third week, as typhoid, any case, if the spleen were not found enlarged, unless for some reason, as pneumonia of the left lung for instance, the size of the spleen could not be ascertained. Its anterior edge may be difficult, often impossible, to make out by percussion, but its vertical diameter can be estimated, at least approximately. In doubtful cases, the enlargement or not of the spleen by percussion may be decisive, as, for instance, in a young woman whom I saw in consultation, supposed to have acute mania. With some difficulty she was kept quiet long enough for examination, and the enlarged spleen (8th to nearly 12th rib) settled the diagnosis of typhoid fever, saving her from being sent to an insane asylum and us from an unfortunate mistake. The time, rate and degree of enlargement naturally vary in different cases, just as there is no fixed rule for the return to normal size, and in my cases without definite relation to the severity of the disease.

A number of cases showed in their temperature charts a malarial influence, and last year, two had distinct ague during convalescence. There were also two marked cases of intermittent fever admitted, in regard to which the evidence seemed conclusive that they originated in Boston.

During the year, one house-physician, one nurse and one ward-maid have had typhoid fever, making in the last six years four house-physicians, sixteen nurses, three ward-masters, two window-washers, two laundresses, and five ward-maids, in all thirty-two persons, while employed in the wards or laundry, a certain number of whom at least, it is fair to presume, contracted the fever there. I have not been able to find in these six years a clear case of a patient having become infected in the wards. In two cases where the question arose, both entered the hospital for rheumatism. In one, this year, the spleen was not examined until the eleventh day, the case having been supposed to be uncomplicated acute rheumatism, and was then enlarged, the upper edge reaching the top of the eighth rib. The infection could hardly have been of hospital origin. In the other, several years ago, the marked rise in temperature was on the fourteenth day after admission, which marks its origin as doubtful. The sanitary administration of the hospital is admirable, and leaves nothing to be said upon that point.

In 40 patients albumen was found in the urine; three had diffuse nephritis and recovered; one, and probably two, had interstitial nephritis, of whom both died. Four had broncho-pneumonia, and four pneumonia. Mild bronchitis was exceedingly common. The three pregnant women recovered, one with abortion in the third month, the other two without miscarriage in the sixth. Four nursing women got well. Two were sent to insane asylums with mania, one with acute dementia regained her mind, but afterwards died. There was troublesome, often obstinate, vomiting with 23, and for 16, rectal alimentation was resorted to. There was diarrhœa in 31 cases, in five severe; intestinal hæmorrhage readily controlled in four; in 10, multiple neuritis, not including the mild cases in convalescence.

Of the 10 who died, two were moribund when they entered the hospital and two died within four days of entrance. Two others were unable to retain sufficient food or nutrient enemata, another had interstitial nephritis with enlarged heart. One with phthisical antecedents had had hæmoptysis. One died of exhaustion from severe gastric hæmorrhage and embolism. One had multiple neuritis in severe form, and probably involving the pneumogastric nerve. In reviewing them now, I cannot see how the chances of eight might have been improved. The remaining two, with my present experience, I should treat again, as in two cases to be detailed later, by stopping the use of alcohol and giving opium more freely. One had severe diarrhœa, contracted kidneys and slightly enlarged heart. In the other, the predominance of cerebral and mental symptoms, the brown consistent dejections, the absence of distension or tenderness of the abdomen, a phthisical family history and a negative temperature chart, caused a doubt whether miliary tuberculosis might not be the cause of the enlargement of the spleen, the upper border of which was at the seventh interspace, the edge lower not being felt.

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[1] Read before the Suffolk District Medical Society, October 26, 1889.

While we admit that many recover from typhoid fever without active medical treatment, it is always safe to take the ground that in each case, however mild in appearance, the illness may prove long, serious or fatal. The unexpected constantly happens. This is especially true of hospital patients, who are, upon entrance, often weak from having been ill for a considerable time without sufficient care, or debilitated by bad habits and bad living. They must be discharged, too, if recovered, ready to go to work at the earliest possible moment. They need every chance to be turned in their favor, not only for life, but for the best results as regards strength.

If not later than the beginning of the second week and there has not been severe diarrhœa a mild cathartic is indicated by all the pathological views held at present. Whether calomel has any specific action or not I am not sure, but in a single efficient dose it is mild and harmless. My experience of it is that after its action there is a greater readiness to take food than with other cathartics, as is the case also in the course of the fever from a fifth or tenth of a grain three times a day for two or three days.

I had thought that I was on solid ground as to food, until one of our accomplished physicians criticised the diet of one of his former patients, then in my ward, on the ground that it had not been limited to milk. But the year's experience has satisfied me that with as great a variety as is safe, patients eat more, that the stomach is less likely to give out, that the strength is better conserved for the later demands upon it, and that no harm is done. I continued to give milk, egg-nog, strained broth, beef tea, and gruels, with coffee or tea, often both. After the first week, I am usually not satisfied with less than from sixty to ninety ounces per day for an adult. One article of food, matzoon, which I have found valuable when the stomach could not bear anything else at my command, has proved of such value in so many cases that I desire to call the attention of the Society to it. It is an Armenian preparation of milk fermented with the yeast plant under especial conditions of temperature, etc.

Nutrient suppositories and enemata four to six times in the twenty-four hours can be used, and from several days to several weeks, according to the patient; but I have rarely found them of much avail, except for a few days, as an exclusive source of nourishment. Forced feeding with the nasal or œsphageal tube in violent resistance is dangerous and ineffective.

If I have given my patients a fuller diet than has been customary, I have, on the other hand, restricted them as to solid food later than is usual. They sit up after about a week's duration of the indications of convalescence, and then have crackers or bread without crust, the return to meat and a mixed diet being very gradual. I also personally direct for each day the length of time for each patient to sit up, beginning with twenty minutes, hoping by these precautions to at least diminish the chances of relapse. A small quantity of quinine, a grain or two, three times a day, is useful at least in improving appetite.

To fourteen typhoid patients this year out of eighty-two, no alcohol was given. It was prescribed for six as a stimulant for a single dose a few times or for a few days. Seventeen had wine in small quantities or as a vehicle for lactate of iron. Twenty-five were given wine, Tarragona, sherry, often as wine whey, champagne, in quantities from three to twenty ounces daily. Fifteen had wine and brandy and whiskey. To three brandy was given, to one brandy and whiskey, and to one champagne, brandy and whiskey.

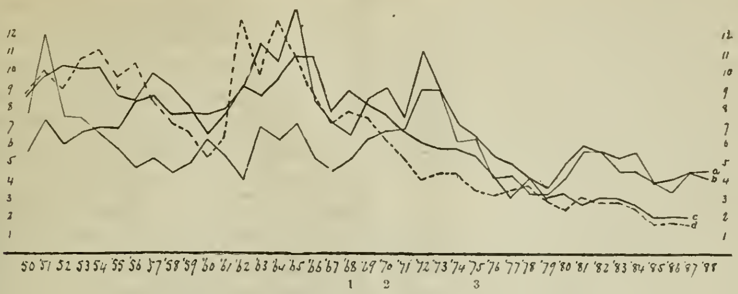
Wines have seemed to me to possess some advantages over brandy and whiskey besides being less irritant in the same degree of alcoholic dilution and less likely to contain amylic alcohol and the injurious properties of impure liquors. In moderate amount, wine promotes appetite and digestion and acts as food or at least takes the place of it. I know of nothing else which in many cases of typhoid fever does so well in quieting delirium, calming restlessness and relieving sleeplessness, controlling diarrhœa, and for these purposes I prefer it to medicine. As it does not elevate the temperature it may be prescribed in any stage of the disease. It is not always needed, the frequent ready resort to its use constitutes its greatest danger to the community, and the precautions to prevent its abuse naturally suggest themselves to physicians. Often other stimulants answer as well.

When alcohol is used as a force-regulator to stimulate depressed nervous energy, to rouse a flagging heart, its proper dosage seems to me one of the most difficult problems in therapeutics. While I believe in its free use to accomplish its purpose, when it is needed, my impression is that too much is oftener given than too little. I doubt whether there are many cases of typhoid fever, for in it there is not often a few days' crisis as in pneumonia, where more than the quantity which is oxidized and excreted, or about the equivalent of four ounces of good brandy a day, can be ordered to advantage for a considerable length of time. Frequently not so much can be taken continuously and there should usually be in each twenty-four hours, a sufficient period during which it is not given, to secure its elimination. The question of dosage varies so much in different patients that there is no law for it but the needs of the individual case. The pulse and respiration are better guides to its use than the temperature, but best of all is the whole state of the patient. With acute dementia, persistent coma-vigil, and neuritis involving the pneumogastric nerves, alcohol seems to me to be contra-indicated (as it is to people of certain temperaments or idiosyncrasies in every condition) in all but small quantities.

Two instructive cases this season are a young woman, entirely temperate, and a man who had for a long time been a hard drinker. Both were on the dangerous list with high temperature, pulse, and respiration, great prostration, and those symptoms which are generally considered to indicate free stimulation. The young girl had acute dementia, also, and broncho-pneumonia. She was taking twelve ounces of champagne daily and three ounces of whiskey in nutrient enemata. Considering the alcohol prejudicial to her mental recovery, I omitted it, and took the chance of her strength holding out. She improved in all respects almost at once, and was well on in promising convalescence when a large gastric hæmorrhage and an embolism in the leg proved fatal. Encouraged by the improvement in this case, I dropped the alcohol with the man. He began to improve in a day, and recovered. In both cases an opiate was given every four or six hours when the alcohol was omitted.

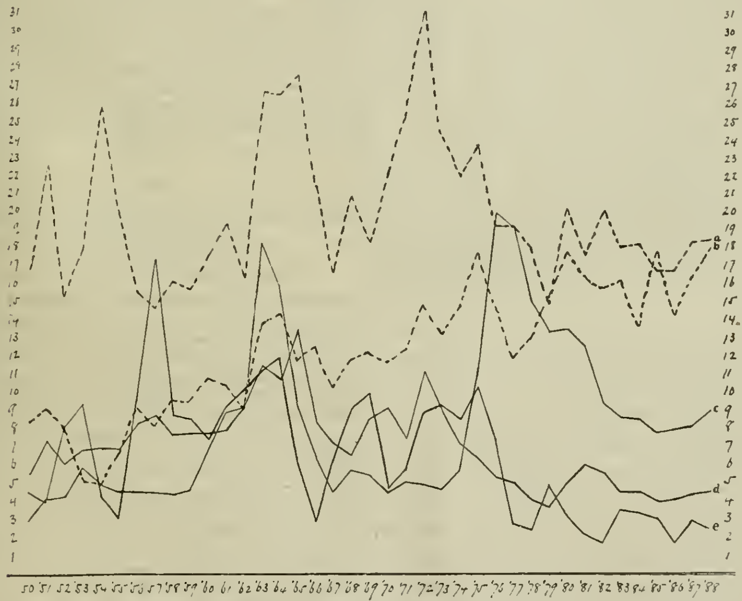
Judicious means of controlling or regulating fever comes next to the wise use of alcohol in typhoid fever, their more or less enthusiastic supporters giving to one

Chart No. 1.



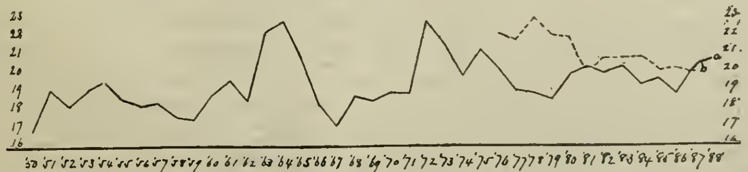
Typhoid Fever (including "Typhus" Fever and "Fever"), 1850–1888.
Deaths per 10,000 of Population.
a, Massachusetts. *b*, Boston. *c*, England. *d*, London.
1, Roxbury annexed to Boston. 2, Dorchester annexed to Boston. 3, Charlestown and West Roxbury annexed to Boston.

Chart No. 2.



Deaths per 10,000 of Population in Massachusetts, 1850–1888.
a, Diarrhœal Diseases. *b*, Pneumonia. *c*, Diphtheria, including "Croup." *d*, Typhoid Fever, including "Typhus" and "Fever." *e*, Scarlet Fever.

Chart No. 3.



Total Deaths per 1,000 of Population, 1850–1888.
a, Massachusetts. *b*, England.

or the other the precedence. I have never used cold baths because those who advocate them admit their danger to a weak heart, and the risk from their use in intestinal hæmorrhage, and dwell upon the special skill and training, not easily available, which is needed in giving them, and because I doubt whether they possess any real advantages over cold sponging, which I prefer and freely use, or the wet pack. My observation leads me to think that small doses of quinine, and possibly a little wine, slightly moderate the febrile disturbance and, of course, do not interfere with the free use of cracked ice and cooling drinks.

Of the antipyretic drugs, phenacetine is by general consent the least depressing to the heart. In neuralgia of the fifth pair, indeed for almost everything covered by the vague term headache, it is invaluable. I have given it in doses of twenty grains repeated in an hour for several successive days with the greatest relief to severe pain in the head and without apparent harm, in the first week of typhoid fever. In health the small dose, in my experience, has oftener than not produced a slight feeling of exhilaration. In fever, the drop of the temperature from the same dose is greater, and although there is usually an almost immediate sense of comfort from the exhibition of three grains to a woman, or five to a man, I have found it to be with a relaxed feeling as a rule. In the same dose it quiets restlessness and promotes sleep.

In most cases as good an antipyretic effect may be got from sponging with cool water, which is at the same time invigorating and a tonic to the nervous system. As an analgesic I know of nothing which fully takes the place of phenacetine. As an antipyretic my experience leads me to use it with caution, at least after the heart has become weak, to give it in such doses as not to produce a drop of more than a degree or possibly a degree and a half in the temperature, and to substitute for it, as a rule, but not always, cool sponging.

If there is persistent sleeplessness in spite of the measures already mentioned, the stimulating narcotics like paraldehyde, amyl-hydrate or even opium are more indicated than those which are depressing like chloral and the bromides.

The tendency of treatment has been with a view to sustain strength, and thereby prevent heart-failure. It goes without saying that all complicating symptoms are to be met promptly. My experience has been in favor of checking diarrhœa earlier than is recommended in the text-books, and I have thought that by careful watching we might anticipate a threatened intestinal hæmorrhage with the suitable means for its control. Vomiting has been met, beside external irritation, with oxalate of cerium, dilute hydrocyanic acid, creasote, champagne, peptonized food, etc., and by resorting without delay to nutrient enemata and suppositories.

If the heart is still unduly weak, a guarded use of digitalis with nux vomica and iron may be alternated with strychnia and caffeine. But, though the heart must be sustained, there is danger in over-stimulating. Coca in my experience interferes with sleep, camphor I have rarely used. As regards heart-failure, it is a well-known fact that alcoholic neuritis has been shown, *post-mortem*, to affect the pneumogastric nerve so as to produce death, when in other parts of the body the symptoms were not alarming. In diphtheria I suppose that heart-failure is admitted to be often due to the same cause. I believe that the indications of it in typhoid fever are a rather sudden and otherwise unexplained change in the patient's condition, with increased pulse-rate, accelerated respiration, in some cases elevated, in some lowered temperature, dusky or cyanotic skin, evidences in the brain of disordered circulation and defective blood-aeration, and especially if at about the same time a general peripheral neuritis appeared. Such cases are apt to prove fatal. I have thought that they showed an intolerance of alcohol, and the advantages of freely prescribing opium.

Recrudescences of fever after abatement may constitute a feature of certain epidemics, or may be due to mental agitation, errors in diet, sitting up too early or too long, etc. How far the same statement applies to relapses is to me a question still under judgment. The temperature is alone no certain guage of condition or guide for treatment. One of my patients whose temperature had been between 100° and 101° for a week, had a clean tongue, cool skin, natural abdomen, spleen returned to normal size, and all the appearance of convalescence. She was allowed to sit up and quickly got well. In another patient, the temperature dropped to 97° and remained below 99° night and morning for a week, being normal three evenings out of the seven, but his tongue was still coated, abdomen distended, tender and tympanitic, his spleen remained much enlarged. Without seeing his temperature chart, one would not have appreciated a material change in his condition.

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FOUR CASES OF ANEURISM TREATED BY THE OLD METHOD.[1]

BY ABNER POST, M.D.,
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DURING my service at the hospital this last summer there lay, at one time, in one ward, two cases of diffuse aneurism of the femoral, and two cases of true aneurism of the popliteal. These four cases were all operated upon by the old method of incision and ligature of the artery at both ends. All four cases did uninterruptedly well. Such a collection of cases is, it seems to me, worthy of note, and I propose to report them to-night, in the first place because the cases themselves seem to be of interest, and in the second place because they illustrate most markedly some of the changes in surgery in the last hundred years.

The first case entered the hospital on May 14th. Three weeks previous to entrance, in lifting a barrel of coal from a wagon the barrel slipped, striking the inside of the patient's left thigh, just above the knee. On the next day the patient was quite lame, could get about and walk, but noticed a swelling in the thigh, which grew larger and larger. Walking became more difficult, and upon entrance there was a large swelling upon the inner side of the left thigh, with the greatest fulness at the junction of the lower and middle thirds, making the circumference nearly as large again as that of the other. There was no pulsation, no thrill, no bruit; no especial tenderness on pressure. When I first saw the patient the swelling was covered with a poultice. The patient asserted that marked changes took place from time to time in its volume. No pulsation could be obtained in the arteries below it. As he lay in the hospital his temperature was normal, and he was practically without pain, but on May 19th, his temperature rose and the leg became exceedingly painful, and on the 20th, the operation was performed.

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[1] Read before the Suffolk District Medical Society, October 26, 1889.

An incision was made over the most prominent part of the swelling, revealing a cavity filled with clotted and fluid blood. These clots were thoroughly cleaned out with the hand, and at the bottom of the cavity the severed artery was found, into which a probe was introduced; the soft parts were dissected away, the artery exposed as well as possible and tied in the region of Hunter's canal. A similar ligature was put upon the artery below the tumor. The tourniquet was then released, and all communication between the artery and tumor was shown to have been stooped. The cavity was then carefully washed out in the first place with hot water, to check all bleeding, and finally with a solution of bichloride of mercury, 1–2000. The cavity was then closed at both ends, and without the insertion of drainage-tubes was dried as far as possible and a baked dressing applied. The subsequent history of this patient was uninterruptedly good. On the third day the temperature had arisen to 102.4°, and at that time, and because of this rise in temperature, the dressing was taken down and the limb redressed. No pus was found; there was simply a slight oozing and it was re-dressed in the same manner. The normal temperature was reached on the 27th, seven days after the operation, the highest temperature having been 102.6°. The patient was discharged July 11th, practically well.

This first operation was done on May 20th; on May 25th, the second case entered the service and was placed in the bed beside the first patient. This patient, like the first, was a mulatto; the left thigh was also the one affected. The history was quite similar. He attributed his trouble to a strain while lifting a barrel of ashes on May 14th. Three days later he noticed a lump the size of a hen's egg. By the 21st, the lump was large as an orange, and "was beating like his heart." It was then very painful and kept him awake at night. Though the leg was sore he had kept about till the day of entrance. This patient presented a swelling like that of the first, although not so large. Then from the first this tumor pulsated, and there was a bruit above it. There was a systolic murmur over the apex of the heart. No pulsation could be found in the tibials, although it was found on the right side. On the 28th, seven days after, the patient was etherized, an elastic bandage was put on, and the elastic tourniquet applied. An incision was made, the clots turned out and the arteries secured; the tourniquet was removed, and no bleeding followed. It was washed out with hot water, and then with a solution of corrosive sublimate, 1–2000; the wound was made as dry as possible, with baked gauze. The middle of the incision was left open. The dressing was so arranged as to close, as nearly as possible, the wound. A baked dressing was applied and the patient returned to bed. His highest temperature during convalescence was 102.4°, on the second day. It fell to 98.6° on the fifth day. The highest pulse was 106. His recovery was uninterrupted, except for an ulcer which had existed on the same leg before the operation. He had had some sort of a bruise, and the skin had just separated at the time of the operation. That healed entirely, and he was discharged, practically well, on July 16th.

The third case was a popliteal aneurism, as follows. The man aged forty-one, entered the hospital June 1st. He had had some sensations which drew his attention to the popliteal region in the previous March. He then received a blow in that region from a crowbar. Probably the trouble had existed before the blow. The last part of April he noticed a swelling in the popliteal region, which gradually increased. The pain had been so severe during the last five weeks as to keep him in bed most of the time. Examination showed a pulsating swelling in the left popliteal region. The stethoscope showed a bruit. Pulsation was absent in the arteries below. Three days after entrance an incision was made as in the preceding cases; clots turned out; artery tied. The depth of the wound made the operation difficult. A probe was passed into the artery, which made it more easy. The tourniquet was released, and in this case the blood flowed freely, in spite of the ligature. The tourniquet was re-applied, and a second ligature was tied above the first one. Again the tourniquet was taken off, and again the blood flowed directly from the orifice of the vessel. Another tourniquet was applied, and examination showed that the rupture had taken place at the point where quite a large branch was given off; the bleeding was from this branch. This was tied, and the bleeding ceased. In this case a large portion of the sac was removed before the wound was closed. The wound was thoroughly irrigated with 1–2000 sublimate solution, the upper and lower ends of the wound sutured, leaving an opening of two inches. A baked dressing was used and a ham-splint applied. The patient complained of a feeling of numbness and was sensitive to pressure for several days. The circulation was slow to re-establish itself, but gradually the foot became warm. On the second day after the operation the temperature rose to 104°, but experience had shown that this rise might be disregarded. The temperature fell immediately, and the dressing was not removed until the twentieth day. At the time the dressing was removed all that remained was a slight granulating spot, hardly the size of a half-dollar. This man's highest temperature has already been mentioned. With that exception he went on to entire convalescence without accident or incident of any sort. He was discharged from the hospital July 6th.

On June 15th, while making my visit, I was called to the accident-room to see a case just admitted to my service. A man lay upon the table, evidently in extreme pain. On exposing the leg, of which he complained, it was found to be greatly swollen, mottled, cold, the toes already blue, and apparently upon the point of gangrene. Closer examination disclosed, in the popliteal space, a circumscribed aneurism, which the patient said had existed for the past six months. Its existence had given him very little trouble until the previous day, when his leg had begun to swell, and the pain had been so great as to keep him awake during the previous night. So discolored was the leg that it seemed impossible that anything short of amputation could give him the least chance. He was, however, put to bed, the foot of the bed raised, to favor the return of blood and the subsidence of œdema; opium, was given to quiet his pain, and the event was awaited, the patient being given a most gloomy prognosis, and amputation being held out as affording him the only hope. On the next day the swelling had subsided in great measure, the pain was mostly gone and his leg and the upper part of his thigh had recovered its normal color. The improvement continued to go on for several days, until circulation had practically returned through the whole leg except the toes. The toes had become gangrenous, the line of demarcation had formed at their roots, and on June 29th, the same operation was done upon this patient as upon the others, the sac being laid open and the artery tied above and below. It was intended at the time of this operation to remove all the gangrenous toes, but although the operation had progressed without especial hindrance or difficulty, it had endured for more than an hour before I was ready to attack the toes, and it seemed best to send the patient back to bed once more and leave the amputation until a later date. This first operation was done upon June 28th, and the toes were not amputated until July 10th. They were then removed at the metatarso-phalangeal articulation, the flaps being hardly sufficient to cover the joint. This patient, notwithstanding the gloomy prognosis made to him at first, went on to an uninterrupted recovery. His wound in the popliteal region made by the operation for the aneurism was not disturbed until the twentieth day, when that, also, like the preceding case, was found to be perfectly healed except a small granulating point. The wound by which the toes were removed was much longer in healing, as it was obliged to granulate. The patient did well, and went out on August 26th. He has since returned for the removal of the head of one of his metatarsals, that having become necrosed, being imperfectly covered.

Now here are four cases, operated upon by the old method, usually the method of last resort, as it is the severest and bloodiest. It seems to me that one who had deliberately chosen the severe method, without any use of the milder methods, should give good reasons for the proceeding; and in brief I will try to give the reasons that influenced me in making the choice. It was not deliberately done from the beginning, but each case helped to determine the case that succeeded it. The first case was a diffuse aneurism in which the amount of clots poured out was very great indeed. Although the diagnosis of aneurism was made, there was still the possibility of doubt, and such an operation was chosen as would make the diagnosis perfectly certain. The old operation is the one recommended by most authorities for such diffuse aneurisms, where the clots are diffused through the muscles so freely, and it seemed eminently proper in this case because of the slight doubt in the diagnosis. The operation was done, and was successful. It proved so much more readily successful than I had been led to suppose that when the second aneurism presented itself, also traumatic, I was the more ready to adopt the method in that case. In this case, which was a more discouraging one, the man being somewhat older, and his leg being in not especially good condition, having already this injury of the skin, did equally well.

The third case was the first popliteal aneurism. Ordinarily, had that case presented itself first, I doubt not I should have tied the femoral in the triangle, or have resorted to some of the methods of compression. But these two operations of tying the artery at each end of the aneurism having proved so successful, I was led to consider the propriety of its use in this third case. Now, the lower the artery can be tied, of course the greater chance of good result to the leg, and if it is possible to destroy the artery below the point where the number of branches leave the femoral about the knee-joint, the chances for a favorable condition of the leg after the operation are certainly very much increased, I was therefore led to do the same operation upon the simple popliteal case, and here I met with a result which was even more favorable than that of the the other cases, meeting with absolutely no suppuration, the case healing as readily as a simple incision through the skin. The fourth case, on entrance to the hospital was certainly a most discouraging one. Rather unexpectedly, the leg regained its circulation, but still it was not a case in which one could experiment; it was certainly not a case in which one would care to make pressure over any part of the limb, and the operation, which should, once for all, obliterate the artery at the lowest possible point seemed to me to offer that man also the best possible chance for safety, and for that reason the old operation was done upon the fourth man also.

Now, there are various matters in connection with the operation, of which I wish to mention one or two. In the first place, in the first two operations, I was practically obliged to tie the femoral in Hunter's canal, and it is by no means an easy matter to tie the femoral at that spot. I found it absolutely impossible to isolate the artery, and was only able to tie it by passing the aneurism needle forcibly beneath it, including the adjacent tissue in the knot. During this process, the vein is easily wounded. For fear of injuring the vein, I gradually worked the aneurism needle through, between the artery and vein. In doing this the needle tended to turn in the handle, and I spoilt at least two of the needles belonging to the hospital. A similar case is recorded in the practice of a well-known English surgeon, who passed a sharp needle and wounded the vein, which gave him great trouble.

During the course of these operations I introduced the probe into the artery in order that I might more easily isolate it, making it more prominent. I had never seen the introduction of the probe, under such circumstances, recommended, and although it was the most natural thing to do, I imagined for a time that that was a new procedure upon my part; but on turning to an article by Mr. Annandale, written a few years ago, I see he figures it; and to-day, in looking over an old surgery, by Benjamin Bell, to find his directions for doing the old operation before the days of antiseptics and anæsthetics, I find there the direction to introduce a probe into the artery in order that it can be more easily isolated; that was published in 1736.

No drainage-tube was used in any case. The dependent position of the incision made it easy to secure drainage without tubes, and the cavity was as far as possible obliterated by approximating the surfaces.

I have given the preference, in these operations, to silk, over other ligatures, and their action is interesting to note. The silk was a heavy braided silk, which is quite bulky. Some two years previous I tied the femoral at the bottom of a wound in Hunter's canal with the same difficulty mentioned above, and was afterwards obliged to secure the artery in the apex of Scarpa's triangle. In this case I used the same braided silk which had been carefully prepared, and it gave no trouble until some months afterward, when an opening formed and one of the knots appeared. This occurred repeatedly, until all four knots were ejected. This same process has already taken place in two of the cases, the two popliteal ones. Each one of these cases has already extruded a knot.

To me these cases are interesting by comparing with similar cases operated upon years ago. Mr. Erichson, in the eighth edition of his "Surgery," says: "The operation of opening the sac, turning out the contents, and ligaturing the artery supplying it, is in any circumstances a procedure fraught with the greatest danger to the patient and full of difficulty to the surgeon even when he knows in what direction to seek the feeding vessel." The great difference is in the antiseptic method. In the first case the aneurism was diffuse, the clots had dissected up the muscles, and were deposited in great masses in the muscular interspaces. The loss of blood was greatest in this case, as the tourniquet proved not to have been perfectly adjusted, and the patient showed the effects of the operation enough to make us hasten it a little at the close, and the wound was perhaps not washed out with the great care its nature demanded, and a cavity formed, — which was a very natural result of the operation, — but which possibly might have been prevented. In the second and third cases there was no suppuration whatever, a result absolutely unattainable by the older method.

As a contrast to the favorable result of these cases, I wish to give a few lines only from Mr. Percival Pott, who wrote, as nearly as possible a hundred years ago. He asks in the first place in what manner this disease is to be treated, and he answers that, theoretically, it ought to be treated by the old operation, by what he called, at that time, *the* operation. He then goes on to say, "I will not take it upon myself to say, but certain I am that it does not succeed: I have tried it myself more than once or twice; I have seen it tried by others; but the event has always been fatal; excessive pain, a high degree of symptomatic fever, great tension of the whole limb rapidly tending to gangrene, and ending in mortification both upwards and downwards have destroyed all those whom I have seen on whom the operation of tying the artery has been practised. Nor have I ever seen any other operation than that of amputation which has preserved the life of the patient."

I cannot help thinking that Mr. Pott looked at the operation with a little more gloomy aspect than some other surgeons of the same day, but we certainly may believe that the operation at that time was very different in its results from what it is at the present; and in rapidly reporting these cases I do not wish to claim universal applicability for the old operation, nor do I claim that it will always meet with a favorable issue. Undoubtedly misfortunes will occasionally attend any method of treating aneurisms of the thigh; but these cases show that the old operation, under the new conditions, is very different from the operation in the pre-antiseptic days.

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TWO CASES OF EXTRACTION FROM THE VITREOUS, OF STEEL WHICH HAD PASSED THROUGH THE LENS.[1]

BY O. F. WADSWORTH, M. D.

April 27, 1886, a boy of thirteen, while watching a man at work with hammer and drill, felt something strike his right eye. He was seen not long afterward by the family physician, who discovered no wound. There was moderate pain and photophobia at first, soon relieved; but on the evening of the following day he complained that he could not see with the injured eye. I saw him on the morning of April 29th, less than forty-eight hours after the injury. There was scarcely any congestion; a linear cicatrix near the centre of the cornea 2 mm. long; a scar in the anterior capsule and sufficient opacity in the lens, chiefly posterior cortical, to hide, with moderately dilated pupil, the parts behind it. A few hours later, when the pupil was fully dilated, careful examination revealed a grayish body behind the lens, nearly in the course of the wound, and slightly movable. He counted fingers at 2′–3′.

The next day the lens was a trifle clearer and through its lower and inner part the body behind it was made out to have a sharp outline. Fingers at 5′.

After another twenty-four hours the lens was still clearer and fingers were counted at 6′–7′. The foreign body could be made out pretty well with a + 7. behind the mirror. It had very little motion, only swung gently with movement of the eye, had a defined angular outline, and on one surface presented the appearance of a fresh fracture of steel. Operation for removal was advised and agreed to.

The following day, May 25th, cocaine was applied, the lids washed and the conjunctiva sluiced with solution of bichloride (1–6000). The eye was rolled upward and inward with forceps; a fold of conjunctiva between the external and inferior rectus raised and divided meridianally; a Græfe knife thrust perpendicularly through the coats of the eye about 8 mm. from the cornea and the cut prolonged backward some 5 mm.; the conical point of an electro-magnet was passed in nearly half an inch in the direction of the foreign body and withdrawn once without result, but on the second withdrawal brought with it a thin scale of steel, 1¾ mm. x 1 mm. There was apparently no escape of vitreous, though the conjunctiva over the wound puffed a little. The bichloride solution was again applied freely and both eyes bandaged. When the bandage was changed at the end of twenty-four hours the right eyebrow was said to be tender to touch; at no other time was there any pain. The bandage was omitted after five days. There was a little puckering of the conjunctiva around the wound.

May 9th, a week after the operation, no congestion; puckering of the conjunctiva less. Fingers at 8′.

May 12th. Fingers at 14′; lens somewhat clearer; the posterior cortical opacity chiefly central; the disc seen tolerably well through the lower part of the lens.

May 24th. Fingers 14′; conjunctiva at wound quite smooth; atropine which had been used till now omitted.

June 15th. With pupil undilated, fingers at 8′. Under dilatation with cocaine a fair view of the disc is obtained, but there is much irregular astigmatism. Well downward and outward is seen the posterior end of a brilliant white space, as if the sclera were exposed by retraction of the choroid, the lateral edges of the space sharp, at its posterior angle a red spot as of hæmorrhage.

Thirteen months after the injury the cataract had become complete and fingers were counted at 1′ imperfectly.

The patient was killed last fall in a railroad accident.

J. L., aged thirty-one, mason, applied to me January 27, 1889. Sixteen days before, while using a hammer and cold chisel, something struck his left eye. He had no pain at the time nor afterward, but since then had seen something floating before the eye.

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[1] Read before the American Ophthalmological Society.

There was now a linear cicatrix in the cornea, 2 mm. long, about 3 mm. from the inner edge and just below the horizontal meridian; a small open wound in the iris at a little higher level; a band of opacity running backward through the lens from behind the wound in the iris, the remainder of the lens clear. On movement of the eye upward and downward a small dark body rose into view from behind the iris, and quickly fell again; and when the pupil was dilated by atropine this was made out as a bit of steel, showing metallic glitter as it moved, and in shape resembling a flint arrow-head. A fine cobweb-like thread was attached by one end to the steel and with a strong + lens behind the mirror a few other very fine threads could be seen. With this exception the vitreous appeared clear and the fundus normal in all directions.

On the following day, under cocaine, and after washing the lids and sluicing the conjunctival sac with bichloride (1–6000) the eye was rolled strongly upward and inward and held by forceps; a fold of the conjunctiva raised, and divided meridianally between the external and inferior rectus; a Græfe's knife thrust perpendicularly through the sclera about 8 mm. from the cornea and the cut carried backward some 5 mm. Then the small conical point of an electro-magnet was pushed into the vitreous toward the foreign body and withdrawn twice without success, but at the third attempt it brought out a pointed bit of steel, measuring $2\frac{2}{3}$ mm. x 1 mm. x $\frac{1}{2}$ mm. Only a small drop of fluid vitreous was lost; the edges of the wound came together and the conjunctiva covered the wound in the sclera. The eye was sluiced again with bichloride solution and a binocular bandage applied.

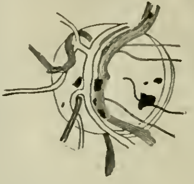
There was never any pain. The bandage was removed after six days.

February 4th, a week after the operation, there was little conjunctival congestion; a moderate circular thickening over the position of the wound; no sensitiveness to light; no tenderness on movement of the eye in any direction; pupil of moderate size; cornea and lens as before; possibly a few more fine threads in the vitreous; fundus unchanged except at site of wound. When the eye was turned strongly downward and outward the posterior end of the wound of operation came into view. The sclera was bare over a wedge-shaped area, through the centre of which, but not quite reaching the apex, ran a lead-colored line. This area was bounded by a narrow strip apparently of choroid uncovered by epithelium and then came the normal fundus of a nearly uniform darkish red; the whole quite regular and sharply defined.

Nine days after the operation he began to see occasional flashes of light before the eye, perhaps a dozen in the course of the day, appearing without special cause. In a few days these became fewer and were seen mostly in the evening about 6 o'clock. There were no other symptoms of irritation.

February 15th. The thickening over the wound has disappeared. V. R. $\frac{11}{12}$; L. with + 75 cyl. axis 90° $\frac{11}{12}$—. Two dots of blackish pigment have appeared on the disc near its lower and outer edge. Otherwise fundus and media as before.

February 25th. Flashes only on rising in the morning and occasionally in the evening. R. $\frac{14}{12}$ +; L. with + 50 cyl. $\frac{14}{12}$ —. Vitreous unchanged. On the posterior capsule of the lens near the end of the band of opacity a cluster of very fine clots is seen with a strong convex lens behind the mirror. The dots of pigment on the disc noted on the 15th, are, at least one of them is larger, and there are several other black spots as shown in figure. (Some of them are represented too large, some are quite fine). A few dark dots are seen moving in posterior vitreous. Sclera visible at position of wound, but the lead-colored hue seen on 4th is not made out.



April 2d. Examined by members of the New England Ophthalmological Society. Condition about the same. V. not tested. The flashes less. Some of the pigment spots on the disc larger.

May 22d. He says that now the "fine" flashes which "are bright like a lamp but small and quick," have diminished in number, that they are seen only about once a week, then generally in the evening, but a few days after the examination in April (from which he felt no inconvenience) he began to see on first rising in the morning or in the evening a grayish light moving with moderate speed round the upper and outer side of the eye and occasionally passing more than half-way round the eye. The light usually moved from the upper and inner angle of orbit outward and then downward; sometimes in the reverse direction; rarely it "divides and shoots off." At first this appearance became more frequent, but latterly rather less so: he now sees it from three or four to a dozen times in the morning in the course of ten to fifteen minutes, rather oftener in the evening. He has been doing light work the last two weeks. Lately he has occasionally on looking to the right seen something come over the left eye from its outer side and then go back again. V. $\frac{14}{12}$—. An extensive defect in the outer and lower quadrant of the field, encroaching slightly on the adjacent quadrants, in other directions field of normal extent. Lens as before. In the vitreous the fine threads are not more numerous, but there is, nearly in the anterio-posterior diameter, a small globular grayish body with a tail. There is more pigment on the disc and the spots previously seen have changed. The larger one depicted on February 25th is now much broken; while another, as large as it was, has formed a little below it, and there are more spots over and near the larger vessels. There are also in various directions, on or just in front of the retina, small, black rounded spots not all sharply defined, perhaps a dozen in a radius of two diameters from the disc. The bare sclera is seen at position of wound of operation, wedge-shaped, something resembling a choroidal vein crossing its apex, a small blackish mass which seems to project slightly into the vitreous over its (apparent) lower edge near the apex, and a short black band near this running nearly perpendicular to the edge, upward and inward directly opposite to the wound. Upward and inward the retina is separated, and comes nearly straight forward, looking gray and opaque, the fold cutting off the fundus to within half a diameter of the disc, and the separation extending upward and outward to a little beyond the vertical meridian, downward and inward a little below the horizontal.

June 1st. The separation of the retina is much more extensive. It reaches much farther outward above, and almost straight downward from a little to the inner side of the disc; but the parts which looked gray on May 22d, now generally transmit a red reflex and are irregularly wavy. Black spots are visible on the separated as on the non-separated retina, often overlying vessels, and where they lie on the profile of a fold they are seen to be close to, but a little in front of, the retinal surface. The appearance of the disc is the same, as is that of the parts about the wound. V. $\frac{14}{20}$. Defect of field corresponding to the separation.

June 7th. The flashes have become less numerous, and none have been seen the last two or three days. The separation has extended rather farther outward above. Apparently the black spots on the retina are rather more numerous, and there is a little more pigment on the disc. The vitreous shows somewhat more fine opacities.

July 1st. Separation of retina appears total, but there is no part so opaque as when first seen. The disc, seen rather indistinctly, much the same. The field in which he can see the finger at 18″ is apparently only about an inch wide and three inches long. Flashes are still seen.

The interest in these two cases centres mainly in the second. It is unusual, although by no means unknown, for a foreign body to pass through the lens, cause an opacity only along the wound, and leave the curvature of the central parts at least practically unchanged. A more favorable case of the sort for operation could hardly be imagined, and the result of the operation seemed at first all that could be desired. But the appearance of the flashes nine days after the operation and their persistence, and still more, later, the presence and variation of the pigment spots on the disc and in the posterior vitreous excited doubt as to the final result, a doubt which the end only too well justified. With these exceptions, for more than two months the condition was highly satisfactory.

Considering the pigment changes observed later about the wound of operation, it is probable that an irritative proliferative process was going on there, the results of which became visible at a distance, on the disc and in the most posterior parts of the vitreous, some time before they could be seen in the neighborhood of the wound itself. It is not easy to explain the mechanism of the separation of the retina, starting as it did at a point almost the farthest possible from the wound. The vitreous was repeatedly and carefully examined, and the threads visible in it were, perhaps, not too fine, but certainly too lax to have exerted any efficient drag.

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PRIMARY CANCER OF THE GALL-BLADDER AND BILE-DUCTS.[1]

BY J. H. MUSSER, M.D.,

Assistant Professor of Clinical Medicine in the University of Pennsylvania, Physician to the Philadelphia and Presbyterian Hospitals.

PART II. PRIMARY CANCER OF THE BILE-DUCTS.

Eighteen cases of carcinoma of the biliary passages confined to the ducts have been collected. In the series an actual history of hepatic colic was present in two, and in three a problematical one.

Age. — The average age of fifteen cases was 56.6 years. In three cases the age was not given. The oldest was 81; the youngest 35. Four occurred between 44 and 50, three between 51 and 58, three between 62 and 68, two between 72 and 74.

Sex. — There were 9 males and 9 females.

Symptoms. — Pain was noted present in twelve cases, the duration of which continued, in individual cases, from one month to two or three years. In one case the patient is said to have had epigastric pain extending to the shoulder for ten years. Pain is one of the earliest symptoms observed. It is usually located in the epigastric region (six cases). In five the pain was present in the hepatic region or the right hypochondrium, and was either spontaneous or developed by pressure. The character of the pain varied. In one it was described as bilious colic; in another as cramp-like in the stomach; generally the pain occurred in paroxysms. It varied in intensity. In some only slight sensitiveness on deep percussion could be elicited. In one instance the pain varied at different periods of the disease (see Musser's case). Usually, however, while the most persistent, and the most frequent of all symptoms, it never created much disturbance. Of the five cases Dr. Delafield described, two had attacks of severe epigastric pain, the onset being accompanied with jaundice, and one had pain throughout the course of the disease. Paroxysmal pain, occurring particularly about the time of the development of jaundice, appears to be the most common symptom of this affection.

Jaundice is the most frequent symptom (seventeen times). In most instances its duration practically indicated the duration of the disease. The duration in twelve cases occupied the following number of months: 5, 6, 4, 5, 24, 6, 3, 15, 7, 3, 2½, 18, 24, and 36 months. It usually deepened in intensity, and in four instances it was attended by itching. It terminated in coma in two cases, and delirium in three. In eleven instances in which the stools were described, ten presented the characters usual in jaundice, and one was black from blood. In Delafield's cases the jaundice developed rapidly, and progressed throughout the course of the disease, and it was the first symptom in all the cases. In three of his series the usual hæmorrhages that attend chronic jaundice were present.

Tumor. — The statement of the occurrence of a tumor was made in eight of the cases, and the position described to be as follows: in the right hypochondrium, in the region of the pylorus, in the right iliac region, opposite the umbilicus, in the right nipple line, and in the remaining instances in the gall-bladder region. It was described as hard, rounded, painless, twice, and three times it was stated to have the characteristics of an enlarged gall-bladder. In one it was first found to be as large as a pigeon's egg, and then grew to that of a hen's egg, and was painful; in another it slowly increased in size while under observation. In two instances the tumor was only described as painful. In Delafield's cases a tumor could not be detected during life, and the autopsies showed that the infiltration of the bile-duct was not sufficiently large in any case to have been detected before death.

The liver was noted to be enlarged in eight cases, with pain and tenderness on pressure. In four the liver was not enlarged and its edge not felt. In three cases the surface and edges of the liver were particularly described as free from any nodulation.

Gastro-Intestinal Symptoms were marked in all the cases, as follows: Loss of appetite occurred in five of the cases; marked dyspeptic symptoms in four; vomiting in nine; nausea without vomiting in two; diarrhœa in two, and constipation in the same number. Hæmorrhages from the gastro-intestinal tract were noted in two instances. As associated phenomena, in one case each, the following gastro-intestinal symptoms were noted; catarrh, bloody stools (due to jaundice probably), choleraic attack, and the symptoms of strangulation of the bowel. In two cases the abdomen was found to be much distended. The gastro-intestinal symptoms were the most marked in all of Delafield's cases, loss of appetite, nausea and vomiting occurring in each. In one instance hæmorrhages took place from the stomach, but the three symptoms indicated, jaundice, pain, and particularly vomiting, are the most prominent symptoms of this affection. In seven of the recorded cases, fever was present sometime throughout the course of the disease: in four it was intermittent; in one irregular, "associated with phthisis"; in two the characters were not described, in one of which, at least, there was an intermitting form of fever, as it was described as occurring in the evening only. In the five cases of Delafield, febrile movement was noted in one only, and in that it was probably due to suppurative inflammation of the bile-ducts.

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[1] Concluded from page 557 of the Journal.

Pathological Anatomy. — In fourteen instances the common duct was involved in the disease — once with the cystic duct; in three instances the hepatic duct, and in one the hepatic and cystic together. In three of these cases the growth was seated at the duodenal orifice. The bile-ducts were dilated in nine cases. In brief detail the pathological anatomy of each case was as follows:

(1) Common bile-ducts distended and obstructed by medullary cancer growing from internal surface. Bile-ducts dilated.

(2) Common bile-duct has encephaloid cancer near spur formed by union of cystic and hepatic ducts. Obstruction of canal.

(3) Common bile-duct closed by a tumor. Bile-ducts dilated.

(4) Common bile-duct at duodenal orifice obstructed by a cherry-sized tumor. Cylindrical carcinoma (?)

(5) Common bile-duct at beginning has walnut-sized tumor surrounding portal vein and hepatic artery. Bile-ducts dilated.

(6) Common bile-ducts at duodenal orifice is surrounded by an irregular fungus growth. Bile-ducts dilated.

(7) Hepatic duct and common duct thickened, firm walls, uniform yellow-gray. Common bile-duct collapsed but unaltered.

(8) and (9) Common bile-duct carcinoma.

(10) Dense whitish mass, no secondary deposits, occluded common and cystic ducts. Bile-ducts dilated.

(11) Common bile-duct blocked by a soft, whitish, sprouting encephaloid cancer just below junction of cystic and hepatic ducts. Duct above enormously dilated.

(12) Hepatic duct constricted by a cancerous growth. Ducts greatly dilated.

(13) Common bile-duct entirely replaced by a soft whitish growth. Hepatic duct dilated. Bile-ducts enveloped by cancerous matter.

(14) Common bile-duct has cancer at duodenal orifice, size small nut — a softened scirrhus. Bile-ducts enormously dilated.

(15) Common bile-duct has, near junction of cystic and hepatic ducts, a cherry-sized tumor; walls infiltrated and contracted. Another hard tumor in track of hepatic duct.

(16) Primary cancer bile-ducts with constriction of hepatic duct by scirrhous infiltration. Bile-ducts considerably dilated.

(17) Scirrhus of hepatic and common ducts. Bile-ducts dilated.

(18) Common bile-duct primary carcinoma, walls thickened, lumen occluded, secondary nodules in liver and head of pancreas. Cystic duct closed by cancerous mass.

Delafield states that in two of his cases the walls of the duct were the seat of cancerous infiltration alone; in two the new growth had extended to that portion of the pancreas immediately beneath the bile-duct, infiltrating its tissues to a moderate extent. In all the new growth seemed to have originated in the mucous glands in the walls of the ducts and had the characters of an epithelial cancer with cells of the cylindrical variety. In one of the cases there was catarrhal inflammation of the bile-ducts with suppurative inflammation of the adjacent liver tissue, producing small abscesses.

Gall-Bladder. — The gall-bladder was dilated and distended in eight cases, and contained calculi in seven. It was atrophied in one; occluded in one; and adherent to the pancreas in one, and the seat of some suppurative inflammation in two. Delafield found dilatation of the gall-bladder in only one of his cases.

Liver. — Gall-stones were found to be present in four cases. The organ was enlarged in eight of the cases and the seat of secondary deposits in seven. This enlargement was most common in Delafield's cases (four out of the five). The changes in the ducts have been mentioned.

Metastasis. — As just indicated, in seven instances secondary growths were found in the liver; one each in the mesenteric glands, the peritoneum and the pancreas. It is worthy of note that metastasis to distant organs does not take place save rarely. In the combined lists of cases, in one only were secondary growths found outside of the abdomen. In this instance, a case of Delafield's, the growth was found in the lungs.

The Cause of Death. — Death usually takes place from exhaustion, one-half of the cases being thus recorded. Jaundice, as previously noted was, of course, the cause of the fatal termination in two cases by coma, and the effects of the jaundice, namely hæmorrhages, caused death in one. Accidental complications, as pneumonia, pericarditis, œdema of the lungs, and ascitis were noted to be the cause of death in four of the cases.

The Symptoms of primary cancer of the gall-ducts are the symptoms of obstructive jaundice. It is seen that jaundice is the symptom common to all. Vomiting is next in the order of frequency. Pain, a tumor containing bile, and gastro-intestinal symptoms occur in all forms of obstructive jaundice and are not significant. No general symptoms arise to lead one to suspect the presence of a malignant tumor, or they are masked by the jaundice.

Hence it is difficult, in fact well-nigh impossible, to recognize the disease. By exclusion, obstructive jaundice due to external pressure may be eliminated. But jaundice, after a cicatrix in the bile passage, or in cases of adhesive inflammation, have common symptoms. Practically, jaundice due to calculi is the most important form to recognize. Attention to the previous history and the mode of onset of the disease are important, as well as attention to the well-known phenomena of impacted gall-stone.

Conclusions. — The conclusions regarding the disease are more striking when compared with similar conclusions from cases of cancer of the gall-bladder.

(1) Carcinoma of the bile-duct is less frequent than cancer of the gall-bladder.

(2) Unlike cancer of the gall-bladder it occurs equally in both sexes.

(3) The age of both is about the same.

(4) Gall-stones are less frequent when the ducts are the seat of the disease.

(5) The gall-bladder is not much enlarged and only by dilatation.

(6) Metastasis is not common and not distant.

(7) Adhesions and ulceration and perforation do not occur.

(8) Jaundice is more frequent in the second than in the first series of cases.

(10) The last symptom mentioned contributes largely to a cause of the short duration of the disease.

(11) The sequelæ of jaundice and accidental or intercurrent diseases are the cause of death.

(12) A tumor is present in a smaller ratio of cases than when the gall-bladder is the seat of disease. It is never as large as in cancer of the gall-bladder.

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Clinical Department.

SOME UNUSUAL FORMS OF DERMATITIS VENENATA.[1]

BY JAMES C. WHITE, M.D., BOSTON.

Three cases of dermatitis venenata have come under my observation within the past month, in which the exciting cause was so unusual that I wish to place them upon public record.

Case I. Chlorine. A school-girl, aged eighteen, came from X to consult me on account of an inflammation of the face. It had begun forty-eight hours previously. The skin from the middle line of the forehead downwards was uniformly red, swollen, and presented considerable areas of papules, vesicles, and oozing points. The eyelids were half-closed. The neck was in an erythematous state as low as the level of the dress, where it abruptly ceased, forming thus a sharply defined margin to the inflammation. The subjective symptoms in the part were great itching and burning. The whole aspect was that of an intense, artificial dermatitis of an eczematous type.

I in vain sought for a plausible exciting cause. The patient denied a possible contact with any well-known irritant, or exposure to any unusual influence in her surroundings. She had experienced no digestive derangement or constitutional disturbance. A local treatment, adapted to an acute eczema of a grade of intensity indicated by the cutaneous lesions present, was ordered.

Four days afterwards the patient returned and stated that she had thought in the meanwhile of a circumstance which might account for the trouble. Forty-eight hours before the attack she had been engaged at school in making chlorine gas for the purpose of testing its bleaching properties. She had turned hydrochloric acid upon black oxide of manganese in a jar, and the gas thus generated had come in contact with her face, held just above the jar, in such quantity as almost to suffocate her, and oblige her to run to an open window. The inflammation at this second visit was greatly reduced, all parts of the face, excepting the left cheek which was still occupied by a crust, having already subsided into the scaling stage of convalescence. There can be no doubt, in my opinion, that the exciting cause of the dermatitis in the case was the chlorine gas.

Case II. "Violet Water." A girl eighteen years old, presented herself at the skin department of the Massachusetts General Hospital with a fine papular eruption of bright redness, shaply defined in outline, upon the front chest. It was evidently an artificial inflammation, and on inquiry she stated that she had rubbed the affected part, some five inches square, two days previously with "violet water." At her second visit three or four days subsequently, at which time the dermatitis had almost wholly subsided, she brought the bottle of violet water. It was a bright green, alcoholic preparation, and had a strong odor of orris root, the usual substitute for the genuine perfume of violets in such cosmetics. The root of this European flag, *Iris florentina*, seems to possess acrid properties similar to those of our native *Iris versicolor*, and may well have been the irritating principle in this case.

Case III. Box. A young woman consulted me at my clinic for relief from an attack af acute inflammation of the face, which was uniformly and greatly swollen, very red, and thickly covered with a papular and vesicular efflorescence, and oozing areas. There was intense itching and burning in the part. I showed her to the class as an undoubted example of artificial dermatitis, although the closest questioning developed no evidence pointing to the exciting cause. I showed at the same time a well-marked instance of *rhus* poisoning, accidentally present, and called attention to the minute differences in the two affected faces, although both exhibited about the same degree of inflammation. There was a more uniform distribution of the dermatitis in the former, and the contents of the vesicles were not of the peculiar lurid tint, which so often characterize the latter. There was an undescribable something in the picture of the disease, which distinguished it from acute eczema. On the following day the patient returned to say that she had recalled the fact that twenty four hours previous to the first visit she had made a decoction of garden-box and applied it to her scalp, for the purpose of preventing her hair from falling out, and that the liquid had not only run down upon the face, but that she had subsequently washed her face with the rag used in applying it to the scalp. She had experienced no sensation of irritation of the scalp or face at the time. The patient was seen again five days later, and the inflammation was still severe in spite of the local treatment prescribed at the first visit. The scalp was not at all excited.

This border-plant of old-fashioned gardens, *Buxus sempervirens*, has been an object of suspicion for many centuries, as I have recorded in my work on dermatitis venenata, and belongs to the virulent family *Euphorbiaceæ*, which contains such cutaneous irritants as croton oil, euphorbia, manchineel, stillingia, Jatropha urens, and hura crepitans. I have never before met with an instance of its action upon the skin, nor was I aware of its popular reputation as a hair-producing agent, which it may deserve like its relative, oleum tiglii.

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[1] Read before the Boston Society for Medical Improvement, November 11, 1889.

A noticeable feature in all three of the cases was the ignorance on the part of the patients of the artificial nature of the affection, and of the exciting agent, until their attention was directed to this point.

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A CASE OF STONE IN THE BLADDER.[1]

BY OTIS K. NEWELL, M.D.,
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THE special consideration which induced me to give the President of this Society the above title for what I wished to present, was brevity. as most of what I have to say is appended matter hinging upon the subject of my paper.

The stone, of which the fragments weigh about five grammes, was removed from a young man eighteen years of age, and furnished a rather exceptional case of vesical calculus, in that it might be said to have been one without symptoms. Aside from pain on active motions such as athletic exercise, the patient felt no great inconvenience. The urine was normal and not over-frequently passed. The patient had been examined and catheterized by a surgeon, but no stone had been felt. On September 21st last, I examined his bladder with the cystoscope, and found a small, dark-colored calculus lying at its base. The mucous membrane of the bladder wall was perfectly healthy in appearance, presenting its normal pinkish-red color and delicately ramifying vessels. I considered that we had to do then with nothing more than a foreign body in the bladder, practically giving rise to no pathological conditions or symptoms, and concluded that, should no complications attend its removal, there should be no symptoms after it. Such proved to be the case. The stone was removed by litholapaxy, and the patient went about as usual the day after the operation. Of course, it should be as little necessary to say that the operation was done antiseptically as that ether was given. The bladder was washed with 1–500 carbolic solution, both before and after the operation.

One thing I particularly wanted to show in connection with this case was the usefulness of storage batteries in cystoscopic examination. Previous to the last month or so whatever I have done with the cystoscope I have done by the aid of the ordinary fluid battery, the one I used having a solution made with trioxide of chromium, practically pure chromic acid. This is a patented compound sold by a firm in Philadelphia and is much like chromic acid in color, but is a fine powder. There is nothing crystalline in its make-up. A large and cumbersome battery is difficult to carry about. I have here a very small storage battery with a current of about eight volts, also a battery of about sixteen volts which is suitable for running an electro-cautery. The larger of these storage batteries I have used only on an experimental cautery which can serve the purpose of the Paquelin and is much less expensive and complicated. With the ordinary current you can get a temperature that will burn organic matter pretty well.

In connection with evacuators there are two points about which I would like to speak. In a recent monograph on "Surgery of the Bladder," (one of sixty-five volumes composing "Deutsche Chirurgie,") is figured, much to my surprise, instead of Bigelow's evacuator, one of Thompson's, which in its make-up is, I think, much less practical than Dr. Bigelow's. Next to that is shown Ultzmann's evacuator, which always seemed to be an unscientific instrument taking into account the laws which have to be considered in constructing an evacuator. Ultzmann's evacuator practically has no trap. The only trap is furnished by the opportunity which the fragments have of dropping down the extension of the evacuator tube into a receiver. In Thompson's a complicated trap is right in front of the drive current of the bulb. There are two points which I would mention as mere oversights in Dr. Bigelow's evacuator which is better than anything excepting my own, which is merely a slight improvement on his, resulting from the great opportunities I had in studying evacuators with him, and from his showing me what he did. I think the two failures in the construction of Dr. Bigelow's evacuator are, first, unnecessary length of tube or rather distance which a fragment must travel in order to be caught; and second, that the trap is wholly unnecessary in any evacuator in which the principle of gravitation is considered. In his oldest evacuator Dr. Bigelow had a long receiver into which the fragments dropped and were pretty successfully retained, and in that old evacuator there was no trap, but later in Bigelow's and Thompson's and Ultzmann's evacuators a great deal of time has been spent in devising the most successful sort of trap for evacuators. I think if it is made as mine with no trap whatever, but with a proper receiver, a prolonged cylinder large enough so that at the moment a fragment is drawn into the bulb and the expansion is complete, by gravitation that fragment drops and no amount of squeezing will bring it out of the receiver again. Now, whichever tube orifice is used, the fact remains that there is an enormous difference between the other evacuators and mine in the distance which the fragments have got to travel, in order to be caught; and there is no comparison between them as regards time required for evacuation. Whereas, in one case, we have metallic fittings with very great weight, here we have an instrument with hard rubber finish and much less weight.

I have noticed in instrument makers both here and abroad a tendency to shorten bladder instruments. There is no reason why two or three unnecessary inches should be introduced into the bladder when a shorter instrument answers all purposes. Of course, for exceptional cases tubes and other instruments of great length must be used.

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

H. F. VICKERY, M.D., SECRETARY.

A STATED Meeting of the Society was held Saturday, October 26th, at 19 Boylston Place. The Vice-President of the Society, DR. E. N. WHITTIER was in the chair.

The following gentlemen were appointed Secretaries of Sections: Anatomy and Physiology, Dr. M. H.

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[1] Read before the Boston Society for Medical Improvement, November 11, 1889.

Richardson; Medical Pathology, Clinical Medicine and Hygiene, Dr. A. N. Blodgett; Obstetrics and Diseases of Women, Dr. G. Haven; Chemistry, Pharmacy and Materia Medica, Dr. F. H. Williams; Ophthalmology, Dr. M. Standish; Psychology, Dr. G. F. Jelly; Microscopy, Dr. E. M. Greene.

By a vote of the Society, the President, Dr. G. W. Gay was authorized to appoint a committee of five to prepare a list of candidates for Officers of the Society.

Dr. C. F. Folsom read a paper on

TREATMENT IN TYPHOID FEVER.[1]

Dr. A. L. Mason: I would like to say with regard to Dr. Folsom's paper, that the mortality-rate in typhoid fever seems to have declined, as he states, in Boston. I am familiar more especially with the statistics of the City Hospital. Dr. Stedman, in the third volume of City Hospital Reports, stated that in 1,200 cases the mortality was in the neighborhood of seventeen per cent., including those moribund at entrance. I would briefly call attention to the cases that have been admitted since July in the two other hospital services, in all 183 additional cases, making about 250 or 260 cases up to the middle of this month. Of these 183 cases 140 have been discharged well. There have been twelve relapses; eight cases of peripheral neuritis; eight hæmorrhages from the bowels, of which two were fatal; three moribund, that is, patients who died within forty-eight hours after admission; two who suffered from phlebitis; one from embolism, with gangrene of the leg. The number of deaths in those 183 cases was fifteen, or about eight per cent. There are, however, forty patients still remaining, most of whom are now convalescing. The number of cases in the hospital the 1st of October was one hundred or a little over: now it is only about sixty; therefore the most active typhoid season may be regarded as having passed. The number of discharges is greater than the number of admissions, and of the forty cases remaining the mortality may be expected to be small. I should think that ten per cent. would cover the mortality for the year. That is certainly an improvement over sixteen per cent. or seventeen per cent. in the earlier series of cases. It is to be attributed in part, no doubt, to the antipyretic treatment, — cold applications, cold sponging, and I think also, to some extent, to the reasonable use of antipyretic drugs.

The reaction against these drugs (antipyrine, antifebrine, etc.), has been so great that now one uses them with considerable caution. Three years ago when antipyrine was first in vogue I presented a series of cases to one of the societies, one hundred or more, in which this drug was freely used. There was a reasonable mortality, about ten per cent.; six collapses occurred, some of which were nearly fatal, therefore I seldom uses antipyrine in the later stages of typhoid. The same is true to a certain extent of phenacetine, as Dr. Folsom states, but I think that one need not be so cautious in the use of moderate doses of phenacetine as with the other antipyretics. I have used it more freely than Dr. Folsom, and have seen no decided ill effects. On the contrary, in many cases of great restlessness, high fever, delirium, semi-coma, I think that this drug has been of considerable advantage combined with other measures. It is hard to say at present what the future of these drugs may be.

The cold bath treatment does not seem to have become popular, however rational it may be, and however excellent the statistics which are reported. The difficulties of administering cold baths systematically, according to the method of Brand, are very great. In his earlier books he mentions 170 cases without a death. In our hospitals, in 170 cases we should have one per cent. or two per cent. of moribunds to begin with. Different physicians have reported very different results from cold baths, and a mortality varying from sixteen per cent. to none at all under the same methods, so that it is very difficult from statistics to form a perfectly satisfactory opinion with regard either to bathing or any other mode of treatment. The fact, however, seems to be that all the measures of treatment combined have helped to lower the mortality from typhoid, and it is to be hoped that the processes will be still further improved.

Dr. Edes's results with cold bathing at the City Hospital were interesting, but not on a large scale. The cases were bad, and the mortality was not very much diminished.

The tendency to hæmorrhages which the cold bath treatment is said to increase may perhaps be a contraindication. Many of the Germans — Wunderlich, Schultze and others — are of the opinion that there are about twice as many cases of hæmorrhages with the cold baths as without that treatment.

Dr. G. H. Lyman: I don't know that I should be quite ready to accept Dr. Folsom's views as to stimulation, and yet I may. With regard to the diet I am inclined to think we do need a decided change from the diet we have had so many years. With regard to antipyretics I have no doubt that phenacetine is a better agent than antipyrine, but we must not forget that antipyrine when it first came into use was given in pretty large doses, but towards the last of its being used I think there was a great improvement in the method of using it; and I should not be at all afraid to use it now quite as freely as phenacetine. Originally, when the temperature was 103° or 104° we thought we must bring it down to normal; which was undoubtedly a great mistake. When I began to use smaller doses, oftener repeated, bringing the temperature to 101° or 102°, I had no trouble, and I consider it, used in that way, an admirable agent. I have had more experience with it than with phenacetine. The grade of the disease, the general atmospheric conditions vary in different years so that we must have a series of years, the patients treated in precisely the same way, before we can judge of the value of remedies.

Dr. S. L. Abbot: One thing has struck me in Dr. Folsom's general discussion as to the treatment of typhoid fever, and in other reports of the results as based upon hospital statistics, that not much emphasis has been laid upon the prevailing type of the fever in any special season as influencing the methods and the final results of treatment. If I observed correctly, in the second year of Dr. Folsom's cases the mortality was very low indeed. I did not gather whether he associated that fact with the special treatment employed or with some other causes. I should like to ask him whether the cases were milder in type than in other years or whether he referred that result to the treatment employed.

During the last year of my service at the Massachusetts General Hospital, to five of the typhoid fever patients in my wards no medicine was given, and all recovered. Constipation, when it occurred, was relieved by simple injections of glycerine. The cases were mild.

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[1] See page 573 of the Journal.

DR. FOLSOM: The mortality was 3.5% last year and this year 12.4%. I think this is entirely due to the different degrees of severity in the disease.

DR. G. H. LYMAN: I would like to emphasize what Dr. Abbot has alluded to, that there are a very large number of cases of typhoid fever that need no medicine at all. Many cases in my service at the hospital go through without any treatment other than rest and careful alimentation. That brings in another and very strong element into all our statistics.

DR. F. C. SHATTUCK: Dr. Folsom's paper is valuable in many respects; and to single out one respect — the very careful observation and very careful study of the cases which it shows.

With regard to food, Dr. Folsom seems to occupy more the position of the German physicians. The Germans, I think, allow a much larger dietary in typhoid than is customary with us and with the English. They give throughout the course of the disease raw eggs not infrequently. They are not as fond of exclusive milk diet as we are. I have myself used a good deal of beef juice as being extremely nutritious, and not bulky; but, as a rule, I confine myself, during the run of the fever, to milk, when it is well borne; and my analysis of 129 cases, under my care in the hospital during the last three years, shows a mortality of 8.3 per cent.

With regard to alcohol, I think Dr. Folsom's caution is a very valuable one. I think there is no question that, on the whole, too much alcohol is given in typhoid fever, and I find that my own tendency is to give less and less. The tendency of the house-officers is to give stimulants. They have the fear of cardiac failure constantly before their minds, and I think that they are more apt to give stimulants than the visiting physicians are.

I was a little struck with what Dr. Ellery Stedman said to me the other day in conversation. He said when he was on duty at the City Hospital, he drew a line along the 120 line of the pulse, and his orders were that no stimulants should be given without his express orders until the pulse reached that line; he had had no occasion to regret the stand which he had taken.

Both Dr. Folsom and Dr. Mason alluded to the danger of hæmorrhage in connection with cold bathing. If these German statistics are correct, if they bring the mortality down to five per cent. or less, and they deal with very large figures, it does not seem to me that it makes much difference if the cold-bath treatment does tend to increase hæmorrhage. It seems to me that the central fact is that the mortality is very low. I agree entirely with what Dr. Mason said as to the very great difficulty in the introduction of cold bathing in this country. One of the difficulties, and not the least, is the system of rotation in service. If we introduce cold bathing into one of our hospitals, we must increase our staff of attendants very materially, which would be, at the high rate of wages in this country, a great expense. Now, if one member of the staff introduces it, and his successor does not carry it out, a serious question is brought into hospital administration.

Dr. Folsom has followed the spleen so very carefully in his cases that I should like to ask him if his experience bears out the opinion expressed by many of the Germans, that a failure of the spleen to subside at or about the period of defervescence indicates a danger of relapse; and also if he has any explanation to give for his singularly fortunate freedom from relapse. Relapse was frequent in the three years in which I analyzed my personal cases. It occurred in sixteen per cent. of the cases.[2] I should be very glad to know how to prevent that lengthened period of the disease.

DR. FOLSOM: There happened to be no relapses during my service this year, and I have not had an opportunity to make such observations with reference to the spleen. This freedom from relapse is, perhaps, largely due to the same cause that made my mortality 3.51 per cent. in one year and 12.35 in another, that is the type of cases. There have been relapses in some of the cases reported since I left the hospital. Relapses to a degree are a question of definition and of terms.

With regard to the regularity or irregularity of the subsidence of the spleen in the latter week of the fever and during convalescence, I think there is no sort of rule with regard to it. Quite a number of my patients sat up while the spleen was quite large, and in quite a number the spleen had returned to the normal size before I allowed them to sit up. I have not tabulated cases or made notes enough to make them valuable on that point.

DR. A. POST reported

FOUR CASES OF ANEURISM, OPERATED ON BY THE OLD METHOD.[3]

DR. D. W. CHEEVER: I have very little to say except to express my gratification. I recall two cases in which this method was used in former years, once by Dr. Thorndike and once by myself. Both cases terminated in recovery; but in both cases there was suppuration in the sac after the contents were turned out and the vessels were tied. It is an extremely rare and fortunate coincidence to have so many cases, it probably will not happen again for a long series of years. It was on account of the dread of suppuration and the giving away of the artery that Mr. Hunter gave up the old method of Antyllus and tied the vessel at a great distance from the sac. My case had been treated for abscess, and an incision had been made into it before the mistake was revealed; the child came very near dying before the hæmorrhage could be arrested; but she finally made a good recovery, saving the limb, and losing only two toes by sloughing.

The Society then adjourned at 9.45 P. M.

Subsequently to the meeting, the following were chosen members of the committee on nominations: Drs. F. W. Draper, F. Minot, F. I. Knight, T. M. Rotch, M. Prince.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

BY F. B. HARRINGTON, M.D., SECRETARY.

REGULAR Meeting, Monday, November 11, 1889, the President, DR. W. L. RICHARDSON, in the chair.

DR. MORTON PRINCE showed a patient with a second attack of

TRAUMATIC NEUROSIS,

having recovered from the first.

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[2] And has this year been frequent enough at the Massachusetts Hospital.

[3] See page 576 of the Journal.

I have here a case which I consider of exceeding interest from many points-of-view. It is a case of functional paralysis following injury or so-called traumatic neurosis. I saw this man first about two weeks ago when he gave me the following history: About five weeks previous to that time, while standing on the steps of a horse-car which was going round a curve with considerable speed, he was thrown off striking on his back and shoulder. He was stunned and remained in that condition about five minutes. He was then taken to the Massachusetts General Hospital where his injuries were attended to. His knee was somewhat badly injured and possibly his arm. His leg was put in splints and bandaged. He was sent to his home where he was confined to his room about ten days. He then got up and went about, but was in a poor condition. Two days before I saw him he tried to go to work. After working a half day he was obliged to give up, and appeared at the City Hospital. At that time he complained of (and his symptoms now are about the same) paralysis, pain in the small of the back and right knee and weakness of his arm; also of decided numbness and loss of sensation in the left leg as high as the lower third of the thigh and in less degree over most of the body. On careful examination I found this anæsthesia was entirely subjective, that there was no real objective loss of sensation. There was, however, a very marked paralysis or paresis of both arms, that is, the grasp of his hands was almost nil — as measured by the dynamometer which is an old one — about twenty with each hand. I sent him to the hospital where he has been under Dr. G. B. Shattuck's care. He has been very carefully watched as I thought there might be some question of malingering. Careful observation, however, fails to show this.

The cardinal symptoms of this case are paralysis of his hands and increase of the left knee-jerk, the right knee-jerk remaining normal. The grasp in the right hand has improved, and is now seventy by the dynamometer. The left knee-jerk is still increased. Particularly noticeable in this case were vaso-motor changes in the hands. They have had a purplish cyanotic hue.

There is also some question as to whether there may be slight wasting of the smaller muscles of the right hand. It is not marked, but it is suspicious that there is a slight difference in the appearance of the two hands. He is left-handed, and the difference is probably either physiological or an old affair. This case is interesting not only from the point-of-view of diagnosis, but in respect to prognosis. To my mind this is a case of functional disease and I believe the prognosis is good. This view is strengthened by the previous history. It appears that six years ago he had quite a severe injury. He was kicked in the mouth by a horse and knocked unconscious, and following that injury at that time exactly the same train of symptoms developed as follows this second injury. He gradually improved; all the symptoms disappeared; and he was able to resume his work. Both his injuries had a largely psychical side to them.

He walks with a limp and uneven gait which perhaps might be mistaken for ataxia, but this is due to weakness of the right knee. He complains of pains about it and of pains about his back. He was struck on the right side.

You will note the resemblance between this case and the one I described at the last meeting of the Medical Observation Society. In each case there are present an increase of the left knee-jerk, paralysis and pain. The paralysis in the other case, however, was more general, while this is more localized, although I think it was here more extensive to start with. In the former case it was also thought to be organic disease and not functional.

Dr. Geo. B. Shattuck: I have nothing special to add to what Dr. Prince has said about the case. It was somewhat complicated by the fact that he had been in the hospital after his previous accident and was in the same service that he is in now. He was examined pretty carefully then and the various symptoms and signs were tested and recorded a number of times and he had an opportunity to learn to a certain extent what was expected from this course of examination; so that when he came in again it made it a little more suspicious with reference to the question of malingering. He knew more about reflexes and knee-jerks than the ordinary patient would know or learn in a short time; but he has been under observation a good while, and I should think we might fairly rule that out. On the other hand he has improved to such a degree that one would be less inclined to consider the symptoms as due to any serious central lesion. I should think the chances are at present that the diagnosis which Dr. Prince favors would turn out to be the correct one. I might add that when he came in his general constitutional condition was somewhat below par. He has had alcoholic habits and that has had to be taken into consideration, but in all the examinations that have made been of him the symptoms have been constantly the same. There has always been this difference in the knee-jerks, and there is some exaggeration of the reflexes of the arms and the vaso-motor paresis has always been very marked, much more so than now, and those are things one cannot simulate.

Dr. C. F. Folsom: I saw this case before there was any marked improvement and I was in doubt whether it was functional or a diffuse myelitis. I was rather inclined to think it was diffuse myelitis, but the marked improvement in the symptoms would rather indicate that it is a functional trouble. I suppose we shall have to wait a little while before we can be certain.

Dr. J. C. White reported cases of

SOME UNUSUAL FORMS OF DERMATITIS VENENATA.[1]

Dr. F. B. Harrington: Within two weeks I was called to see a patient whom I found covered with rash from head to foot. I at first supposed it was measles, but there were none of the other symptoms of measles. I noticed that the odor of the breath was very bad indeed. I was not able to get any statement of any recent application of anything which could have caused the eruption until after a good deal of questioning when I found that four or five days previously he had rubbed himself from head to foot with unguentum hydrargyri. Somebody had told him to use it for pediculi. The eruption had not appeared for this length of time. He had a very marked stomatitis. The itching was very intense and the suffering great. Under appropriate treatment the symptoms quickly disappeared.

Dr. O. K. Newell reported a

CASE OF STONE IN THE BLADDER.[2]

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[1] See page 583 of the Journal.

[2] See page 584 of the Journal.

Dr. C. B. Porter: Dr. Newell suggests something very valuable to the surgeon — the ability to carry about such a battery. The trouble has been before that a carriage has been required. I would like to ask whether the small battery is strong enough for the Paquelin, and also whether Dr. Newell has had any experience with scorching the bladder.

Dr. Newell: The small battery will run the light about twelve hours, and twenty to twenty-five minutes would be the extreme limit of an examination. I think it would not do for Paquelin's cautery.

Once in a case of a very large tumor of the bladder, and a number looking at it, the light suddenly went out, and I noticed charred tissue on the end of the instrument. I thought there would be pretty serious symptoms, but there were none. When I notice a change in the light I at once open the circuit, and thus avoid trouble.

Dr. F. S. Watson: To those who are in the habit of using a cystoscope much, as I am, such a battery as Dr. Newell presented to-night is a perfect blessing. The slopping about of the chromic acid solution over carpets, hands, etc., has been a drawback in the use of instruments before. This battery solves the problem in the neatest and most compact form I can imagine.

I would like to say one or two things in regard to Dr. Newell's remarks on evacuators, modifying the criticisms I made when he first showed the instruments last year. It struck me at that time that there were some very strong things in favor of his evacuator as compared with that of Dr. Bigelow. I was convinced that in the average case of stone, the shortening of the urethra, by folding the penis upon itself, and the shortening of the evacuating tubes which this allows, would be of advantage. Another thing he did not bring out, ought to be mentioned I think, and that is his stop-cock, which I think is much more neat and easily managed than the Bigelow evacuator where you have to stop and take the hands off.

What he says about there being no need of a trap to the evacuating bulb, is undoubtedly true, and has been demonstrated already in the evacuator of Otis, which I think is an admirable one.

I prefer the original point of Dr. Bigelow's evacuating tubes to the sharp ones on Dr. Newell's instruments, which I do not consider so safe or so easily passed into the bladder. In certain cases; namely, those in which there is prostatic hypertrophy, Dr. Newell's tubes are, I believe, too short, so that one should always have one or two longer ones in one's set of evacuating instruments. In ordinary cases without hypertrophied prostate the short tube will do.

Dr. Newell: I think there is a difficulty that will be in all of the instruments until some one here gets a better cement. The great trouble in this country in having evacuators made is that there is not a manufacturer who can furnish a decent specimen of rubber.

One point I forget to mention is that these tubes with my orifice work beautifully in children. In one case I found the introduction of this tube difficult, and it seemed as though in that case I would have liked Dr. Bigelow's point better, but in children I think it a great advantage to have a short canal. There we have no prostate gland, perfectly smooth bladder cavity which distends nicely, and if properly distended offers no chance for aspiration of the bladder-wall.

In connection with storage batteries our unfortunate tariff makes the price of this battery forty or fifty dollars. The duty is over fifty per cent. Also with my endoscopic instruments, ninety dollars duty was demanded.

Dr. J. C. Warren: One thing suggested by this discussion is the principle on which the different operations for the removal of stone were founded. In the first place the difficulty with the old operation for removal of stone (lithrotrity) was that inflammation was caused, a cystitis which might prove fatal, by the instrumentation. That was the theory in Civiale's time. When Dr. Bigelow invented his litholapaxy, he supposed the danger was in leaving fragments of stone in the bladder. It seems to me the more modern view would be that the danger was in the sepsis of the bladder. If perfect asepsis can be preserved in certain cases — cases like the one Dr. Newell described, where there was a clean stone in a clean bladder — it seems to me as if the method which Sir Henry Thompson proposed, carried to its extreme point might possibly be carried out with impunity, that is, frequent washings-out of a little at a time without ether, provided perfect asepsis be preserved. The patients could go about as before without the disadvantages of taking ether.

In other cases of old and feeble individuals who have perfectly aseptic genito-urinary tracts, a much less formidable operation would be one which would enable you to do less at a time provided you could keep up asepsis in that part of the body. I have an idea that when we are a little further advanced there will be a swing of the pendulum in that direction, a return to multiple operations in certain cases.

Dr. J. J. Putnam showed

A NEW APPARATUS FOR DIRECT TRANSFUSION.

Dr. Putnam alluded to a case in which direct transfusion had been twice tried. The patient improved after each operation, but, as frequently happens in these cases, several very objectionable symptoms showed themselves. The patient had ecchymoses in the skin and hæmaturia, and after one of the operations, a single sharp chill with rise of temperature.

I know very well that the operation of direct transfusion is now not considered as nearly so important as it formerly was. It is found that transfusion of salt solution, certainly where the loss of blood has been due to hæmorrhage, does just as much good by raising the blood tension. Nevertheless, the attempt is constantly being renewed, to introduce blood in various ways into the system for its nutrient value. One reason, perhaps, why the operation is not more successful is because of the faultiness of the method employed.

The apparatus ordinarily used is Aveling's, and the following are some of the objections to it: (1) During the whole time the blood must be at rest in one or the other half of the tube, namely, in the half where the stop-cock is closed, thus affording abundant opportunity for coagulation to take place in the opening of the canula and neighborhood of the bulb. (2) The apparatus is used over and over again, and every one knows how difficult it is to keep any complicated apparatus surgically clean; and it is not improbable that, from time to time, septic material may be thrown into the vein of the patient, and this may, in part, account for the chills and rise in temperature.

These dangers could be in great measure obviated by the apparatus which Dr. Putnam then showed and explained.

This consisted in two parallel tubes of rubber, connected at each end to a Y-shaped canula, and provided with suitable clasps for shutting off the current.

One of these tubes was intended to convey the blood, while the other formed a reservoir (which could be refilled, if necessary, through a T-shaped tube) for a warm solution of salt or phosphate of soda.

After inserting and attaching the canulas, in the usual manner, the current of blood can be allowed to flow continuously, and can be encouraged by a simple roller, or by the finger.

From moment to moment, the tube containing the salt solution can be pressed with the finger, and the blood passing through the canulas kept liquid.

Both the blood current and the salt solution could be kept warm by hot cloths, frequently renewed, laid over the tubes.

Further, each canula, besides its principal opening, had near the point a counter opening, allowing of a passage of blood through the vein in the normal manner, and thus preventing stasis.

Dr. F. B. Harrington: The Aveling apparatus is quite unsatisfactory. I have used it twice. I think this apparatus of Dr. Putnam will prove to be superior to it.

Dr. O. K. Newell: I happen to have translated Professor Mikulicz's book on "The Relative Value of the Infusion of Salt Solution and the Transfusion of Blood," and I must, therefore, say that in the light of recent investigation, I think the transfusion of blood unjustifiable. It is impossible, as has been demonstrated by experiments, to introduce blood so that it will be kept in a state corresponding at all nearly to that in which it leaves the artery or vein, in whatever manner the transfusion is done.

Dr. F. B. Harrington: In such a case as the one Dr. Putnam speaks of [pernicious anæmia] the transfusion of salt would be of no value. I have used the intra-venous injection of salt solution repeatedly in cases of severe hæmorrhage, and regard it of great value. To have used it in this case would have been folly. That there are dangers in the transfusion of blood is unquestioned. I very much doubt if it can be shown that transfused blood is entirely without benefit. Clinical evidence, as in this case, would seem to prove the contrary. Theoretically it would seem to be possible to transfer the blood from one person to another with advantage to the recipient. We are able to transfer other tissues, and I believe that we should not give up entirely the transfusion of blood.

Dr. Newell: I am absolutely sure that no apparatus, as complicated as this very beautifully working one of Dr. Putnam's, could possibly do it. The main point is that all physiological investigations show that you can't put the blood of one individual into another without its becoming almost entirely disorganized. It has been supposed that the only value of transfusion has been in increasing blood volume, and that is why the infusion of salt solution has done all the good that transfusion ever did in its whole history. Physiologists tell us that the blood of different individuals differs, and that when transfused, it is disorganized *in toto;* so that the object you are trying to accomplish is out of the question. Because bone-grafts and skin-grafts "take," I think we have no reason to think we can transfuse blood successfully, since every experiment is against it.

Dr. Putnam: I do not wish to be understood as advocating direct transfusion of blood. I know transfusion of salt is considered just as good for restoring arterial tension, but it is not long since, in Germany, and probably with the full knowledge of all the experiments, Ziemssen advocated the subcutaneous injection of defibrinated blood, and, unless I am mistaken, the matter has been taken up clinically recently.

It seems as if there were cases where it could be done as a matter of last resort; and if tried, it should be tried under as favorable circumstances as possible.

Dr. Newell: With regard to the subcutaneous injection of blood, you have a wholly different matter. That would be merely the subcutaneous injection of an albuminous fluid, which could be absorbed, as all subcutaneous injections are in the areolar tissues by the capillaries, without going directly into the circulating blood current.

In regard to the salt solution, there you inject a solution which is not decomposed, and can't in any way injuriously affect the blood. It is an aqueous solution with no injurious properties. The objection that all authorities make to the transfusion of blood is that the blood transfused is invariably decomposed, disorganized, and you thus introduce into the circulation injurious and toxic elements.

Dr. Putnam: I think there are two things to be said in reply to Dr. Newell's argument, of which I acknowledge the importance. In the first place, I feel very certain that Ziemssen asserted that the number of blood globules was increased after the injections, so that he believed that the blood globules entered the circulation in the living state. In the second place, with regard to introducing toxic substances, I think it may be, and undoubtedly is, true that that occurs, and although it did occur in this case, yet I feel perfectly certain from watching the patient, that that did not contribute materially to the patient's death, which was imminent, and occurred after a short time. The immediate effect of the operation was to revive the patient; and although after one of the operations a chill occurred, still it was only once and did not seem to have any permanently unfavorable effect.

Dr. J. C. Warren: There is a well-known experiment, that if you bleed a rabbit and allow the blood to coagulate, and press out the clots so as to get all the fluid from it possible, and reinject the fluid into that animal, he will die, after a very short time, with symptoms of acute toxic poisoning, and the agent supposed to bring that about is the fibrin ferment liberated from the corpuscles during the process of coagulation, and the liquid reinjected goes to work and liberates all the other fibrin ferment left in the circulation, and decomposes it to the extent that coagulation occurs and embolism of the pulmonary artery and various other vessels of the body. I don't know whether that would hold good in a case of transfusion where the human blood had been allowed to coagulate. Since reading that experiment, it has been a matter of curiosity to know whether that method by which blood was defibrinated and then injected into the circulation, was followed by toxic symptoms, by fibrin ferment poisoning, if you choose to use that term. I think that that experiment would militate very strongly against blood transfusion, certainly where it was defibrinated.

Dr. Harrington: I think we have clinical cases of undoubted benefit; and there is no proof that the corpuscles do not live a certain time and do a certain amount of good. With improved methods we may get greater benefit.

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ANGINA PECTORIS AND THE TRUE CARDIAC NEURALGIAS.

There is a form of cardiac pain which is always of bad prognosis, because indicative of organic and generally incurable lesion. It was first correctly described by Rougnon, and nearly simultaneously by Heberden in 1768; it was afterwards called Heberden's disease, though Heberden gave it the name of *angina pectoris*, the word *angina* being indicative of the peculiar anguish accompanying the attack. Seneca, who appears to have been a sufferer from angina pectoris, speaks in one of his letters of the suddenness of its invasion, which he compares to the impetuousness of a tempest (*brevis impetus, procellæ similis*); and he adds that the predominant sensation is one of anguish as of impending death.

This kind of cardiodynia has its seat in the terminal cardiac filaments of the pneumogastric nerve, and is due to ischæmia of the heart muscle. The old theory was that angina pectoris is a primary or symptomatic neurosis of the cardiac plexus. This is denied by the best recent authorities, who compare the pain to that attending gangrene from occlusion of an artery.

"Let us suppose," says Germain Sée,[1] "that the myocardium receives less than its normal quantity of blood; the terminal extremities of the vagus will receive less also. Now oligæmia of a sensory nerve manifests itself by pain. This oligæmia also accounts for the pecular distress, the *angor*."

Huchard, in a recent work on arterio-sclerosis and the arterial cardiopathies,[2] which is the most complete by far that has yet appeared, sums up the numerous anatomical and other theories, and gives weighty reasons for the view, which he holds in common with Balfour. Kreysig, Tiedemann, Potain, Parry, Liegois, Sée and others, that true angina pectoris is always dependent on lesions (sclerosis, thrombosis, atheroma, sometimes, however, spasm) of the coronary arteries, with ischæmia of the myocardium. The ordinary lesion is arterio-sclerosis, which is sometimes of toxic origin (diathetic, alcoholic, nicotinic), sometimes a senile degeneration.

There is an angina pectoris which ends almost always in sudden death; there are other kinds of cardiodynia, quite as distressing, which almost invariably terminate in recovery. The latter are functional and nervous. Huchard ranges the latter under the head of false angina pectoris (pseudo angina); they constitute the true neuralgiæ of the heart.

Huchard divides the peculiarly neuralgic forms into three classes: the neurotic, the reflex and the toxic. He formerly added a fourth, the diathetic; but, he is now convinced that this, as a separate class, has no *raison d'être*.

(1) The neurotic is that painful condition of the cardiac innervation which has its origin in the state of the nervous system accompanying hysteria, neurasthenia, hypochondria, exophthalmic goitre, spinal irritation, neuro-arthritism, and (according to some authors) epilepsy.

(2) The reflex form, of peripheral or visceral origin, takes its point of departure in some distant irritation, as of the stomach, uterus, etc., which is reflected on the cardiac plexus. Huchard, under this head, gives instances of reflex pseudo angina accompanying intercostal neuralgia, painful peripheral excitation of the nerves of the extremities, neuromata, and neuralgia of the left arm.

(3) The toxic form, is perhaps, oftener caused by tobacco than by any other agent, and this (the nicotinic) is given as the typical toxic species, though cases have been referred to tea, coffee and alcohol. There is a functional cardiodynia from tobacco-smoking, relatively benign, resulting from spasm of the coronary arteries; this Huchard calls *spasmo-nicotinic angina*. There is another kind, also due to abuse of tobacco, which is dependent on arterio-sclerosis; he calls it *sclero-nicotinic angina*.

The following table from Huchard, gives the principal distinctive features of the true and spurious anginæ:

True, Arterial Angina Pectoris.

Anatomical Cause. — Aortitis, with obliteration of the coronary arteries. Sclerosis, with constriction or obliteration of the coronaries. An arterial affection.

Symptoms. — Pains almost always paroxysmal, not permanent, provoked by walking, emotional excitement, effort. Rarely periodical and nocturnal attacks. Cardiac pain isolated from other neurotic symptoms Agonizing pain, with sensation of compression as of a vise. Pains of short duration, ceasing with repose. Sub-sternal seat of the pain, generally over the aorta.

Attitude of the Patient. — Silence, arrest of all movements, the pain ceasing with absolute rest No painful points, but the latter may be present when true angina is complicated with cardiac and phrenic neuritis by propagation of the peri-arteritis to the plexuses of nerves in the vicinity. Often sub-sternal anguish without pain.

Prognosis. — True angina pectoris is almost always fatal.

Treatment. — Arterial medication. Revulsives of no account.

False, Neuralgic Angina

Anatomical Causes — Aortitis, with neuritis of the cardiac plexus. Hyperæmia of the cardiac plexus. Neuralgia of the cardiac plexus. A neuralgic or neuritic affection. Often (as in hysteria) a vaso-motor neurosis.

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[1] G. Sée: Maladies du Cœur, 2d ed., 1883, p. 30.

[2] Huchard: Maladies du Cœur et des Vaisseaux, etc. Paris, 1889.

Symptoms. — Pains less frankly paroxysmal, often periodical, coming on at the same hour (hysterical, neurasthenic, pseudo angina); not provoked by effort, but often caused by cold. Attacks frequently periodical, recurring at fixed hours, and nocturnal. Cardiac pain associated with other neurotic symptoms. Pain less agonizing, with sensation of distention of the heart. Pains of long duration, not ceasing by repose. Seat of the pain often frankly cardiac.

Attitude of the Patient. — Incessant agitation. Continuance of walking; rest brings no diminution of the pain. Existence of points painful to pressure, especially along the tract of the phrenic nerves (neuritis of the cardiac plexus and of the diaphragmatic nerve). Anguish less pronounced, always associated with the pain. Pseudo angina is never fatal, except in cases where the cardiac neuritis is associated with coronary sclerosis.

Treatment. — Anti-neuralgic remedies. Revulsives often beneficial.

Reflex, Neuralgic, Pseudo Angina Pectoris.

A nervous affection.

Symptoms. — Attacks spontaneous at times, but often provoked by movements of the left arm, and by pressure over the painful nerves. Depends on some other peripheral neuralgia, on gastric or other visceral disorder. Is observed at all ages. Attacks last long; are not provoked by effort. The primary neuralgic, or the visceral affection, makes itself conspicuous. Pain generally precordial, not sub-sternal. In gastric pseudo angina, signs of dilatation of the stomach often accompanying. Prognosis benign, never terminates in death.

Treatment. — Revulsives, calmatives, anti-neuralgic remedies, anti-dyspeptic remedies.

Toxic, Pseudo Angina, from Tobacco. (Generally by Spasm of the Coronaries.)

Symptoms. — Attacks of cardiac angor associated with other phenomena of a toxic kind; vertigo, gastric and respiratory troubles, etc. Accompanying heart-troubles; palpitations, intermittences, arythmia, lepothymia, etc. Attacks last long; are generally spontaneous, rarely provoked.

Prognosis. — Rapid recovery, on suppression of the toxic cause.

Huchard gives an exemplification of the difficulty under which the clinical observer must sometimes labor in diagnosticating the affection. "In gout he may have thoracic angor under three conditions: (*a*) it is either a true angina, arising from an arterial lesion (arteriosclerosis, atheroma of the coronary arteries, lesions of the aorta, etc.) to which gouty persons are always predisposed; or (*b*) gastric troubles, frequent in gouty patients, may provoke attacks of false angina pectoris which may terminate in recovery; or (*c*) the angina pectoris may be a neuralgic attack, such as gouty neurasthenic invalids are prone to."

In true angina pectoris, the leading indication is to remedy the cardaic ischæmia which causes the pain. This indication can be only partially met by the so-called vaso-motor dilators, — nitrite of amyl (two or three drops to be inhaled from the open palm); nitroglycerine (frequent drop doses of the centesimal dilution); and iodide of sodium, which, according to Huchard, should be given in ten-grain doses three or four times a day for a long time. Hypodermic morphia seems to favor the capillary circulation, as well as allay nervous irritation, and will be often demanded in severe paroxysms. In the pseudo forms, the general anti-neuralgic and revulsive treatment will be called for, due attention being given to the cause, whether peripheral, visceral, or toxic.

VITAL AND MEDICAL STATISTICS.

Dr. Billings chose as his subject for the Cartwright Lectures this year a timely and most important discussion, in view of the preparations for the enumerations for the next United States census, on Vital and Medical Statistics, including their relations to each other, and to scientific and practical medicine and sanitation. While admitting their imperfections, he emphasizes the essential point, that those least familiar with them distrust them most, but that, as familiarity with their use and methods reveals the fact that in dealing with large masses of figures, many errors tend to neutralize each other, their real value is recognized. Too much, moreover, is expected of statistics, whereas they furnish to those expert in handling them, chiefly a basis for estimating probabilities, rather than scientific exactness.

The United States, being the great mixing ground for the different human races, offers unique opportunities for the study of the science of heredity, but the mixture is rapidly becoming very intricate with its influence in preserving the best types or debasing the race, as the case may be. To determine these and less complex questions of the influence of locality, etc., on the public health, the willing co-operation of physicians is required, and we commend to them a careful perusal of Dr. Billings's suggestions in this respect.

As regards local registration of mortality returns, a fairly satisfactory system obtains in our country only in Massachusetts, New Jersey, a greater part of Connecticut and New York, a large part of Alabama and Minnesota, and most of the large cities. For the rest of the United States, we depend at present upon the decennial census, and hence the importance of making it as full and accurate as possible.

In the next census, more than the usual attention will be paid to nice sociological points and to the elimination of sources of error, so that we may expect results correspondingly interesting and useful in preventive medicine.

Dr. Billings lays great stress not only upon the collecting and record of vital statistics, but also upon another fully as important point to which his attention is constantly directed in the great medical library in Washington, namely, a sufficient knowledge of the scope of medical statistics to enable one to use them scientifically and not draw too hasty generalizations. "Making figures lie," is equivalent to not understanding them, in the vast majority of cases, and unfortunately a great deal of that sort of interpretation is indulged in. Too much precise statement is made where we can obtain only a sufficient degree of probability to guide our action, and by overlooking the differences in conditions which seem analogous, erroneous conclusions are often drawn as regards such vital questions as the influence exerted upon health and life by race-characteristics, residence in a given locality, by marriage, occupation, social standing, etc.

When we come to considering how much of the death-rate is necessary and unavoidable; how much is due to causes which may be modified or done away with; how far it is influenced by medical treatment in vogue at various times, a study of the science of medical statistics should precede an attempt to apply them; and these lectures of Dr. Billings will furnish a long-needed means to the medical profession of getting all the essentials of the subject in a compact form.

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THE NEW YORK ACADEMY OF MEDICINE AND THE HEALTH DEPARTMENT.

At the meeting of the New York Academy of Medicine, held December 5th, Health Commissioner Joseph D. Bryant read a report on the Health Department and the Conference Committee of the New York Academy of Medicine. This committee was appointed some two years ago at the suggestion of Dr. A. Jacobi, then President of the Academy, in furtherance of the idea that such co-operation on the part of the Academy would be for the mutual advantage of the Board of Health, the Medical profession of the city, and the community at large.

Dr. Bryant presented many facts and figures to show that much good had resulted from this collaboration and stated that in contagious diseases the benefits of the joint work were especially noticeable. In the course of his paper he called attention to the necessity for greater facilities for the management of contagious diseases among well-to-do patients and strangers visiting the city, and spoke particularly of the importance which this matter might assume if the World's Fair of 1892 was held in New York.

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MEDICAL NOTES.

— Ground has just been broken for the new Home for Incurables on the grounds of the Episcopal Hospital in Philadelphia. The building will cost $175,000 which sum has been given by Mr. C. C. Harrison, as a memorial to his father. There is to be an endowment fund of $400,000 toward which Mr. Harrison has contributed an additional $100,000.

— The long standing differences between the faculty of the Montreal School of Medicine and the Medical Faculty of Laval University of the same city, have been referred to the Pope as arbitrator, much to the annoyance, it is stated, of his Holiness, who thinks the Canadian doctors a quarrelsome lot who ought not to trouble him with their controversies.

— During the great typhoid fever epidemic at Plymouth, Pa., in the spring of 1888, which carried off hundreds of people, the Plymouth Water Company were held responsible for the outbreak of the fever, and suits for damages were instituted against the organization by the relatives of the victims. A test case was called for trial for the first time. December 10th. Mr. Buckingham, who lost two children, is the plaintiff. He claims $10,000 damages. The company has an able array of counsel.

— The only dental and pharmaceutical college in the United States devoted entirely to the colored people was dedicated at Nashville, Tenn., November 30th. This building is the new dental and pharmaceutical addition to the medical department of the Central Tennessee College. It is the second of the medical department buildings and the tenth of the college.

— Among a series of begging letters which Miss Eastlake publishes in the *New York Sunday World*, occurs the following:

> "Dear Miss Eastlake: — Having read of your great charity in the *World*, I turn to you for help. I am twenty-nine years old, graduate of a training-school for nurses, and have the care of an invalid mother and little sister. I have no employment, no means, and neither fire nor provisions for the winter. If I could fee the doctors, they would secure me appointments among their wealthy patrons. Unfortunately I am poor. If you can help me in any way, I shall be grateful to you all my life."

— Some of the teachers of practical anatomy in Philadelphia report a stringency in the supply of "material," which they ascribe to the high license laws under which it is not so easy for bummers or tramps to drink themselves to death. Hence the number of those found dead in the inclement season diminishes, and the medical schools suffer.

— Dr. Lewes Meisberger, of Buffalo, a successful physician, died in that city on Monday last, and in his will left $500 for a funeral feast for his friends, which took place Wednesday. Champagne and oysters were the leading courses of the entertainment, and over two hundred people took part in the banquet. A free concert was also provided in the programme.

BOSTON AND NEW ENGLAND.

— Among other things that the grand jury of Suffolk County, which made its report December 7th, has looked into, is the condition of the public institutions at South Boston and Deer Island. They find that the inmates at both institutions are idle a great part of the time when they should be employed, and the jury recommend that the mayor petition the legislature for authority to take such action as will result in keeping the inmates at work; such authority to include power to make contracts for their labor if necessary. The jurors find that the cells at the House of Correction at South Boston are too small, the ventilation bad, the sanitary arrangements antiquated and dangerous and the buildings wholly unsuitable for their present use. The jury recommends that the buildings be either torn down or sold, and the institution removed to Long Island, new buildings to be erected at the latter place for the accommodation of the prisoners.

— The ambulance corps of the first brigade, Massachusetts Volunteer Militia, competed at their armory at Lowell on Thursday evening, December 5th, for prizes offered a year ago by the Surgeon-General ot the State. The prizes were two in number: for the best extemporized appliance (1) for a fractured thigh and (2) for either a fractured upper arm or leg. The trial was made under the following conditions: Such material only was to be used as might be picked up on a battle-field, with the bandages, etc., carried by the corps, and no tools were to be used save such as are provided by the State, with the addition of a hatchet or an axe. Plaster casts of legs and arms were provided for the application of the apparatus. The collection was a most instructive one, and gave evidence of ingenuity on the part of the young men of the corps, as well as interest in the work. As a study of first aid to the injured, it was worthy of professional attention.

— The annual meeting of the directors of the Mary Fletcher Hospital, of Burlington, Vt., was held December 4th. These officers were elected: President, Walter Carpenter; Vice-president, M. H. Buckham, Secretary, L. G. Ware; Treasurer, T. E. Wales; Auditor, Henry Greene; Warden, V. G. Barbour; Secretary of the Prudential Committee, G. W. Wales; Financial Committee, Walter Carpenter, T. E. Wales and Henry Greene.

— William S. Simmons, Connecticut State Inspector of Factories, has presented his first annual report to the governor. During the five months that he had served, Mr. Simmons has inspected 255 buildings and factories, which employ 42,089 persons or about one-third of the manufacturing population. Of these places, 128 were found in excellent condition, and 127 had faults which need to be remedied. In all, 206 changes were ordered. He calls attention to the fact that the condition of many closets in the factories of the State is shameful.

NEW YORK.

— A hippopotamus was born in the Central Park menagerie on the night of December 1st; and this is said to be the first instance of an event of this kind in this country. Unfortunately it died on the 6th of pneumonia.

— Two other deaths from electric light wires have occurred. While Henry Harris, a clerk in a dry-goods shop on Eighth Avenue, was, with another employee, carrying a large show-case in from the sidewalk, an imperfectly insulated electric light wire which ran to an arc light suspended in front of the store, sagged down low and came in contact with the metal of the show-case killing him instantly. A day or two later a lineman was killed while at his work.

— A Swedish disciple of the Faith Cure has been arrested in Brooklyn charged with refusing to give medicine to his three-year-old child suffering from diphtheria and with exposing others to a contagious disease. The child was attended by Dr. Prendergast of the Society for the Prevention of Cruelty to Children, but the father would not administer the remedies prescribed and since his arrest it has been cared for by the Charities Department.

— The Babies' Hospital which was organized some three years ago, was formally inaugurated with religious exercises on the 6th of December. It is situated on the corner of Lexington Avenue and 55th Street, and is the only institution where infants are exclusively cared for. Special features of its work are the training of young girls for children's nurses and a post-graduate course for instructing trained nurses in the special nursing of sick children.

— Mr. C. F. Allan, President of the Commission in charge of the improvements on the quarantine islands in the harbor, in company with the architect and a number of officials recently made a visit of inspection to the islands and found the work progressing satisfactorily. It is not believed, however, that the $268,000 appropriated by the legislature will be sufficient to complete all the improvements contemplated, and an additional appropriation will be asked for at the coming session of the legislature.

— On the 6th of December there was organized at the Hotel Cambridge the "Association of Life Insurance Medical Directors of America," with the following officers: President, Dr. J. M. Keating, of Philadelphia; Vice-presidents, Drs. G. W. Russell and Lewis McKnight; Secretary, Dr. Frank Wells; Treasurer, Dr. J. W. Brannon. The object of the Association is stated to be "the promotion of medical science as applied to life insurance by the personal intercourse of the members, presentation of papers, discussions and such other methods as may be found desirable, and also the encouragement of social and personal relations between its members and the advancement of the general interests of life insurance."

— At a meeting of the Section on Public Health, Hygiene and State Medicine of the Academy of Medicine, held December 6th, Dr. Frederick Peterson read a paper on "The Colonization of Epileptics." Stating that for every other defective class some provision had been made, he urged that separate institutions for these unfortunates should be established in the community. Dr. A. Jacobi, in discussing the paper said that the State would probably not provide separate care for epileptics for ten or twenty years yet. If a bill giving the pauper insane a chance to live as human beings were passed next year it would be all that could be expected. "This is not a civilized country," he remarked, "it is semi barbarous." In proof of the assertion he cited the course of the New York Legislature in repeatedly refusing against the most powerful influences that could be brought to bear upon them, the State Charities Aid Association bill for the transfer of the pauper insane from the utterly unfit county institutions to properly organized and conducted State Hospitals.

Miscellany.

RUMINATION IN THE HUMAN SUBJECT.

In the *London Medical Recorder* for November 20, 1889, Dr. Ireland summarizes the contents of a paper on this curious phenomenon by Dr. Sievers in the *Finska Läkaresällskapets Handlingar*, No. 5, 1889.

This author first gives a *résumé* of the different opinions upon rumination since 1618 (when Fabricius ab Aquapendente published the first case of this affection) until the present time. He recalls that since the appearance of the classical work by Adrien Dumur on the "Paralysis of the Cardiac Orifice or Merycism," the most recent authors see in this affection a nervous moving of the stomach accompanied by more or less diminution of the tone of the cardiac orifice. He thinks, however, that the true nature of rumination has not yet been thoroughly studied. Like Johannessen, to whom we owe the most detailed examination of this subject, Dr. Sievers says that before drawing any conclusion, the details should be more minutely studied. But while the researches already made do not explain satisfactorily the nature of rumination, they furnish us with very important facts for the therapeutic treatment.

Dr. Sievers publishes three cases of rumination which he observed in private practice at Helsingfors. Besides these, so far as he knows, there are only three other cases of rumination mentioned in Scandinavia and reported by Johannessen in *Zeitsch. für klin. Medicin*, Band X and XII. In the first case described, the patient, aged twenty-seven, who had been a governess and sick nurse, belonged to a very nervous family, though none of them suffered from insanity or any other grave disorder. She had previously enjoyed good health; she always ate very quickly, and did not properly masticate her food. It is now ten years since she commenced to ruminate her food, after a sea voyage lasting from three to four days, during which time she had not defecated, owing to want of convenience. Five, ten, or thirty minutes after eating, the food is collected in little balls in the mouth in order to be subjected to a second mastication. The patient seems quite at ease during rumination. After an ordinary dinner the rumination lasts from an hour and a half to two hours. If she moves about, or even if she is disturbed, rumination begins sooner and is more active. Trying to restrain the process brings on such distress that the patient is compelled immediately to give in. During rumination she prefers to be seated; she leans forward, and at every mouthful which returns she lowers her head.

On scrutinizing the abdomen during the act of ruminating one notices a dimple-like depression under the ribs. This is accompanied by an uneasy sensation passing from right to left. This does not extend farther than about the cardiac orifice. The patient feels a slight shock, and the food returns to the mouth. The stomach was found to be moderately distended with air. There was no retardation of digestion and no excessive secretion of gastric juice: but there was found to be unusual acidity of the contents of the stomach owing to the increased production of hydrocholoric acid. No lactic acid could be detected. For this patient Dr. Sievers prescribed a teaspoonful of Carlsbad salts before dinner and supper, and a teaspoonful of bicarbonate of soda after each meal. The diet was to consist of milk, eggs, meat, and a very little bread. Under this treatment there was a gradual improvement; and at the end of five weeks the rumination had entirely ceased, nor did it return after she had discontinued using the alkalies.

The second case was a priest, sixty years old. He had constipation, eructations, and sometimes pain in the belly. The health was otherwise good. He had always ruminated; his father, now eighty-eight, did the same. The process commenced after a meal and lasted from two to three hours. He never tried to stop it, and does not think he could, as it goes on independently of his will. He did not desire medical treatment with a view to remove it.

The third case was a Jewess, thirty-five years old, of a highly neurotic family. Her father also ruminated; and one brother out of the family of nine occasionally did the same. She herself has ruminated from childhood. The food returns of itself. The act causes her no uneasiness, which would not be the case if she tried to resist it. She did not desire medical treatment. The contents of the stomach were found to be very acid.

In *La Psichiatria* (Fasc. III–IV) there is a paper on "Rumination," by Dr. Cantarano. He had opportunities of studying this affection in four idiots, two imbeciles, and three patients deeply demented. No uneasiness seems in these cases to have followed the process. Dr. Sievers, amongst other contributions to this curious subject, refers to the papers of Alt (*Berl. klin. Wochensch.*, 1888, Nos. 26 and 27) and of Boas (No 31 same journal), and in the *Archives de Neurologie* (VII, 1884) the reader will find an interesting paper on "Merycism," by Drs. Bourneville and Séglas.

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TREPHINING OF THE OS ILIACUM FOR DEEP ABSCESS OF THE FOSSA.

The Paris correspondent of the *Medical Press*, November 20th, refers to a paper read recently at the Société de Chirurgie by M. Terrillon, in which are cited two cases in which he had used trephining successfully. The first was that of a young girl (eighteen), who came to consult him for a fistula in the neighborhood of the left superior and anterior iliac spinal process, consecutive to a vast abscess of the iliac fossa for which every kind of treatment was employed in vain. The secretion was very abundant, the general condition of the patient bad, so that when an operation was proposed, it was immediately accepted. A large incision was made along the iliac crest, the abscess was reached, situated between the bone and the peritoneum, with walls greatly thickened with fungus deposit. With the curette these were removed and a counter-opening was made a little over the Fallopian arch, and the usual after-treatment ordered. The patient for a time seemed better, but little by little the fungosities returned, fistulous tracts were established and at the end of five months the condition was as bad as the first day. After another careful examination of the parts, M. Terrillon came to the conclusion that the obstacle to the healing of the purulent cavity lay in the difficulty of bringing such a movable wall as the peritoneum into contact with a rigid osseous wall, and resolved to trephine the bone. For this purpose he made an incision down to the bone three inches above the great trochanter, the lips drawn aside, the periosteum detached with care, and the trephine applied; when the bone was pierced, the cavity was cleaned out as well as possible, and a large drain introduced. Amelioration was very rapid; at the end of a month the patient was much better, and in four months the cure was complete. Another case, that of a young man who was suffering from psoas abscess, was treated in a similar manner and with a like happy result.

Correspondence.

OPEN-AIR TREATMENT OF PHTHISIS.

Cambridge, December 9, 1889.

Mr. Editor: — After the paper of Dr. H. I. Bowditch, read before the American Climatological Association, June, 1889, treating of the value of "open-air travel as a curer and preventer of consumption," the following extract from the book of a now forgotten worthy is interesting.

. . . "And I think it is no less obvious, if Exercises be as efficacious as I assert, that it is in our Choice whether a Cough shall run on to a Consumption; that is, I understand, that when a Cough comes to last a Month, and begins to chop in its Indications, to require one while incrassating Medicines, another while attenuating ones: I say, it is high time to look out, and set upon a resolute Course of Riding, that by a Series of Journeys, continued Day after Day without intermission, the obstructed Perspirations may be restor'd, which may then be easily effected," etc. ["Medicina Gymnastica," by Francis Fuller, M.A. The Sixth Edition. London. 1728. The Preface.]

This book is referred to by Addison in the *Spectator*, No. 115. Yours truly, Edwin Farnham, M.D.

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NITRITE OF AMYL IN CHLOROFORM NARCOSIS.

San Francisco, Cal., November 30, 1889.

Mr. Editor: — In reading an article on "Death from Chloroform," in your issue of November 21st, I notice the absence of the one antidote on which I most rely, namely, nitrite of amyl. I always keep it ready for use in my office, and carry it with me when I use chloroform elsewhere, and find it of great value, in cases where chloroform does not act kindly, in restoring the heart's functions. In the exceptional cases when cocaine causes faintness and collapse, a few inhalations of amyl quickly restore a normal condition. Sincerely yours,

George H. Powers, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 30, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	566	188	14.22	15.30	2.70	1 44	4.86
Philadelphia	1,040,245	360	108	13 16	14.84	.56	1.88	8.12
Chicago	830,000	256	120	19.50	7.80	2.34	1.56	12.87
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	152	46	12.24	20.40	.68	3 40	4.08
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	152	39	8.84	17.68	.68	1.36	6.80
New Orleans	250,000	123	32	8.91	16.20	3.24	—	4.05
Cincinnati	225,000	105	—	19.95	8.55	3.80	3.80	8.55
Washington	225,000	75	20	15.96	11.97	—	7.98	5.32
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	15	7	6.66	6.66	—	—	—
Charleston	60,145	27	5	11.11	14.84	7.40	—	3.70
Portland	40,000	11	0	9 09	18 18	—	—	9.09
Worcester	78,292	19	10	15.78	5.26	5.26	—	10.52
Lowell	71,518	23	11	21.75	4.35	8.70	4.35	8.70
Cambridge	65,552	32	10	21.91	12.52	3.13	6.26	12.52
Fall River	62,647	22	5	9.10	27.30	4.55	4.55	—
Lynn	53,334	14	0	7.14	7.14	—	—	7.14
Springfield	40,731	6	4	16.66	16.66	—	—	16.66
Lawrence	40,619	25	8	32.00	12 00	4.00	8.00	20.00
New Bedford	37,253	13	5	30.76	7.69	15.38	7.69	7.69
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	3	0	—	—	—	—	—
Salem	29,011	6	3	—	—	—	—	—
Brockton	28,813	6	0	16.66	33.33	—	—	16.66
Chelsea	28,167	12	0	16.66	8.33	—	—	8.33
Haverhill	26,058	12	1	8.33	50.00	—	—	8.33
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	11	2	9.09	18.18	—	—	—
Newton	21,553	5	0	20.00	20.00	—	—	20.00
Malden	19,774	3	1	—	66.66	—	—	—
Fitchburg	17,534	2	1	—	—	—	—	—
Waltham	17,332	4	3	25.00	75.00	—	—	25.00
Pittsfield	15,502	2	1	—	—	—	—	—
Attleborongh	15,425	—	—	—	—	—	—	—
Newburyport	13,875	0	0	—	—	—	—	—
Quincy	13,728	1	1	—	—	—	—	—

Deaths reported 2,063: under five years of age 631; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 296, consumption, 293, acute lung diseases 244, diphtheria and croup 147, typhoid fever 43, diarrhœal diseases 43, scarlet fever 23, whooping-cough 11, cerebro-spinal meningitis 10, malarial fevers 10, erysipelas 6, measles 3.

From scarlet fever, Philadelphia 9, New York 8, Chicago 3, Baltimore 2, Pittsfield 1. From whooping-cough, New York 6, Chicago and Cincinnati 2 each. Baltimore 1. From cerebro-spinal meningitis, New York, Cincinnati and Washington 2 each. Chicago, Nashville, Chelsea and Gloucester 1 each. From malarial fevers, New York 5, Baltimore 3, New Orleans 2. From erysipelas, New York 5, Chicago 1. From measles, New York 3.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending November 23d, the death-rate was 18.2. Deaths reported 3,334: infants under one year of age 803; acute diseases of the respiratory organs (London) 328, measles 74, scarlet fever 72, whooping-cough 61, fevers 55, diphtheria 50, diarrhœa 40, small-pox, (Liverpool) 1.

The death-rates ranged from 8.6 in Brighton to 30.7 in Plymouth: Birmingham 18.0, Bradford 23 8, Derby 12.7, Hull 20.1, Leeds 22.6, Leicester 16.6, Liverpool 18.5, London 16.5, Manchester 24.7, Norwich 17.1, Nottingham 16.9, Sheffield 18.2 Sunderland 26.0.

In Edinburgh 20.3, Glasgow 24.0, Dublin 24.2.

The meteorological record for the week ending Nov. 30, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Week ending	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
Saturday, Nov. 30, 1889.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...24	30.16	45.0	51.0	39.0	69	63	66.0	W.	S.W.	16	14	C.	O.		.0
Monday, ..25	30.21	46.0	50.0	42.0	72	58	65.0	S.W.	N.W.	9	18	O.	O.		.0
Tuesday,..26	30.58	34.0	41.0	28.0	68	54	61.0	N.W.	N.W.	10	8	C.	F.		.0
Wednes. ..27	30.45	35.0	40.0	30.0	100	88	94.0	N.	E.	8	35	N.	R.	2.00	.07
Thursday,.28	29.65	50.0	60.0	40.0	100	67	84.0	S.E.	S.W.	17	20	R.	C.	15.55	1.63
Friday,....29	29.84	40.0	46.0	34.0	67	63	65.0	S.	S.W.	8	12	C.	C.		.0
Saturday,.30	30.21	32.0	36.	29.0	70	58	64.0	W.	W.	14	12	O.	C.		.0
Mean for Week.	30.14		46.0	34.0			71.0								

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 30, 1889, TO DECEMBER 6, 1889.

First Lieutenant R. R. **Ball**, assistant surgeon, Fort Riley, Kans., will proceed to Fort Sill, I. T., and report to the commanding officer for temporary duty at that post. Par. 2, S. O. 173, Department Missouri, November 21, 1889.

By direction of the Secretary of War, Captain **James E. Pilcher**, assistant surgeon, is relieved from duty at Fort Hood, N. Y. H., and will report in person to the commanding officer Fort Clark, Texas, for duty at that station, reporting also by letter to the commanding general Department of Texas. Par. 3, S. O. 176, A. G. O., November 26, 1889.

Leave of absence for fifteen days is granted Captain **John J. Cochran**, assistant surgeon U. S. Army, to commence about December 1, 1889. Par. 8, S. O. 272, Division Atlantic, November 27, 1889.

Leave of absence for one month, to take effect on or about December 18, 1889, is hereby granted Major **William D. Wolverton**, surgeon U. S. Army, Fort Douglas, Utah, with permission to apply at Headquarters Division of the Missouri for an extension of seven days. Par. 1, S. O. 114, Department of the Platte, November 30, 1889.

By direction of the Secretary of War, Captain **John de B. W. Gardiner**, assistant surgeon, will be relieved from duty at Fort Reno, I. T., upon the arrival at that post of Captain **James C. Merrill**, assistant surgeon, and will report in person to the commanding officer Fort Supply, Ind. Ty., for duty at that post. Par. 8, S. O, 279, A. G. O., November 30, 1889.

Leave of absence for fifteen days is hereby granted Captain **Walter D. McCaw**, assistant surgeon, U. S. Army, Fort McPherson, Ga. Par. 3, S. O. 276, Division Atlantic, December 3, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 7, 1889.

Neilson, J. L., surgeon. Detached from the U. S. S. "New Hampshire" and ordered to the U. S. S. "Portsmouth."

Beyer, H. G., passed assistant surgeon. Detached from the U. S. S. "Portsmouth," and placed on waiting orders.

Siegfried, C. A., surgeon. Detached from the Naval Station, New London, Conn., and ordered to the "New Hampshire."

Hall, Jno. H., passed assistant surgeon. Ordered to the Naval Station, New London, Conn.

Kite, I. W., assistant surgeon. Detached from the Naval Hospital, Philadelphia, Pa., and ordered to the Naval Hospital, Pensacola, Fla

Ross, J. W., surgeon. Detached from the Naval Hospital, Pensacola, Fla., and placed on waiting orders.

OBITUARY. THOMAS B. HARVEY, M.D.

Thomas B. Harvey, M.D., died at Indianapolis, December 5th, aged sixty-two. He was graduated from the medical college of Ohio, at Cincinnati, in 1816. In 1862, he settled in Indianapolis, where he continued to practice the remainder of his life. During the year 1889 the Indiana Medical College was organized, and Dr. Harvey was appointed to the chair of medical and surgical diseases of women, which he held to the day of his death. For over twenty years Dr. Harvey was consulting physician in the same special department in the City Hospital, also in St. Vincent's Hospital since its organization, while for ten years he was consulting physician to the City Dispensary. He aided in the organization of the Hendricks County Medical Society, read the first paper before that body, and was subsequently its president. He also aided materially in the organization of the Indianapolis Academy of Medicine, and was honored in being elected its first president. He became a member of the State Medical Society during the third year of its existence; was made its vice-president in 1865, and its president in 1880. He was also a member of the American Medical Association, and of the Mississippi Valley Medical Society, before which bodies he read many able papers.

DEATH.

Died December 1st, Thomas Bassett, M.D., of Kingston, N. H., aged 92 years, 8 months, 18 days. He had been a medical practitioner for sixty-five years.

BOOKS AND PAMPHLETS RECEIVED.

A Handbook of Dermatology. For the Use of Students. By A. H. Ohmann-Dumesnil, A.M., M.D. Illustrated. St. Louis: St. Louis Medical and Surgical Journal Publishing Company. 1889.

Through the Ivory Gate: Studies in Psychology and Insanity. By William W. Ireland, M.D., Edin., formerly of H. M. Indian Army. New York: G. P. Putnam's Sons. 1889. Edinburgh: Bell & Bradfote.

Report upon the Sanitary Condition of Watch Hill, R. I., with Suggestions for Improvements. By Wm. Paul Gerhard, C.E., Consulting Engineer for Sanitary Works. Cincinnati: Robert Clarke & Co. 1889.

Misplacements of the Uterus. History of Cases Showing how in Many Instances they are Produced; the Accompanying Conditions: Microscopical Examinations. By Mary A. Dixon Jones, M.D., Brooklyn, N. Y. Reprint. 1889.

Contributions to the Surgical Treatment of Tumours of the Abdomen. Part II, Electricity in the Treatment of Uterine Tumours. By Thomas Keith, M.D., LL.D., Edin., and Skene Keith, F.R C.S., Edin. Edinburgh: Oliver & Boyd. 1889.

Students' Aid Series.
Volume I. Aids to Diagnosis. Part I, by J. Milner Fothergill, M.D.; Part II, by J. C. Thorowgood, M.D.; Part III, by J. Milner Fothergill, M.D.
Volume II. Parts I, and II, Therapeutics and Materia Medica, by C. E. Armand Semple, M.D ; Part III, Rational Therapeutics, by J. Milner Fothergill, M D.
Volume III. Aids to Medicine. Part I, The General Diseases; Part II, The Pathology of the Urine; Part III, Diseases of the Brain, by C. E. Armand Semple, M.D.
Volume IV. Part I, Obstetrics, by Samuel Wall, M.D ; Part II, Gynecology, by Alfred S. Gubb, M D.
Volume V. Part I, Aids to Anatomy, by George Brown, M.D ; Part II, Aids to Surgery, by George Brown, M.D.; Part III, Aids to Physiology, by B. Thomson Lowne, M.D.
Volume VI. Part I, Aids to Chemistry (Three Parts), by C. E. Armand Semple, M.D.; Part II, Forensic Medicine and Toxicology, by W. Douglas Hemming, M.D.
Six volumes. Published by G. P. Putnam's Sons. 1889.

Original Articles.

ON METHODS OF EXAMINATION IN MEDICO-LEGAL CASES INVOLVING SUITS FOR DAMAGES FOR REAL OR SUPPOSED INJURIES TO THE BRAIN AND SPINAL CORD.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D.,
Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System to Out-patients, Boston City Hospital.

When a patient has been for a long time the victim of nervous disease, it often happens that he is disposed to exaggerate his symptoms, or else he may be, from his natural incapacity or as the result of disease, incapable of giving trustworthy information. These sources of error are also present, sometimes even to a greater degree, in patients with nervous disease due to injury. In such cases the victim of an accident returns to consciousness to meet the letter of the "shyster" lawyer who urges him to bring suit against the persons or the company liable for his injuries; he has the question of a law suit presented to him in repeated family conclaves; he is visited by experts who subject him to all sorts of examinations; he is subject to the worry and excitement of a trial, with its appeals and delays; through it all he is harassed by the vital questions, "What will become of me? Shall I be able to earn any more money? Who will provide for my wife and children?" At last all is over, he is left to himself, his anxieties about money are relieved, and, being free from excitement, he not unnaturally gets better. In the majority of cases the symptoms are largely subjective, and the railway surgeons, unused to the symptoms of nervous disease and incapable of estimating them at their true value, note the improvement and say that the man was a fraud. In many cases, however, the improvement is partial and often only temporary. Besides there are, perhaps, other cases where the patient has sustained some trifling injury; these cases are undoubtedly not seriously injured and some of them are undoubted frauds, and are successful in imposing upon the railway companies. It behooves us, therefore, to study carefully the symptoms, and to see in what ways we can determine whether the case before us is genuine or not. It is my purpose, therefore, in this paper to speak of some of the methods which the physician should employ in his examination. In so doing I shall avoid saying much of methods which require special and complicated apparatus, and I shall speak only of those methods of examining special organs like the eye or the ear, which the general practitioner ought to understand and to be able to employ.

In the first place I would say here, once for all, that in examining the patient, he should be carefully and unobtrusively watched during the whole period of examination. In this way many efforts at simulation may be detected, a paralyzed limb will be seen to be moved, an assumed expression will be dropped, or a feigned lameness will disappear. This obvious injunction is, however, so familiar and has been so repeatedly insisted upon that it has led to a source of error. When certain symptoms are elicited only by special methods of research and do not appear during the patient's ordinary acts, it is often hastily and incorrectly assumed that they are simulated. Now it is perfectly well-known that we have precisely such a state of affairs in many organic diseases of the nervous system. In the early stages of tabes dorsalis we may note no peculiarity of the patient's gait or station, but if we make him walk or stand barefooted and with his eyes shut we can detect the beginning of ataxia. In multiple sclerosis the characteristic intention tremor may be absent when the patient performs the more automatic movements of taking off his hat or shaking hands, but when he tries to write or lift a glass full of water to his mouth the tremor appears. It is obvious, then, that if we reject such tests we deprive ourselves of extremely valuable data for diagnosis. Moreover, if we consider the mental processes which the simulator would naturally employ, it is not credible that he would conceal his symptoms from ordinary view and reveal them only on the application of unfamiliar and highly specialized tests. Feigned symptoms are aggressively prominent, but in many of these cases there are many symptoms which must be searched for with care and inquired after in detail. Such symptoms, although subjective, that is dependent upon what the patient tells us or does himself, are in my opinion, of great value, and afford evidence second only to the purely objective phenomena. Of course, I do not include answers to leading questions, as in regard to pain or peculiar sensations, but rather the results of examination into disturbances of motion and sensibility. Furthermore, symptoms of a slight and partial character, such as slight loss of sensation, poor vision, slight tenderness, etc., are more apt to be genuine, for the simulator usually goes to extremes.

In what I have to say I shall touch lightly upon the symptoms of the typical organic affections which may follow injury, such as transverse myelitis, paralysis from direct injury to the brain or cord, fractures, neuritis, or the typical degenerative diseases like tabes or general paralysis. Such results of injury are less common, and the symptoms of these affections are usually so well marked that the diagnosis is easy. The chief difficulty lies with the cases of so-called "spinal concussion" or "railway spine," the "traumatic neuroses" of the recent German observers.

In the first place, then, a full history of the patient's trouble should be taken, including an account of the accident. This history should be taken without the presence of a third person, unless another physician be present. Careful inquiry should be made in regard to all the symptoms, and the functions of all portions of the body should be investigated. After that it is well to get a supplementary account of the patient's condition from some member of the family. Statements from casual acquaintances who see and can know little about the patient are not of much value. During this time many of the symptoms to be spoken of later should be noted and the estimate made as to the mental condition.

PSYCHICAL SYMPTOMS.

It is comparatively rare that we meet with any pronounced type of insanity following injury. There is a form of primary traumatic insanity with dementia, disturbed consciousness, confusion, hallucinations and maniacal outbursts which is occasionally met with. Dementia and general paralysis may also rarely follow injury. For the detection of these I must refer to the treatises on insanity, noting in passing, that many alienists think that simulation of insanity is in itself a symptom of mental derangement.

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[1] Read before the Massachusetts Medico-Legal Society, October 2, 1889.

In the majority of cases, however, there are distinct psychical disturbances, not reaching the degree of actual insanity, which can be detected on careful examination. The patient has an anxious, furtive, restless look, or else he may be distinctly melancholy. He is sometimes distinctly emotional, and bursts into tears on slight provocation, shedding actual tears. He becomes distinctly hypochondriacal. He wanders about restlessly with his fingers fumbling with his clothes, or twisting together. More often he sits by himself, avoiding other people, caring little for what is going on, and taking little interest in anything — even in his suit for damages. He has little to say, and what he says is in a constrained tone and broken by sighs or gaspings for breath. The memory and the mental power are much poorer than before his injury. He is, moreover, abnormally irritable, and he shows it by objecting to examination; he cannot bear the noise of his children or the slightest disturbance of his domestic life. Finally, the power of persistent mental or physical application is lost; although he may attempt to work he cannot pay attention to it nor keep at it; and when at home, he never can occupy himself in anything. Reading or listening to reading becomes impossible after a few minutes. The whole train of psychical symptoms, may also have brief periods of exacerbation, "anxious spells," lasting a few moments and being attended with increased frequency of the pulse.

This psychical symptom-complex, with its marked features of irritability, depression and loss of power of persistent application, is of very great value in diagnosis. It is present to a greater or less degree in the majority of severe cases. I believe, moreover, that it is practically impossible to feign this condition successfully. If the patient himself produces upon the physician, after careful observation, the impression of this condition, and if his own statements and the statements of his family corroborate it after close questioning, it may be set down as genuine. It may require several observations, but, if the physician be sufficiently familiar with mental disturbances to be capable of judging intelligently concerning them, a definite conclusion can be reached, and the patients possessing medical knowledge and the immense dramatic skill requisite to simulate this condition successfully are very few.

In addition to these psychical symptoms the patient will often report certain other cerebral symptoms, which should be given some weight. Headache is common, but usually it is said not to be very severe — the simulator's pains are generally intense. Vertigo is often present. The speech is seldom much disturbed, except in the way I have just mentioned. Hoarseness demands a laryngeal examination to discover its cause. True aphasic symptoms are absent except in cases of direct injury to the speech centres. The characteristic speech of general paralysis and multiple sclerosis is familiar. In these affections, too, the handwriting is typical, and a specimen of it ought always to be procured.

Before speaking in detail of the physical examination it may be stated that a careful examination of the body should be made for evidence of local injury, bruises, wounds, scars, or fractures.

MOTOR SYMPTOMS.

Eye. — Each eye should be examined separately, and then both together. We must note the power of movement of the eye-ball in all directions, the size of the pupils and their relation to each other, and the reaction of the pupils to light, accommodation, and irritation of the skin of the neck. Although it is sometimes a problem of exceeding difficulty to determine just what muscle or muscles may be paralyzed, it is usually an easy matter to determine that some muscle is paralyzed, and the simulation of paralysis of any muscle of the eye or of the eyelid is impossible. Nystagmus is another incontestable symptom, but it is often to be noticed only when the eyes are turned in one particular direction. This symptom is occasionally present in traumatic neuroses, but oculo-motor paralysis is extremely rare. In oculo-motor paralysis the patient will complain of double vision. It occasionally happens that the patient has double vision with only one eye. This is so rare a symptom and apparently so impossible that no simulator would venture to feign it. Therefore, when it is reported, the chances are greatly in favor of its genuineness.

Dilatation or contraction of the pupils may be produced by drugs; in that case they will not respond to light or accommodation, but in dilatation from disease the same thing may happen. Unequal pupils that react are incontestable. They are not common, however, except in degenerative diseases like general paralysis. Temporary inequality from an abnormally mobile pupil is occasionally seen in neurasthenic conditions, and has little significance. In pupils of moderate size a failure to react is also incontestable evidence of disease, and the proof is even stronger if the pupils react to accommodation and not to light. This is occasionally noted in traumatic neuroses, and is not uncommon in tabes and general paralysis.

Most of the oculo-motor symptoms, therefore, are of a class that are purely objective and cannot be feigned, but in the majority of cases of traumatic neuroses they are absent. In obscure cases, therefore, their absence can count for little but their presence means very much.

Face. — Paralysis of all branches of the facial nerve cannot be simulated, but it is due to peripheral trouble and is very rarely seen after injury. Paralysis of the lower part is seen in certain forms of brain disease, and is not an easy thing to simulate. In central paralysis the power of voluntary movement may be lost, and yet the face may move from emotion, as in laughing or crying. If such a thing is noted it therefore does not prove simulation, but rather the reverse, for, if a simulator had so great skill as to feign facial paralysis successfully, he would be very likely to manifest it constantly. Fibrillary tremor of the face and tongue is of considerable value in the diagnosis of degenerative diseases like general paralysis, and is, of course, incontestable. Paralysis of the tongue is so rarely seen in any traumatic case that it need not detain us.

Paralysis. — It is well to examine the limbs systematically, beginning with the arms, and directing the patient to make all the movements at each joint, proceeding from the trunk to the periphery. All the joints should also be moved passively to detect any joint disease. Then the patient should be directed to make the principal movements against the resistance of the examiner, which affords the only practicable test of muscular strength, although it is not a test which can be expressed in figures. I need not call attention to the fact that the distribution of the paralysis is a guide for the localization of the disease. Paralysis is a favorite symptom for the simulator, and the detection of a bogus paralysis is not always easy. Fortunately our suspicions need not be excited unless we meet with a paralysis without anæsthesia, contracture, altered reflexes, atrophy or electrical changes. In such cases much care is needed to detect fraud. The unexpected application of a very strong faradic current or the ostentatious use of the actual cautery, may cause a movement of an alleged paralyzed limb. When a patient with a paralyzed arm stoops the arm drops to the perpendicular; the simulator is apt to keep his at his side. Actual paralysis, however, is rare. It is seen, of course, in transverse myelitis, where the other symptoms render the diagnosis easy, and in neuritis, which, as I have shown elsewhere,[2] is a not uncommon complication of "concussion" cases. It is also observed in the hysterical monoplegia so graphically described by Charcot — the "local traumatic neurosis" of Strümpell[3] — which, like all forms of traumatic hysteria, is very rare in this country. In the general traumatic neurosis there is rarely any paralysis, but all movements are slow and feeble, and the contraction of any group of muscles cannot be maintained, as some forms of dynamometer will show. Here Oppenheim[4] has shown that the suspicion of simulation may be wrongly excited because the patient apparently calls many muscles into play, makes a tremendous effort, and accomplishes little, as if he were really holding his muscles in restraint. This is not due to simulation, however, but to the loss of memory of the motor force necessary. Weakness is more likely to be genuine than actual paralysis, and, when combined with other symptoms is of considerable value.

Gait. — Beside noticing the ordinary gait we should make the patient walk with his eyes shut, making quick turns, and also walk barefooted, which will reveal slighter changes. The ataxic and cerebellar gaits are occasionally seen, but the commonest gait in the traumatic neuroses is an approximation to the spastic gait, with short, shuffling steps. There is no absolute criterion of the genuineness of the gait. Above all in the majority of cases all movements, especially sitting and rising, are governed by the necessity of keeping the spine rigid. Of this stiffness in the back I will speak later.

Contracture and Spasm. — Contracture can be readily distinguished from active efforts to hold the limb in the same position, by the absence of any visible and active contraction of the muscles. It is impossible to feign this condition, but it is rare except in gross disease of the nervous system and in hysteria. In the traumatic neuroses, however, there is apt to be more or less rigidity of the muscles, which is readily recognized and not very apt to be simulated. Clonic spasm is seldom if ever seen.

Convulsions. — Temporary lapses from consciousness are occasionally reported, often associated with vertigo, but true convulsions are rare except as a result of injury to the head. If there is a history of convulsions corroborative evidence may be afforded by bodily injuries or scars on the tongue. If the patient be seen in a convulsion the presence of dilated and immobile pupils is the best test for its genuineness.

Tremor. — Not only must we note the existence of tremor when the patient is presumably off his guard, but we must observe whether it is present during the performance of certain rather delicate movements, such as lifting a glass full of water to the mouth. The latter, for reasons already given, is more apt to be genuine. In traumatic neuroses, a general tremor is not uncommon, and sometimes it extends to so many muscles, including the muscles of the neck, that simulation is hardly possible. The true intention tremor, such as is seen in multiple sclerosis, is occasionally seen in these cases, and is a symptom not likely to be feigned, or if feigned, it will be introduced into the more automatic movements and suspicion may thus be excited. Intention tremor when genuine is a symptom of considerable value as indicating organic disease. Fibrillary tremor, seen most commonly in the limbs in muscular atrophy, is an incontestable symptom.

Ataxia. — We must test the accuracy of movements with the eyes open and shut and compare it with the accuracy of unconscious movements. We must test the patient's power of standing, of standing with the eyes shut and the feet together, of standing on one foot and of standing barefooted. Swaying when barefooted with the eyes shut and not with the boots on is again a valuable test of genuineness. The patient's power of keeping the limbs in a fixed position with the eyes open and shut must also be tested. There is no absolute criterion for any of these forms of ataxia, but the presence of the more delicate shades of it is of much value. Ataxia is occasionally seen in traumatic neuroses, but it is not very common. Its significance in tabes and neuritis is well-known.

Muscular Atrophy and Electrical Excitability. — Much stress is laid upon the electrical reactions in the courts, and a recent writer goes so far as to say: "injury to the spinal cord should always be indicated by muscular atrophy in a more or less marked degree, and when no change is noted in the nutrition of the muscles, doubt may well exist in the mind of the expert as to there having been any concussion of the spinal cord."[5] If by "concussion of the spinal cord" is meant the condition once called by that name and now generally recognized to be cerebral as much if not more than spinal — the condition in short, which I have repeatedly referred to in this paper as the traumatic neuroses — I would say that muscular atrophy is rarely present, even in fatal cases, and that the electrical reactions in the majority of cases reveal nothing. Nevertheless, the electrical reactions should always be tested, for, when they are altered we have incontestable evidence of organic disease of the highest value. In some cases there is a complicating neuritis, with its accompanying electrical changes. Apart from this, muscular atrophy in the traumatic neuroses is rare, and although quantitative changes in the electrical reactions are sometimes seen, the qualitative changes of the degenerative reactions are as rare as atrophy. In testing the reactions the indifferent electrode, which must be "large" (5 x 10 cm.) well covered with absorbent cotton, and thoroughly wet, should be placed either on the sternum or the mid-dorsal region, but, whichever position be selected, the same position should be chosen in all cases. The nerves and muscles should be tested, at the appropriate motor points, with a "normal" electrode (10 sq. cm.) on an interrupting handle. The faradic current should be used first and the position of the cylinder noted for the earliest reaction. The galvanic current should then be used, with a galvanometer in circuit, and the smallest current (in milliampères) noted at which KaSZ and AnSZ occur. Besides this we must note whether contractions be slow or quick. If muscular atrophy be apparent on inspection, careful measurements should be taken, and the presence of fibrillary contractions noted. Of course, the emaciation not uncommon in these cases of protracted illness would never be mistaken for true muscular atrophy. Although the one-sided view of refusing to recognize cases as genuine unless muscular atrophy be present, is utterly incorrect and misleading, still, as I have just said, in the very rare cases where it is present it affords absolute and incontestable evidence of disease, especially where electrical changes are added.

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[2] Boston Med. and Surg. Jour., November 1, 8, 1888.

[3] Berliner Klinik, 1888, Heft 3.

[4] Die traumatischen Neurosen, p. 107. Berlin, 1889.

[5] H. H. Smith: Jour. Am. Med. Assoc., August 10, 1889

I may say, in passing, that general emaciation, to which I have just referred, is, of course, evidence in favor of a chronic disease and it is not a thing to be simulated.

REFLEXES.

Cutaneous Reflexes. — The important skin reflexes to be tested are the plantar, cremaster, abdominal and epigastric. The last two are occasionally absent in health, but absence of the first two is always significant. Another symptom of importance is a difference between the reflexes on the two sides of the body, which is always indicative of some nervous disorder. In many cases these reflexes are undisturbed, but when there is disturbance it is a symptom of disorder in the nervous system which cannot be simulated. This disorder is not necessarily coarse organic disease, for in hysterical anæsthesia the skin reflex may be lost, but the changes in the reflexes signify some genuine trouble.

Tendon Reflexes. — The most important reflex here is the knee-jerk. The best way to obtain this is to seat the patient on a table with his legs hanging over the edge. The legs should be bare, and all constriction removed. By placing one hand upon the quadriceps any attempt at voluntary control of the muscle can at once be detected. The muscle should be relaxed, and the tendon struck with a percussion hammer, a book or the ulnar edge of the hand. If there is no response the patient should re-enforce the reflex by clenching the hands tightly. Persistent absence of the knee-jerk under re-enforcement I believe always signifies organic nervous disease. If cases do occur when it is absent in health they are extremely rare and still questionable. Absence of the knee-jerk, almost constant in tabes and multiple neuritis is extremely rare in traumatic neuroses. In the majority of cases it is exaggerated somewhat. If the jerk is very lively the leg should be extended, the finger placed over the patella which should be drawn down and the finger should be struck a smart blow with a percussion hammer. When the knee-jerk is exaggerated this will cause a contraction of the muscle, and in extreme cases it will set up a clonus. It is a rather delicate and an incontestable proof of exaggeration. Gower's front-tap contraction is another delicate test. Neither of these, however, indicate a degree of exaggeration that is necessarily abnormal.

When the exaggeration is abnormal sudden dorsal extension of the foot on the leg while keeping it strongly extended will give rise to a clonus. If this or the patellar clonus or both be present on repeated examination we have incontestable proof of organic nervous disease. Ankle clonus, however, is of value only when there is a persistent rhythmical clonus. A few irregular contractions soon dying out mean nothing. This clonus when persistent and constant is indicative of disease in the lateral columns of the spinal cord. It is rare, however, to find it in traumatic neuritis.

In a few cases, especially in hemiplegia and paralysis of one arm, the reflexes from the upper extremity may be of interest, but, as a rule, they have much less value.

(To be continued.)

SOME CONSIDERATIONS CONCERNING SYPHILIS AND MARRIAGE.[1]

BY ABNER POST, M.D.

IT is not my wish in this short paper to settle categorically all the vexed questions connected with the subject of "Syphilis and Marriage," but rather, so far as I am able, to formulate the general rules to be followed regarding the marriage of syphilitics, and to enumerate some of the difficulties that I have personally encountered in connection with the subject.

It must be considered that syphilis is a most serious disease, that to contract it is a great misfortune, and to wilfully or even carelessly transmit it to another, is a crime. The victim of syphilis is most likely to inoculate others during the first few months of his disease. There comes a time when he is no longer to be regarded as a special object of danger, and, in all probabilty the latest or so-called tertiary symptoms are absolutely devoid of all contagious properties. A man who marries in the earlier months of his disease is sure to infect his wife, under ordinary circumstances. The same man, after a series of years, may, we know, safely marry; and he may *expect* with great confidence to see a healthy posterity. If it were possible to say that after the lapse of exactly so many months or years the victim of syphilis ceased to be capable of infecting healthy individuals, it would be possible to draw the line beyond which marriage might be permissible. No such line can be definitely drawn, and only approximate rules can be laid down, which may read as follows:

Before a syphilitic can be considered a suitable candidate for marriage

The disease must have passed the period which comprises the usual secondary symptoms.

There must have been a well-marked period of entire freedom from symptoms.

The patient must have submitted to thorough treatment.

The period of time which fulfuls these conditions is impossible to exactly determine. Fournier puts the minimum time that ought to be required before the doctor can even tolerate a marriage at three or four years, and considers a longer delay preferable, and that of this time the last eighteen months or two years should have been entirely free from all symptoms of the disease. This period is none too long in those cases in which the disease shows its gravest forms, but there are certainly cases in which marriage may be consumated after a shorter interval with perfect immunity; and in the last edition of Bumstead and Taylor, the author closes a short chapter on "Syphilis and Marriage," with the following paragraph:

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[1] Read before the Boston Society for Medical Observation, October 7, 1889.

"If possible, it is always well to delay the marriage of a syphilitic person until the end of the second year of infection. But this only holds good for cases which have been treated regularly and systematically during that period, and which at the expiration of that time are apparently free from the disease."

Keyes "puts it roughly" by saying, . . . "after about four years, or, to be safer, at a period not earlier than four years after chancre, when it can be proved that no symptom of syphilis has shown upon the patient for a year, during which year he has been at least six months without treatment."

In discussing the danger in marriage, it must be said that a man may be considered to cease to be *directly* dangerous to his wife, while he is still in a condition to transmit disease to his children; so that he may live in safety with a wife so long as there are no children.

My own opinion may be expressed as follows: In the very mildest cases two years is long enough to wait. The man has by that time ceased to be a source of direct danger to his wife; but even in those cases, I should prefer not to sanction the birth of children. For the severer cases a longer time ought to elapse. Possibly some of the worst cases ought not marry at all. Treatment ought to have been thorough to sanction an early marriage. The medical adviser must be very slow to give more positive assurance of safety than the nature of the disease will permit. The actual responsibility of acting must rest with the interested party.

It has been recently said to me that it makes little difference what the doctor may say upon the subject, syphilitics will marry when they please, the idea being apparently that the doctor may view the matter without much feeling of responsibility. The very opposite seems the fact. If certain patients disregard the doctor's advice, many others are very anxious to know their duty, and follow it faithfully when they learn it. The idea is a very prevalent one that a patient with syphilis must not marry at all, and a permission to marry after a series of years, is to many a brighter future than they dared hope. In contrasting the idea that patients will not heed the dictim of the doctor in regard to marriage, with my own experience, I am able to recall case after case in which marriage has been postponed in accordance with the doctor's advice.

In view of the near consummation of an engagement, the diagnosis of a venereal sore if often of great moment. I remember very distinctly a case in which a man had indulged in a last debauch, expecting soon to marry and settle down. He contracted a venereal sore for which he consulted a gentleman in active practice, who pronounced it a chancroid. The preparations for the marriage were accordingly carried forward, but the sore grew suspicious: a second physician believed it syphilitic, and brought the patient, now almost beside himself with mortification, to me. At that time there was no difficulty in a diagnosis of syphilis, and the patient very honorably, as it seemed to me, caused his engagement to be broken. In this connection it seems proper to remark that the simple venereal ulcer known as the chancroid, is growing comparatively rare as compared with the initial lesion of syphilis, so that the diagnosis of chancroid needs to be made with more and more caution, and particularly, if any question of marriage is involved.

It is not often, probably, that the doctor is consulted by a woman who is syphilitic, as to the propriety of marriage on her part. The question does arise, however; and the answer must be given on the same general principles as those that govern the answer to the male. It is more of a shock to our minds to think of a syphilitic woman marrying a non-syphilitic man, than the opposite. Widows, and women accidentally syphilized in non-venereal manner may, of course, ask the question honestly. If there is, as I believe, any difference in regard to the sexes, one ought to be still more careful to make sure that the disease is latent in the female, and has been most faithfully treated. The woman is more likely to transmit the disease to her offspring, so that there is good reason to hesitate more about sanctioning her marriage, and the interval between the inception of the disease and marriage ought to be longer. For the female, in the opinion of Keyes, five years is little enough; and he thinks more would be better.

It is not often that a woman has the audacity to say to the doctor, "If you will not let me get married, I can't get the money to pay my bill."

This question in regard to the woman may be presented to the doctor in a very embarrassing manner, as occurred to me several years ago. A young woman was under my care for syphilis of a very severe type, with nervous symptoms which did not augur well for her future. She seemed to have some distrust of a doctor's discretion, and bound her medical adviser to secrecy with more than usual solemnity. After her symptoms had disappeared, but within an interval too short to admit of marriage, I received a call from a young man who asked me if I knew any reason why a marriage with her would be undesirable, and if such a reason existed, what it was? Of course, that young man had no right to question a doctor as to his former patient as I somewhat emphatically told him; but at the same time that I recognized my duty to my patient, I could not fully divest myself of a feeling of sympathy for the confiding young man who was in the toils of this Circe. Refusing to say a word about my patient, I referred the young man to his family practitioner whom I knew, and who would, I knew, be wise enough to suspect more than I dared to tell. The proper method of dealing with such a case, is through the patient. It could not be very difficult to bring a woman in such a case as that to see the necessity of controlling her own destiny.

May a man and woman, both syphilitics, marry? Such a question has been asked of me but once, and in considering the matter I was unable to find any reason why the marriage should not be consummated. To the man it was impossible to do any further damage: he was already syphilitic. The woman might receive serious damage by becoming pregnant, but it was only through pregnancy that damage could occur. I do not mean that her syphilis would increase in severity, but the influence of pregnancy and abortion, or, worse yet, of bringing in to the world a syphilitic child could not fail to be injurious both to the body and mind of the woman. Of course, the offspring of two individuals recently syphilitic are peculiarly exposed. I did not hesitate to say to them that there must be no pregnancy ever. My injunctions have been carried out and both have done well; but I have been recently called upon to answer the question when they may allow themselves to have children. I hardly know a more serious question that can be raised: both parties thoroughly syphilitic, anxious for children, and yet realizing fully that it is far better to remain childless than to bring into the world a tainted infant. Is there ever a time when such parents can feel sure of producing a healthy offspring? There are cases enough on record where pregnancy after pregnancy has resulted unfortunately during a long series of years. There are also cases enough where the influence of of the disease is more limited. It seems to me that the cases where the influence of the disease is shown in the offspring during so long a period are exceptional cases, in which the disease has fastened upon the reproductive organs. Few of them have been thoroughly treated. I think the time will come when the chances of healthy offspring will be so great that my patient will be justified in running it. If I was forced to limit the time, five years would seem to me none too long a time, and I should require that the last two years should be without symptoms. I should also desire an extra mercurial course before conception.

How shall we act towards a man who contracts a chancre while living in the married state? It is a question of great importance to settle for that man the time at which he may return to his wife, and the responsibility of the doctor in advising him is not to be regarded lightly. I must confess I do not quite know how to solve the question. It is perfectly possible to lay down certain negative rules. He must, of course, abstain from intercourse so long as he has visible signs of the disease, but it is not safe to trust the man himself to judge when he is free from all danger, a judgment which the most experienced syphilographer might hesitate to pronounce. Probably the disease is more often communicated by some unrecognized abrasion or slight ulceration, than by an obvious and plainly-recognized lesion: desire to escape detection is more often the controlling motive on the part of the husband, than the wish to shield his wife from disease.

How shall we act towards a married woman who contracts a chancre? The number of wives who introduce syphilis into the family is probably much smaller than that of the husbands; but it certainly is occasionally introduced from that side. I do not know that our actions should differ with the sex, unless to impose even greater strictness upon the woman, as it is still more difficult for her to judge of her own condition.

Both husband and wife ought to be informed that they are probably dangerous to their household for a period longer than is covered by the external manifestations of the disease.

An unpleasant complication sometimes arises when the patient accuses himself of introducing syphilis into the family, when he is the victim. A man presented himself with a sore of undetermined character. His conduct was not blameless; but, like other men, he believed it was impossible to have gained any disease from the only exposure of which he had been guilty for a long time. An examination of his guilty paramour, as reported from a nameless source, seemed to confirm his belief in the absence of disease in the person implicated. I say, seemed to confirm, because the woman was never seen by me, but was examined by a physician of whose name I am ignorant, who reported to the patient. Time soon showed the disease to be syphilis; and coincidently with the appearance of the roseola, my patient expressed his fears that he had infected his wife, from whom he had absented himself since the first appearance of his sore. When seen, she showed a roseola, just fading, undoubtedly the older syphilis of the two. In this case it seemed to me that the mutual unfaithfulness absolved the doctor from any duty beyond the treatment of the two cases as they presented themselves.

What is the proper conduct toward the children of a family in which one or both parents are known to be syphilitic? It occasionally happens that a former patient reappears after some years with the information that he has married, and is now a father. Paternity has made him thoughtful, he fears that his first-born has inherited some trouble, and he wants the doctor to examine the infant and determine whether treatment is necessary.

It is a very delicate, often impossible, task to determine whether there is any syphilitic taint in a child, and the propriety of antisyphilitic treatment is equally difficult. The rules laid down by Fournier seem to me so wise, that I trust that I may be pardoned for quoting them here:

"An infant born healthy, in appearance at least, of a syphilitic father need not be treated. Paternal heredity is so much less certain than maternal heredity that the infant has a good chance of having escaped the disease.

"An infant born healthy, in appearance at least, of a mother formerly syphilitic, but who has not shown any accidents of syphilis during her pregnancy need not be treated, since if there are any chances of its being syphilitic there are also chances that it may have escaped.

"An infant born healthy, in appearance, of a woman recently syphilitic, especially if she has had venereal accidents during the course of her pregnancy, ought to be treated energetically from its birth, since it is certain, in spite of its healthy appearance, that it is syphilitic."

There is another class of patients, to which I wish to refer, — rather than to express sympathy than because they deserve other enumeration, — that class of individuals who suffer from some reminder of an early syphilis, when they have long been staid fathers of families. Such men often suffer very acutely at the disgrace which they fancy has overtaken them. They brood over the possibility of infecting the various members of the family; they speculate as to the possibility that their children are tainted; and they imagine the secret cause of their trouble will become public to the shame of themselves and of their families. In fact, they deserved to be classed among the syphilophobiacs and their mental condition often causes more trouble than the physical ailment.

— A contemporary, on the lookout for physiological information, has learned of a sweet girl graduate, who read an essay on physiology, in which she said: "The human body is divided into three parts — the head, the chist, and the stomick. The head contains the eyes and brains, if any. The chist contains the lungs and a piece of the liver. The stomick is devoted to the bowels, of which there are five, a, e, i, o, u, and sometimes w and y."

FIVE HUNDRED AND NINE CASES OF LABOR.[1]

An Analysis of all the Cases in the Out-patient Department of the Boston Lying-in Hospital and of the Boston Dispensary, in the Year 1888.

BY CHARLES W. TOWNSEND, M.D.

The following is a brief analysis of the cases of labor attended by the externes of the Boston Lying-in Hospital during the year 1888, under the direction of Dr. C. M. Green, assistant physician, and Dr. Edward Reynolds and myself, physicians to out-patients to the hospital. The out-patients to the hospital numbered 341 cases, and 168 were Boston Dispensary cases, making a total of 509 cases. Of the 509 mothers, one died of phthisis on the seventh day, the fatal ending being probably hastened by the stress of the labor, but in nowise due to it; so that we can with propriety exclude this death in an obstetrical analysis. No other cases were fatal.

In the year 1887, the last fatal case in the clinic was that of a patient delivered on July 1st, and in the year 1889, the first fatal case was of a patient delivered February 23d. It is interesting to note, therefore, if we omit the case of phthisis in 1888, that during a period of twenty successive months not a single mother died; or a series of 820 consecutive cases without a death.

These favorable results can be largely attributed to the simple but strict antiseptic precautions used by the attendants, which have been so fully described in the paper by my colleague, Dr. Edward Reynolds, and I shall only repeat that they consist chiefly of thorough antisepsis of the examining finger, and of all instruments.

The freedom from septic infection is shown by an analysis of the temperature records; for in 384 cases, or 75%, the temperature always remained below 100°. In 54 cases the temperature reached 100° or 101°, once; in 21 cases, twice; in 12, three times; in 5, four times; and in 4, five times; but was otherwise normal. In 10 cases the temperature remained normal, with the exception of one day, when it registered 102° or over. In 7 the temperature jumped once to 100°, and once to 102° or over; and in one case it registered over 102° three times, and 100° once. Many of these cases of slight and transitory rise of temperature could be explained by nervous excitement, by constipation, by slightly inflamed breasts or sore nipples, although it is probable that some of them were due to slight septic absorption, not sufficient, by any means, to deserve the name of septicæmia. Two cases had irregularly elevated temperatures, due to phthisis; in another, an occasional temperature of 101° was caused by rheumatism; and in another, by tonsillitis. Adding up this list I have just given, we find 118 cases where an occasional and slight elevation of the temperature occurred, or where in some cases this elevation was of a longer duration, but not due to obstetrical causes. These with 384 normal cases give 502 cases or 98.6% of all the cases free from septic trouble. Of the remaining seven cases, three might fairly be considered to have had mild septicæmia, lasting in one case two weeks, the temperature running from 100° to 104°. This was due to a retained portion of the placenta, for which, however, the clinic was not responsible, as both child and placenta were born before the attendant's arrival. The patient recovered after the uterus was curetted. The two other cases were very mild, and lasted seven and eight days respectively. Five remaining cases were possibly of septic origin, although the signs and symptoms, with the exception of an elevated temperature lasting from three to seven days, did not point to this. One of these cases had a temperature of 102° to 104° for three days following a delivery by craniotomy, and was undoubtedly due to the shock and excitement of labor.

The nationality of the patients was divided as follows: American, 148; Russian, most of these being Polish Jews with far from aseptic surroundings, 147; Irish, 107; German, 34; English, 25; Swedish, 10; Austrian, 9; Italian, 7; Scotch, 4; Portuguese, 3; Danish, 1.

There were 96 primiparæ, and 409 multiparæ. The average duration of labor among the former was. in 92 cases, 17.6 hours, the longest labor lasting 61 hours the shortest 1¼ hours. Among 383 multiparæ, the average duration of labor was 11.5 hours, the longest being 69 hours, the shortest ½ hour. These averages are almost exactly those of Spiegelberg, who found an average of 17 hours for primiparæ, and 12 hours for multiparæ.

The 509 mothers gave birth to 516 children, six cases of twins occurring in the list. There were 42 still-born, 11 being born before the sixth month, and therefore non-viable. Of the 31 viable, 5 were premature, 2 were born by craniotomy, one being hydrocephalic; 2 were the second of twins; and 2 had prolapsed cords; 15 had been dead for some time, and were macerated. Ten other children died in from a few hours to six days, four of these being premature; two died of hæmatophilia, two of cerebral hæmorrhage following difficult labor, one of syphilis, and one of imperforate rectum, for whom Litré's operation was done.

Besides these fatal cases, the following deformities or diseases were observed among the 463 children that were discharged well: One monster with double fingers and toes, webbed legs and curiously deformed mouth;[2] one with hare-lip and cleft palate; one with cleft palate; one with a large hydrocele; eight with icterus neonatorum.

Of 474 cases where the presentations were recorded, 456 or over 96% were vertex presentations. Spiegelberg gives over 97% as the ratio for this presentation. Thirteen were breech presentations, three face, one brow, and one transverse.

There were 34 operative cases, of 6½% of the entire number; many of the low forceps operations were performed by the hospital internes, the other operations by Dr. Edw. Reynolds or myself, with one exception, where Dr. Green operated.

There were 20 low forceps operations, six high forceps, five internal podalic versions, and three difficult breech extractions. To be included within these 34 cases were two cases of craniotomy to the after-coming head, one case of cephalic version, and one case of delivery of the aftercoming head with forceps.

Low Forceps. Twenty cases. Fourteen of the mothers were primiparæ, six were multiparæ. The ages of the primiparæ are not of much significance as a cause of delay in the labor, as only two were under twenty years, one being sixteen years old; while only three were over twenty-five, the eldest being thirty years old.

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[1] Read before the Obstetrical Society of Boston, October 12, 1889.

[2] E. Reynolds: Boston Med. and Surg. Jour.

The occiput was in all cases anterior when the forceps was applied, rotation having taken place in those cases where the position was primarily a posterior one. The anterior rotation of the occiput was, in many cases, obtained by the attendant by the simple device of producing complete flexion by placing the fingers firmly on the sinciput during a pain. The position was primarily O. L. A. in fourteen, and O. D. P. in six.

All of the children were discharged well, with but one exception, that one being dead before delivery, in consequence of the compression of a prolapsed cord. The largest child weighed eleven and one-half pounds.

High Forceps. — Six cases. All were in multiparæ, three having had six or more children. In one, labor was induced at the end of the eighth month, on account of a justo-minor pelvis.[3] Cephalic version was performed, and a living child delivered by forceps applied at the brim, with axis traction rods. This interesting case has already been reported to this Society by Dr. Edw. Reynolds.[4]

In one of the remaining five cases, the presentation was O. L. A.; but as the child weighed ten pounds, and the pelvis was slightly contracted[5] in all diameters, there was sufficient cause for delay. Delivery of a living child, with axis traction rods attached to the ordinary Braun-Simpson forceps, was easily performed. Three of the cases presented O. D. P., slightly extended at the brim, the children weighing seven, eight and nine pounds respectively. There was a slight general contraction[6] of the pelvis in the case whose child weighed seven pounds, and a generally contracted flat[7] pelvis in the case where the child weighed eight pounds. In two of the cases constriction rings existed, making version inadvisable. In the generally contracted flat pelvis, the occiput had already rotated to the front, and was delivered by axis traction. In the other two cases, rotation had not taken place. One was rotated manually at the brim, and then easily delivered with forceps. Manual rotation in the other case, where there was a slightly generally contracted pelvis, was easy, but the occiput returned to the posterior position, and the child was delivered by axis traction with the face to the pubes. This was the only still-born case in the series, the death being due, perhaps, to compression from delivery with the occiput posterior, as the fœtal heart was heard before the operation. The other children were discharged well with the exception of one case, who died as a result of an imperforate rectum.

The remaining high forceps case was in a multiparæ with a mitral cardiac lesion with resulting extensive anasarca and pulmonary œdema, causing much dyspnœa and cyanosis. The child presented at the brim, mentum left anterior, and was delivered by forceps with that presentation. No ether was given on account of the condition of the heart and lungs, and was indeed unnecessary, as the woman was unconscious and remembered nothing of the labor. The baby weighed eleven pounds, and both mother and baby are now living. The mother improved at once after the birth of the child. In all of the high forceps cases, the Braun-Simpson forceps was used, and was found amply long enough.

Podalic Version. — Five cases. In one the presentation was transverse, Sc. L. A., and the child (premature, weighing but two and three-quarters pounds) was delivered dead. In this case a constriction ring had formed, owing to prolonged ineffectual labor before the patient was seen, labor lasting sixty-nine hours. In a second case, version was performed on account of a prolapsed hand with O. L. A. position. The child was discharged well.

The three other cases were all posterior positions of the occiput; one an O. L. P.; another being an O. D. P., extended into a brow; and the third, O. D. P. The two latter presentations occurred in pelves, whose measurements were normal, the children weighing nine and nine and one-half pounds respectively. In both cases slight constriction rings of the uterus had formed, and both were difficult versions. In one case high forceps with axis traction was tried, but was unsuccessful, as the head refused to stay in the anterior position after manual rotation. The child was still-born. The other child died in twenty-six hours, probably from cerebral hæmorrhage due to the compression of the head in extraction. In the case where the presentation was O. L. P., measurements taken afterwards showed a slightly justo-minor pelvis,[8] and the patient afterwards admitted that craniotomy had been performed in previous labors. Version was difficult, and the extraction of the hips and abdomen of the child required much exertion. Both legs had to be drawn out before the buttocks could be brought down to the vulva. Craniotomy was performed on the aftercoming head, the various manual methods of extraction and high forceps with axis traction all proving unsuccessful. The child, a male, weighed ten pounds. The mother made an excellent recovery, with the exception of an apparently "nervous" temperature, lasting three days, and previously referred to.

All the mothers in these cases of version were multiparæ.

Three difficult cases of breech extraction alone remain to be considered; the ten other breech cases on the list were either left entirely to nature, or were easily assisted into the world. One of the three cases was in a primipara, twenty-eight years old, who had been in labor forty-nine hours, and was becoming exhausted. The position was S. D. A., and both Bandl's ring and a constriction ring were present. Traction, with the finger in the groin, being unsuccessful, a leg was drawn down, and the child (weighing seven pounds) was delivered living. The child died in two hours; autopsy showed cerebral hæmorrhage. In the second case, in a multipara thirty-three years old, the breech presented high, S. L. A., but was easily drawn down; craniotomy was done on the aftercoming head, on account of an enormous hydrocephalus. Spina bifida also existed. In the third case, a multipara thirty-six years old, with a slight general contraction[9] of the pelvis, the breech was at the brim,

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[3] Between anterior superior spines, 9 in.; external conjugate, 6.8 in.; diagonal conjugate, 4 in.; height of symphysis pubes, 2 in.

[4] Boston Med. and Surg. Jour., cxx, No. 13, p. 308.

[5] Between anterior superior spines, 10 in.; between crests, 11 in.; external conjugate, 6.4 in.; diagonal conjugate, 4.2 in.; true conjugate, 3.8 in.

[6] Between spines, 9.5 in.; between crests, 10.75 in.; internal diagonal, 4.5 in.; internal conjugate, 4 in.

[7] Between spines, 22 cm.; between crests, 26 cm.; internal conjugate, 18 cm.; diagonal conjugate, 11 cm.

[8] Between spines, 9 in.; between crests, 10.75 in.; external conjugate, 7.5 in.; internal diagonal conjugate, 4.75 in.; estimated true conjugate, 4 in.

[9] Between spines, 9.25 in.; between crests, 11 in.; external conjugate, 7.5 in.; diagonal conjugate, 4.75 in.; height of symphysis, 1.75 in.; true conjugate, 4 in.

S. D. P. The breech forceps was applied unsuccessfully, but the breech was delivered by drawing down a leg. The head was arrested high, but was finally delivered with forceps and axis traction rods, manual extraction and forceps without the rods having been tried unsuccessfully. The child was discharged well. These two latter cases have already been reported by me to this Society.[10]

It is unnecessary to repeat that the mothers in all the operative cases were discharged well.

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THE VALUE OF SALICYLATE OF SODA IN DYSMENORRHŒA, WITH CASES.[1]

BY EDWARD REYNOLDS, M.D., AND GEORGE HAVEN, M.D.

The symptom dysmenorrhœa, has always been one of the opprobria of gynecology, for the reason that, though in certain cases it seems to be dependent upon distinct pathological conditions, and can frequently be relieved by treatment addressed to these affections, yet in others its presence is unexplained by any appreciable local lesion, and in most cases the relief, even if attained, is apt to be imperfect or delayed. In considering any such affection, the treatment must be divided, into that from which immediate relief is expected and that which is intended to produce an ultimate cure; to the latter portion of the subject, we have nothing to add, and wish to confine ourselves in this paper to a consideration of the value of the salicylate of soda in the production of an immediate, though temporary, relief of pain. That the habitual pelvic pain of women, is perhaps the last disease in the whole list of human ailments for which opium may be freely prescribed, would probably be agreed to, by every one; and the long list of other drugs which have been successively recommended as substitutes for it, is, in itself evidence of their comparative inefficacy. Having been much dissatisfied with the action of the drugs in common use, we were very ready to accept the suggestion made to us last spring by Dr. R. W. Lovett, soon after the publication of his paper on "The Use of Salicylic Acid in Chronic Tuberculous Joint Disease," in that we should experiment with the same drug in the treatment of dysmenorrhœa, and to this end we have used the drug in all cases of menstrual pain, which have come under our observation during the last four months in the Staniford St. Dispensary for women, and the Gynecological Out-patient Department at the Boston City Hospital.

The present paper is an attempt to tabulate the results of treatment in those cases, fifteen in all, in which the menstrual pain was so severe as to be the chief symptom, and the reason for the patient's appearance at the clinic. This restriction has made the series small, but we are inclined to think that the report of a few well-marked cases in which the effect of coincident treatment could be eliminated, is of more value than a more diffuse report, of a larger number of less definite cases.

From these fifteen cases, two should be excluded on the ground that the relief may be, in part, ascribed to a general improvement due to other treatment. One of these was a case of general pelvic congestion, with an anteflexed cervix and an ill-developed uterus, the patient was packed on alternate days, and was given salicylate of soda; and the next catamenia was for the first time painless. The second, a case of stenosis of the internal os, was treated by the use of dilators, and the salicylate of soda was administered in anticipation of the catamenia, with marked relief of pain; but in neither of these cases does it seem safe to ascribe the improvement to the use of the salicylate of soda alone.

Of the remaining thirteen, three were found to have anteflexion of the cervix, three had catarrhal salpingitis, one was the subject of a membranous dysmenorrhœa, (?) and one was affected with a bad endocervicitis; making eight cases in which a cause for the existence of the pain was found. Of the others, in two the pelvic organs were thought to be normal; in two no examination was made; and in the remaining case symptoms apparently due to a cystocele and a slight prolapse of the uterus were relieved by a pessary, without effect upon the very severe dysmenorrhœa, for which no cause was found; in all, five cases in which the symptoms were unexplained.

Of the three cases of anteflexion, one was not improved, one was partly and one completely relieved; no other treatment having been employed. The three cases of salpingitis were all promptly and completely relieved so far as their dysmenorrhœa was concerned; although the improvement in the local condition was much more gradual and less marked. The case of membranous dysmenorrhœa was somewhat but not wholly relieved, by her first experiment with salicylate, which she has not had time to try again; the patient with endocervicitis said on her next visit, that she had "come round without knowing it, a great change." She continues its use, and remains well. Of the five unexplained cases, both patients with apparently normal organs were completely relieved, the case of cystocele and prolapse with dysmenorrhœa from unknown cause, was also completely relieved; of the two who were not examined, the pain was wholly controlled in one, while the other was unrelieved. This latter patient was suffering from a sharp attack of probable subacute pelvic peritonitis, and was possibly not a fit subject for the experiment, but is added to the list for the sake of fairness.

In conclusion: of the thirteen cases, nine were completely, and two, partially relieved; while in two the treatment was without effect. In two of the cases (one normal, one of salpingitis) the omission of the salicylate was followed by a return of the pain, and at the next catamenia its resumption resulted in a painless flow. The gratification expressed by the patients has been so great, and we ourselves have been so much satisfied with the use of the drug, that we have ventured to report this small series of cases, in the hope of provoking further observation of its value, and especially of the best method of administration. It was given to all our cases in ten-grain doses, t. i. d., for the week which preceded the catamenia, and continued until the time when the pain usually disappeared; but it is an open question whether the same or larger doses given during a shorter time might not have been equally or more effective. We are unable to judge whether any permanent benefit resulted, and we wish to say that we ourselves consider this report as a mere preliminary to further observation, which with a larger number of cases may, of course, largely alter the proportion of relief obtained.

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[1] Read before the Obstetrical Society of Boston, October 12, 1889.

[10] Boston Med. and Surg. Jour., cxx, p. 5.

Clinical Department.

CASE OF PANCREATIC HÆMORRHAGE.[1]

BY F. A. HARRIS, M.D., BOSTON.

Susan E——, age 35; occupation, domestic. The history of this case is, from the surroundings, necessarily meagre. This woman, who at the time was not living with her husband, had, in the forenoon of September 18th, visited the employment office of a Mrs. Pierce on Washington Street, in search of work. From the time she left there (about noon) till nearly the time of her death, nothing could be learned of her whereabouts. At about six o'clock the same day she was seen in Stillman Street, and is said to have been seen to fall once; and a discoloration about the left eye gave plausibility to the statement, but examination showed that this discoloration was the result of a blow considerably antedating the 18th. At all events, she was known to have sat down in a doorway in Stillman Street, and complained of feeling ill. Witnesses could not remember that she complained of any distinct symptom, only that she complained of feeling very ill generally. The patrolman was called; and he rang in for the patrol wagon, into which the woman was placed, and in which she died on the way to the station-house. As there was a slight smell of alcohol about the woman's breath, and as she looked as if she belonged to the class known in police circles as "rounders," the case was regarded as one of the frequent deaths from excess of alcohol in consequence of general œdema of brain and lungs in subjects who have a greater or less degree of fatty infiltration of the heart. Such, however, was not the case.

The autopsy made on the morning of the 20th, showed pancreatic hæmorrhage. The body was that of a very well-nourished woman of about thirty-five years. There was a superabundance of adipose tissue. Aside from the discoloration about the left eye, previously mentioned, and which was the result of a blow received at least three days previous to death, there was no external mark of violence. The skull, brain and membranes presented no unusual appearances. The heart was nearly empty, and the little blood therein contained was fluid. The organ itself was apparently healthy. There was no atheroma of the aorta, or other disease of blood-vessels, observed. The right lung was moderately œdematous, and both presented a faint odor of alcohol. The periphery of each lung presented, in the lower lobes, extravasations of blood into the tissue, of size varying from that of a filbert to that of an English walnut. The right lung presented three of these extravasations, and the left lung two. Otherwise nothing unusual was observed in the lungs. There was hæmorrhage into the splenic end of the pancreas; the whole of this third of the organ being infiltrated with blood, which was easily expressed on section.

There was also a small amount of blood effused into the subperitoneal tissue, extending nearly to the suprarenal capsule. The whole amount of blood was apparently not more than a drachm and a half, by estimate. In gross, the pancreas presented otherwise nothing unusual. It was not enlarged, nor were there any gross appearances of fatty degeneration, or abscess or embolic infarction. The other organs were apparently normal and healthy.

New Instruments.

A COMBINED NASAL SNARE AND ECRASEUR.

BY FRANKLIN H. HOOPER, M.D., BOSTON, MASS.

This instrument has been constructed, not from a desire to invent a new appliance or to modify an old one, but to supply a want which, on more than one occasion, I have felt painfully when operating in the nasal chambers for the removal of nasal polypi or of hypertrophied turbinated bodies.

The Jarvis écraseur is in principle an invaluable instrument. But I have found from embarrassing experience, that many of the contrivances sold in the shops are so delicately made as to be mere toys and practically useless. Only those who have had considerable operative experience in intra-nasal surgery can appreciate how very tough the hypertrophied bodies are, in some instances, and what great pressure is exerted on the wires in using the various forms of snares and écraseurs. The difficulties I have encountered in my own practice were owing to improperly made instruments. In one instance, an hypertrophied turbinated body, situated in the posterior portion of the nostril, was engaged in the wire loop. After several turns of the milled-nut it became arrested. The nut itself was so small that I had not strength enough in my fingers to turn it. There was only an apology for a cross-bar on the main canula, which I grasped by the fingers of the left hand, while I vainly endeavored to turn the nut with my right. I then took hold of the main canula with a pair of forceps, to steady it while the nut was turned with a pair of pliers. This succeeded for a few turns, when the small canula was forcibly rotated on the larger canula and so wedged that all attempts to move it were of no avail. I was then in difficulty at each end of my instrument and the situation was not a pleasant one. I finally extricated myself from my dilemma by twisting the instrument as a whole round and round, until it finally came off, thus finishing an operation which was painful to the patient and bungling and unscientific on the part of the operator. There would have been no difficulty in this case if I had had a well-made instrument. A strongly made écraseur is demanded in these cases for two reasons: first, the inherent toughness of the hypertrophied body itself; secondly (which is the more important), as the loop is gradually twisted home, certain fibres of the tissue are drawn into the end of the canula with the wires and there become firmly impacted. In one case I have had the wires cut through the distal end of the canula instead of cutting through the growth; in another instance the pressure on the wires was sufficiently great to snap off the retention pins to which they were attached on the proximal end of the small canula.

These accidents (and others which I might enumerate) happened to me several years ago; but since Messrs. Codman and Shurtleff made for me a Jarvis snare having strength where strength was required, I have had no further difficulty. This modified instrument, which I have used constantly for the past four years, has a cross or finger bar on the main canula, three centimetres long, by which it can be firmly grasped by the fingers of the left hand. The wheel by which the wire is caused to be drawn in, is two and one-half centimetres in diameter, so that it will turn comfortably. The screw-thread upon which the wheel turns is flat on one side and is made of steel, to prevent wearing, as well as the possibility of any rotation of the small canula on the larger.

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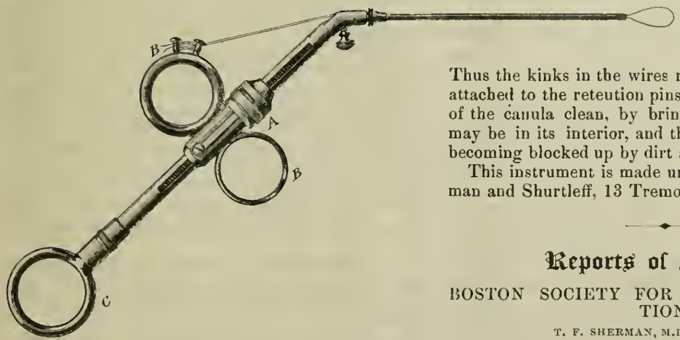
[1] Read before the Boston Society for Medical Observation, October 7, 1889.

There is another class of cases, however, for which I have found the nasal instruments, at present known to me, absolutely inadequate. I refer to cases, where in operating with one of the ordinary forms of nasal snare, the wire loop has engaged a growth so tough and so firmly attached that it cannot be cut through by traction on the wires with the fingers and where it would not be wise or even possible to forcibly pull away the growth. In such instances, I have been obliged to remove the snare, leaving the wires, which were embedded in the growth, protruding from the nostril, and then attach them to the écraseur above spoken of, and so complete the operation. This procedure,—the changing of instruments in the middle of an operation,—is, at best, an awkward one, and sometimes even impossible, especially if steel wire is used. In this case, the kinking of the wire where it has been attached to the snare, prevents its being passed into the canula of the écraseur; and if we cut off the wire above the kinks, it will be too short to be passed through the canula and wound round the retention pins. Under these circumstances I have found that the only thing to be done, after removing the instrument, is to cut one end of the wire as close to the nostril as possible, and then, by pulling on the other end, draw out the wire, of course leaving the operation uncompleted. But here again we are apt to meet an obstacle. By our manipulations in removing the instrument, the wire may become twisted in the interior of the nostril, and its removal by pulling on one end, rendered impossible. The wire must then be got off, by continually twisting it round and round until it comes away, which is very clumsy operating. On more than one occasion I have been on the point of administering ether to the patient, in order to disengage the wire.



I have thus gone into somewhat tedious detail in order to show what accidents may befall one, in operating in the nasal chambers; accidents which have led to the construction of the instrument, which it is the object of this communication to describe. This "Combined Nasal Snare and Ecraseur" has certain advantages over any nasal instrument with which I am acquainted. It is made chiefly of steel, and has strength where it should be strong. Powerful without being clumsy, it is adapted to use in any condition of the upper air-tract where the cold snare or écraseur is demanded. With it, the accidents of which I have spoken could not take place. Its chief point, however, is that, in an instant it can be changed from a snare into an écraseur. In the event, therefore, of operating on a case where there is hypertrophied tissue as well as mucous polypi, if a mass of tough tissue is inadvertently engaged in the loop which is too adherent to be pulled off, the instrument may be converted into an écraseur and the operation completed neatly and quickly. It will also greatly facilitate the removal of posterior hypertrophies, inasmuch as the instrument has the proper nasal angle, and because the mass of tissue can first be caught by the snare, and then cut through by means of the écraseur.

The accompanying illustration represents the *half-size* and shows so clearly the simple manner in which a snare and écraseur can be combined in one instrument, that but a few words are needed to describe its mechanical working.

When the collar A is to the left, the rings BB may be freely moved up or drawn down, as in the ordinary nasal snares. On turning the collar A to the right, the screw-thread of the instrument becomes engaged, and the result is a perfect écraseur, the rings BB with the wire attached moving downward only as the screw is operated by turning the ring C. Canulæ of different lengths and curves may be substituted for the straight one for operations in the naso or lower pharynx or larynx.

With regard to the use and care of this instrument only a few words need be said, which, while they may seem elementary, are not without their practical value. In attaching the wires to the retention pins on the ring B, they are not to be wound separately around each pin, but should be wound together around both pins in a figure-of-8 manner. After using the instrument the wires should invariably be removed, not as would be the most natural manner, by pulling them out towards the operator, but in the opposite direction. Thus the kinks in the wires resulting from their being attached to the retention pins, tend to keep the interior of the canula clean, by bringing out any débris that may be in its interior, and the danger of the canula becoming blocked up by dirt and rust will be lessened.

This instrument is made under my direction by Codman and Shurtleff, 13 Tremont Street, Boston.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

Regular meeting, held Monday evening, October 7th, at 19 Boylston Place, Dr. B. Joy Jeffries in the chair.

Dr. R. H. Fitz presented a consideration of the anatomical evidence explanatory of the method of origin of

ACUTE INFLAMMATION OF THE PANCREAS, ITS SYMPTOMS AND RESULTS.

His remarks were illustrated by specimens and microscopal preparations.

DR. F. A. HARRIS read the report of

A CASE OF HÆMORRHAGE INTO THE PANCREAS,[1]

upon which he had made a medico-legal autopsy.

DR. W. F. WHITNEY said: I think the profession, as a whole, owes a large debt of gratitude to Dr. Fitz for his treatment of this subject. Personally I have seen a good number of these cases, but until Dr. Fitz sifted them out in the order in which they should go, they were certainly a very blind series of cases. What relation the cases of suppuration or fat necrosis had to the hæmorrhage into the pancreas, and the relation of the latter to the acute pancreatitis, I do not think has ever been known so well before. Of course, Dr. Fitz has been fortunate in having rather a large supply of cases to work up, but until he sorted them out in this way they were, as I say, a very blind series.

DR. JOHN W. ELLIOT: I should like to ask what Dr. Fitz's explanation would be of the rapid death in the case Dr. Harris reported.

DR. R. H. FITZ: There is no other explanation which is in any way plausible except the one which is somewhat physiological. The idea is that death occurs in these instances from shock. In connection with the medical examination of cases of sudden death it is found that this hæmorrhage is the only conspicuous lesion. The rational explanation is that the hæmorrhage, occurring in that vicinity, produced either a paralysis or irritation of the cœliac plexus, so that the individual died from cardiac failure, as the frog dies in the experiments, when struck in the abdomen. Death is then attributed to cardiac paralysis. That is, so far as our present knowledge goes, the only explanation of any suggestive value in connection with the sudden death. The hæmorrhage is, in a certain number of cases, in the immediate vicinity of the ganglion; but it is quite possible that the effect may be due to a simple reflex process, without involving directly the ganglion cells. In the cases of hæmorrhagic pancreatitis, and gangrenous pancreatitis, the longer they live the more the evidences of septicæmia which occur.

DR. ABNER POST read a paper on

SOME CONSIDERATIONS RELATING TO SYPHILIS AND MARRIAGE.[2]

DR. FRANCIS MINOT: I should like to report a case. It has a double interest, in view of the very interesting paper we have just listened to. In the year 1867, if I recollect aright, a gentleman who had been recently married, and who had been an officer in the army during the Civil War, came to me for an abrasion with a slight crust upon it, upon the lower lip. Further investigation showed that he had a similar abrasion, with a little whitish crust, upon the prepuce. He told me, in answer to my questioning, that during his stay in the army he had contracted a chancre, and that the surgeon of the regiment had treated him; that all the local symptoms had disappeared; that he was assured by the surgeon that he was entirely cured and need give himself no apprehension whatever as to the consequence. Under this impression he married. Not long after his marriage (his lip being affected both at the time of his marriage and afterward, when I saw him), his wife had a similar appearance upon her upper lip. Following that was a series of symptoms, of which the principal were mucous patches upon the tongue and in the throat, loss of hair and eyebrows, and nasal intonations of the voice. The woman was at that time under the care of a female practitioner, and at that date we all know that there were none of any repute whatever in this city. The wife was a woman of a peculiar mental temperament, having great faith in the doctor, and it was impossible to treat her at first. At the earnest solicitation of her husband she consented for awhile to be under treatment, but she would continually revert to the female doctor, who had not the least suspicion of what the disease was, any more than the woman herself. She continued to grow worse, and very much to my horror, I found after a time that she was pregnant. After a very considerable length of time, she growing worse in every respect, she consented to place herself under my treatment, and follow out a proper course of medication. She was treated, if I recollect now, with mercurial inunctions and iodide of potassium: the husband was also subjected to the same treatment.

I was astonished at the rapidity with which she was cured, apparently. The symptoms disappeared; the voice returned; the nasal catarrh ceased; the lip healed up; the mouth became sound, and she was perfectly well. The husband also improved under treatment, and all his symptoms disappeared. In due time the woman was confined. The child appeared perfectly healthy at birth, and from that time up to the present, so far as I know, she has never had the slightest manifestation of any venereal disease. A second daughter was born two or three years after the first and is living at the present time, and so far as I know has never had any syphilitic symptoms.

DR. H. F. VICKERY: There is one question I would like Dr. Post to answer, and that seems to me a practical one — one that I have been asked about. Granted that a man who has had syphilis, has married and his wife has become pregnant, in what cases would he treat the mother previous to the birth of the child, if at all, and how?

DR. POST: I think the case that Dr Minot has just cited is a case in point. I believe every syphilitic woman who is pregnant — that is, very freshly syphilitic, I mean — should be treated, and thoroughly treated, both for her own sake, and for the sake of the infant. It is sometimes alleged that the mercurial treatment in a pregnant woman is apt to produce abortion; that is just as false as that certain other symptoms produced by syphilis are produced by mercury. The safety for the woman and child lies in thorough treatment.

DR. VICKERY: But supposing there is no reason to suppose she is syphilitic, would you treat her on general principles, the husband being known to have been syphilitic?

DR. POST: If the husband's syphilis was at all recent I should be rather inclined to put the woman on a mild course of mercurial, but that is one of those questions that cannot be categorically answered.

— A recent number of the *British Medical Journal* records, as having happened within five days of each other, a fracture of a thigh and of a spine, as the result of football. In the latter case the coroner's jury returned a verdict of "accidental death."

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[1] See page 606 of the Journal.

[2] See page 603 of the Journal.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting October 12, 1889.

The first paper was by Dr. Edward Reynolds and Dr. George Haven on

THE VALUE OF SALICYLATE OF SODA IN DYSMENORRHŒA, WITH CASES.[1]

Dr. Edward Reynolds in reply to a question as to the theory of the action of this drug, said that they had used it entirely empirically as did Dr. Lovett in cases of hip disease. It is possible that some of the cases were due to a rheumatic diathesis, although they had made no inquiry into this.

Dr. Sinclair had used the drug in pelvic neuralgias as well as in neuralgias of other parts of the body, but had never used it in dysmenorrhœa, and he considered this addition of great value, if, by its use we can banish the use of alcohol and morphia in these cases.

Dr. Ingalls: In 1869 I reported three cases of dysmenorrhœa treated successfully by a mixture in which the ingredients, resin of guaiacum and corrosive sublimate were the acting agents; and in the majority of cases which have come under my care since that time I have prescribed the same, with the result of emphatic relief for about seven in ten cases ($7\frac{1}{4}$ in 10).

Relief is not cure. Many cases slip out of observation after two or three months, but I can record eleven as having been questioned on the subject within the past year whose reports were highly gratifying. Seven of these were unmarried.

℞	(1) Resin of guaiacum	℥ i.
	(2) Canada balsam	℥ i.
	(3) Oil of sassafras	ʒ i.
	(4) Corrosive sublimate	℈ i.
	(5) Alcohol	℥ viii.

M. Dissolve 1 and 2 in half the alcohol, and 4 in the other half.

Digest for fourteen days. Pour off the clear liquor: mix the two liquors and the oil.

In 328 drops there is one grain of corrosive sublimate, beginning with five drops twenty days before menstruation, thrice daily for three days; ten drops thrice daily for three days, and so on, so that about thirty drops are taken through the first day of menstruation.

Several remedies which have been proposed in various ways, legitimate and others, have been tried, but have been laid aside. I am glad to know from the reader, the efficacy of so well-known a remedy for so painful and harassing a complaint as the one under consideration, and I shall be very glad to prescribe it, and if the opportunity offers, will report.

My prescription is best taken by being dropped on lumps of sugar. The resinous quality causes adherence to the glass.

Dr. Strong was much interested in these cases, as the conditions of the pelvic contents was tabulated at the same time with the cases. He had himself used salicylate of soda largely for dysmenorrhœa as well as for other pelvic pains, and thinks there is no remedy to compare with it. He had wondered whether it might not act by relieving the congestion at these times. In the severe pain of acute salpingitis he had found it of great value.

His method of administration was to give fifteen grains every hour for three doses, which was generally sufficient for the day or even for the entire period. If not, he repeated the dose until he obtained the physiological effect of the drug.

He had found that the patients were often able to abandon its use for a certain length of time. Any local cause was if possible removed. Many, however, were obliged to keep the drug by them and resort to it occasionally. In the case of young unmarried women he thought it particularly valuable, where there was often slight antiflexion of the cervix or prolapse which became congested during the menstrual period. In these cases by relieving the pain with the salicylate the strength may be built up and the use of the drug will be then unnecessary.

He had had a large proportion of successful cases treated in this way and thought that the drug acted with more certainty on pelvic than on other pains.

Dr. Haven spoke particularly of one of the cases in the series; a young girl of nineteen years who had always suffered during the catamenia since the age of fifteen. The first time the drug was used last summer, she escaped the pain and has twice reported favorably since then.

Dr. Davenport had not used the drug in these cases and had had only fair results in the use of other drugs.

Dr. Boardman spoke of the use of the valerianate of zinc and Dr. J. Stedman, of that of the bromide of ammonium in these cases.

Dr. C. E. Stedman reported

A CASE OF INDUCED LABOR ON ACCOUNT OF ALBUMINURIA.

A primipara of fine figure and perfect health, due October 20th. Sudden œdema of face September 4th, with usual amount of swelling in feet, etc., no other symptoms except albumen and casts. Did very well under laxative pill, good appetite and sleep.

September 25th, sudden œdema of vulva in threefold tumefaction. Each labium the size of fist, very tense and painful, the medium swelling proving to be the enormously distended left nympha. These tumors having been pricked with fine cambric needles, drained off so fast as to penetrate the mattress. They, however, refilled. Urine nearly three pints daily.

On October 1st she had a faint turn and nearly fell; on the 2d, for an hour could see only half the nurse, and amount of urine somewhat decreased. Dr. Stedman determined to induce labor, strengthened by telephone consultation with Dr. W. L. Richardson. Evening of October 2d introduced bougie which had to be done under ether on account of painful condition of external parts and their swelling made it no easy task. No pains, but sweet sleep all night. October 3d, 10 o'clock, pains irregular but some of them violent and continued all day, expelling the bougie and having no effect on cervix, and they finally died away to begin again on the 4th, on evening of which day introduced another bougie, but the pains were obviously not those of labor, and at 2.30 on the 5th, he began to dilate the os manually, having the aid of Dr. W. P. Bolles. In $13\frac{1}{2}$ minutes the cervix (which was $\frac{1}{2}$ inch long and soft) admitted the closed fist. Then Dr. Bolles fixing the head above the brim, the long forceps was applied. Vigorous traction had no effect and Dr. Bolles affixed Reynold's tractors and the head moved at once. The child, a 5 lb. girl, was delivered at 3.40 P. M. alive. The placenta followed readily. There was a split in the anterior aspect of the cervix, none in the perineum. Patient rallied quickly from the ether. Twelve ounces urine drawn after delivery and found by Dr. Crowell to be largely albuminous with "casts, hyaline of large and small diameter and granular of a large size, fibrinous and waxy casts." 17 hours after delivery twenty-four ounces, only a trace of albumen, casts greatly diminished in number. On the 6th she passed seven pints two ounces, on the 7th, 142 ounces in which but a trace of albumen now remained and no casts. On the 8th, 190 ounces. After this the amount increased and the patient recovered without one bad symptom.

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[1] See page 605 of the Journal.

The points of interest seemed to be the failure of the bougie to do its work, and the polyuria which coincided with the rapid disappearance of the casts and albumen.

Dr. Edward Reynolds thought that the failure to bring on labor by the use of bougies was not unusual and that in at least half of the cases, failure occurred. He recalled one case at the Lying-in Hospital, where incision of the os was required, owing to the spasmodic contraction caused, it was thought, by the use of the bougie. The same occurred to a more marked degree in a case reported by himself to the Society last year, and therefore, in future he would not persist in the use of a bougie if it did not at once bring on labor.

Dr. Green had comparatively little confidence in bougies and certainly not where there was any hurry. In these cases the finger, he considered, the safest and best.

Dr. Sinclair never used a bougie where it was necessary to induce labor, but always, since 1858 used the finger, than which there was no more perfect instrument, or one which so easily accomplishes the purpose.

Dr. Townsend read

AN ANALYSIS OF THE CASES OF LABOR IN THE OUT-PATIENT DEPARTMENT OF THE BOSTON LYING-IN HOSPITAL, AND OF THE BOSTON DISPENSARY, IN THE YEAR 1888.[2]

Dr. Green said that when we consider that these cases were attended by some seventy-five different students in all, we can point with considerable pride to the freedom from septicæmia; and as this freedom occurred in crowded tenement houses where there were no antiseptic pads and sheets, it simply showed great antiseptic care in the fingers and instruments of the attendants. In this lies the essence of antiseptic treatment. If students under unfavorable conditions can work with such good results, we certainly should be able to obtain as good results in private practice.

Dr. J. P. Reynolds, commenting on the cases delivered by axis traction, spoke of the great value of this principle and the undoubted fact that many children were saved by it which would formerly have been lost.

Dr. Cotting mentioned cases of what was formerly always called puerperal fever, now so generally spoken of as puerperal septicæmia, and had seen, it seemed to him, two very distinct epidemics of this disease.

Rounder. — "Bondley's wife is going abroad I'm told."

Giltedge. — "She's going to Italy for her lungs."

Rounder. — "Is that so! American lungs ain't good enough for her, are they?" — *Lowell Mail.*

NEW YORK NEUROLOGICAL SOCIETY.

Meetings of November 5th and December 3d, 1889, Dr. George W. Jacoby, President, in the chair.

In March, 1887, a Commission — consisting of Dr. E. C. Seguin, *Chairman;* Dr. M. A. Starr, *Secretary,* and Dr. W. R. Birdsall; together with two ophthalmologists, Drs. W. O. Moore and David Webster; and two other gentlemen nominated by Dr. Stevens, namely, Drs. C. L. Dana and Frank P. Foster — was appointed by the Society to investigate, in conjunction with Dr. G. T. Stevens, the treatment of ocular irritations as a therapeutic measure in certain neuroses. This Commission presented its report on the

TREATMENT OF EPILEPSY AND CHOREA BY THE CORRECTION OF OCULAR DEFECTS,

in November, the discussion being concluded at the December meeting. Immediately preceding the reading of the report the following protest was presented by Dr. G. T. Stevens:

"I respectfully protest against the reception of the report now announced, for the reasons: (1) That the Commission having failed to perform the part of the agreement upon which the report is to be founded, the report is not now in good order; (2) Because the report is not a report on the proposition; (3) Because the report is inconsistent with the facts and is misleading; and (4) Because it is an ex-parte report and objectionable in spirit and motive."

The President then called for the report of the Commission which was read by its Chairman, Dr. E. C. Seguin. The more important features of this report were as follows: After a plan of proceedings had been agreed upon between the Commission and Dr. Stevens, the members began to send patients to the latter in April, 1887.

Each patient was examined by two neurologists, who agreed upon the diagnosis and compiled a history of the case. The patient was then sent with the history to Dr. Stevens who examined the ocular conditions. Subsequently, the ophthalmologists of the Commission examined the eyes, and reported their results to the Secretary, who added these notes to the copy of the history in his possession. When an operation was undertaken, notice of it was sent by Dr. Stevens to the Secretary, and he, in turn, notified the ophthalmological members, and also the neurologist who had furnished the patient. These members then attended the operation and noticed the conditions found in the eye before and after it, sending their records to the Secretary. Their non-attendance, however, did not prevent operations from being done, and the records of these operations, as well as records regarding prisms and glasses prescribed by Dr. Stevens for the patient, the Commission had been unable to obtain from him.

The patients from time to time visited the members of the Commission by whom they were sent to Dr. Stevens, and notes of the conditions found were made and sent to the Secretary. In the cases of epilepsy the record of attacks had not in all cases been kept in duplicate, Dr. Stevens having the records on the blanks furnished by the Commission, and in these cases the records had not been accessible.

The total number of patients examined by the Commission and sent to Dr. Stevens for examination was twenty-eight, twenty-five epileptics and five cases of chronic chorea. All were found to have ocular insufficiencies; five were withdrawn without any treatment; three, a month after examination; one, two months after; one, three months after; two, four months after; one, five months after.

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[2] See page 603 of the Journal.

The reasons for withdrawal were as follows: Five were unable to attend regularly. Two were declined by Dr. Stevens on the ground of organic disease. Five were withdrawn by mutual consent of member sending case and Dr. Stevens for satisfactory reasons, such as non-attendance. Three were discontented because of increased symptoms.

Hence of the twenty-eight cases there were only fourteen who were treated for four months or over, and these were the only ones available for conclusions. These cases were tabulated as follows, showing the duration of treatment, the date at which the patient was sent to Dr. Stevens, the date of the last report of the condition of the patient and a statement of the apparent result of treatment:

Case.	Duration of treatment.	Date of first visit.	Date of last report.	RESULT.
Chorea......	30 months.	April, '87.	Oct., '89.	Much improved.
Epilepsy....	30 "	" '87.	" '89.	Not improved.
Epilepsy....	5 "	May, '87.	" '87.	Improved.
Chorea......	29 "	" '87.	" '89.	Slightly improved.
Epilepsy....	21 "	Jan., '88.	" '89.	Not improved.
Epilepsy....	4 "	Mch., '88.	July, '88.	Unknown.
Chorea......	8 "	" '88.	Nov., '88.	Not improved.
Epilepsy....	12 "	" '88.	Mch., '89.	Improved.
Epilepsy....	5 "	April, '88.	Sept., '88.	Not improved.
Chorea......	18 "	May, '88.	Oct., '39.	Not improved.
Chorea......	10 "	July, '88.	May, '89.	Improved.
Epilepsy....	6 "	April, '89.	Oct., '89.	Slightly improved.
Epilepsy....	5 "	May, '89.	" '89.	Not improved.
Epilepsy....	5 "	" '89.	" '89.	Not improved.

The results could then be summarized thus:

Chorea, cured, none; much improved, 1; improved, 2; unimproved, 2; unknown, none — total, 5. Epilepsy, cured, none; much improved, none; improved, 3; unimproved, 5; unknown, 1 — total, 9.

Some analysis of the results were necessary. It was evident that six cases were put down as improved. Of these, three had been presented to the Commission by Dr. Stevens from his private practice, and no exact data had been obtained regarding them. This was especially to be regretted as the exact degree of improvement could not be ascertained. In the other three reported as improved, the first improvement began in one after thirty weeks, and the patient had never been entirely free from chorea for one month; she had at times been better under the ocular treatment, at times worse, even now having choreic movements, usually before menstruation. In another the chorea was only slightly less than at the outset. The sixth case, an epileptic, was having about the same number of attacks as she had had under bromide treatment, but far less than when she had no treatment whatever.

As regards those not improved, many of the patients would say they felt better in spite of the written records proving the increased frequency of the attacks. This was in part due to increased hope and confidence in the success of the treatment and also to the freedom from depression of mind and bodily functions produced formerly by the use of bromides. Others had complained much of headache and vertigo which had appeared during the treatment, and in several a condition of diplopia had been produced and now remained. A few of the patients had been made exceedingly miserable by the great increase in frequency and severity in the attacks; which had finally necessitated an abandonment of the ocular treatment and a return to drugs. This statement applied to a number of cases which had been withdrawn.

It should be noticed that none of the cases having been cured, all remained indefinitely under treatment, a perfect permanent ocular equilibrium not having been secured in any case. If it were impossible to secure such equilibrium, a cure could not be expected, granting the theory of Dr. Stevens. If it were possible to secure such equilibrium it was to be supposed that it could be secured in at least two years; yet four of these cases had been under constant treatment for two and one-half years without this result.

The following paragraph in the report represents the final conclusions of the committee:

"In view of these facts your committee cannot but express the opinion that as far as this investigation has warranted a conclusion, the method of Dr. Stevens does not afford a sufficient degree of relief to patients suffering from chorea and epilepsy to warrant its adoption or recommendation to the members of the Neurological Society as a means of cure or as the sole therapeutic measure."

Dr. Stevens then read a reply to the report of the Commission of which only the outline can be produced here. He said that whatever might have been the original condition of the majority of the cases sent to him during the first year, it was certain that they had long ceased to be cases of functional disease. While as a matter of fact, every one of these unfortunates belonged to the class of incurables by any of the ordinary methods of treatment, and while they had grown worse under such treatment continued during many years, they had in every instance under the present mode of treatment materially improved in health and in respect to the special diseases for which they were treated. All this improvement had been brought about without recourse to the deadening results of bromides or the toxic effects of enormous doses of arsenic. The following is a summary of the salient features of Dr. Stevens's reply:

"From the beginning, the Commission entered upon its work in a manner entirely inconsistent with the true spirit of inquiry. It pursued it in a manner calculated to induce vexation, misunderstanding and controversy. It occupied many months in securing a few cases and has never yet complied with its own stipulations. It has through more than two years occupied itself in selecting the most unfavorable cases for treatment and has taken the favorable cases to itself. The spirit of the report is calculated to produce prejudice and tends to mislead. The report is now made in violation of every principle of right or fairness. The report is represented as an investigation of two diseases and not of a principle, in direct violation of the pledges of the Commission. The Commission has repeatedly sent cases well known to be unsuitable for the inquiry and has, contrary to the articles of agreement and contrary to the private promises of members, in this report paraded these cases in long detail with the effect of misleading the judgment of those who are unacquainted with the facts. It has reported the results of treatment of the cases by minimizing the importance of the malady at the beginning of treatment and by magnifying all the unfavorable conditions now existing. The results represented are not in conformity with the actual facts, but are grossly at variance with them. It has reported as resulting from treatment unfavorable ocular conditions which do not exist, and has in this respect made mistakes, which, by ordinary care, should have been avoided."

Dr. Hammond had seen eight of the cases described in company with Drs. Weir, Webster, Ranney and Amidon the day defore the meeting. The patients and their friends all admitted that the cases had been improved very much by Dr. Stevens's treatment, a fact which was at great variance with the statements made by the same patients to the Commission.

Dr. Seguin said that part of Dr. Stevens's remarks which reflected upon the fairness and integrity of the Commission needed no reply, the names of the members of the Commission being a sufficient answer. Dr. Stevens's statements as to the evil effects of the arsenical treatment of chorea, and of the bromides in epilepsy, appeared to pander to popular prejudice, and were altogether unwarranted by fact. Some clinical experience and knowledge of practical therapeutics would have prevented such expressions. Arsenic was almost never harmful to choreic patients, and the evils of bromism could be prevented and corrected by watchful management and appropriate associated treatment.

It was true that the Commission had had the greatest difficulty in inducing patients to undergo the treatment, but their failure to obtain twelve cases within the first few weeks was not through neglect or violation of the agreement. It was simply an impossibility to supply the necessary material in a given time: enough had been furnished in all. Dr. Stevens, in not furnishing data as to the course and progress of the cases as stipulated in the agreement, had violated the compact. The report had no personal animus and was not made up of the ideas of any one or two members. It expressed the opinions of all of the members of the Commission, even of those selected by Dr. Stevens himself.

As regarded the statements of friends and relatives in medical investigations, these should be received with scientific doubt, particularly when they differed from the facts as shown by the Commission.

As far as his own cases were concerned, one had been nearly killed by the ocular treatment involving the omission of bromides, passing into a status epilepticus, but improved again under bromides. Another had been under ocular treatment for fifty-two weeks before improvement became marked. Another, the girl with chorea, showed no tangible improvement until after the lapse of seven months. His own experience in cases of chronic chorea, even when of five to seven years' duration, was that they were not merely improved very soon under arsenical treatment with rest in bed, but as a rule, cured in from two to three months. This girl, though improved under the ocular treatment, had now transient diplopia for far and near, while the second case alluded to, saw double at the present time on looking to the right. The improvement in these (which were the best of the series) could not, therefore, be ascribed to the ocular treatment, but was to be attributed to improved health and time. Dr. Stevens had reported fifty per cent. of cures of epilepsy in his own (former) series of cases, but in the cases examined by the Commission there was not one. Moreover, he had reported his cures as taking place in a few weeks after beginning the ocular treatment, while in these cases where improvement of any kind had taken place, many months had been required before decided change had been manifested.

Dr. Starr, in regard to the remarks made by Dr. Hammond, referred to the records of the cases already read to the Society, which demonstrated in each case an increase in the number of attacks, in some of them to three times as many as formerly. It was well known that the statements of epileptics were unreliable concerning their own seizures, and in several of cases it was evident from their own records of their attacks that any statements they had made that they were better were in direct opposition to the real facts. The recollections of such patients regarding their past states could not be considered as at all comparable with the actual observations taken during such periods.

In one case pronounced by Dr. Webster as normal ophthalmologically, and in every respect a purely functional case, Dr. Stevens claimed to have found optic atrophy and called it an organic disease.

Dr. Birdsall had seen an epileptic, one of the cases mentioned by Dr. Hammond as having reported improvement to him, and whose sister corroborated the patient's statement. He had asked the sister why she had made this statement. She had replied that she did not refer to the number of fits, which was unchanged but meant that the patient seemed to be brighter without the bromides. The record showed, however, that the number of attacks had increased, and that the patient was in reality much worse under Dr. Stevens's treatment.

Dr. Dana said he had been appointed on the Commission by Dr. Stevens himself, and felt that he represented him in a measure, but naturally his chief object had been to obtain the exact truth in the matter. He had sent twelve cases of his own to Dr. Stevens, and had tried hard to get others to go; but he had seen no case much improved under Dr. Stevens's treatment. One case seemed to be improved, but he could not feel sure that improvement was due to the ocular treatment. He had lost most of his faith in it as a therapeutic measure. We ought, however, to pay some tribute to Dr. Stevens for perfecting the technique in his procedures, even though he had pushed his theory to extravagant conclusions.

Dr. Stevens said that when the investigation was commenced, cases were accepted by the Commission which ought never to have been taken. One was a pronouncedly organic case, and in fact, not one of the cases was functional.

Dr. Webster stated that the diplopia now existing in one of Dr. Seguin's cases did not amount to much. It was trivial. He had seen Dr. Stevens operate many times, and had learned very much from him as to the technique in the treatment of insufficiencies. Dr. Stevens had, moreover, greatly improved the nomenclature in this direction. Not being a neurologist, he did not feel able to judge of the therapeutic effects of the operations in these cases.

Dr. Stevens said that the operative technique was exceedingly delicate and difficult, and that the greatest skill was required, such that he did not claim yet to have himself attained; but the more skilful the operator becomes, the more valuable will prove to be this therapeutic measure.

Dr. L. C. Gray, had listened with interest to the report and its discussion, and was wholly unprejudiced on either side. He did not believe that Dr. Stevens had substantiated his serious charges against the Commission, or caused any particular improvement in the cases. Esquirol showed in 1828, that temporary improvement took place in all cases of chronic epilepsy in La Salpetrière, when treated by drugs known at that day. A decrease of from six to three fits daily could not be considered a permanent improvement, because such decrease was often spontaneous, and in some cases fits spontaneously ceased for years. He agreed with Dr. Seguin that where improvement did not begin before fifty-two weeks after treatment had been begun, any improvement that might take place could not fairly be ascribed to the measure employed. If Dr. Stevens had claimed merely that headaches and other trivial neuroses had been relieved by his method, many of the gentlemen present would have coincided with him, but he had undertaken too much, and was extreme in his claims. The same therapeutical principle underlay his system as that of Sayre, who cut prepuces, and that of the English surgeon who amputated clitorides for the cure of the slighter neuroses.

Dr. Amidon said that he had been invited with a number of others by Dr. Ranney to see the cases described at Dr. Stevens's office, and they had the complete histories of the cases at the time upon which to form an opinion. He intended to oppose the acceptance of the report of the Commission, for it was clearly apparent that Dr. Stevens had brought about some improvement in these patients without resort to medication, which was more than any of us could do.

Dr. Seguin said with reference to the work done by Dr Stevens, all of the members of the Commission had appreciated it highly, and felt like adding something commendatory of his skill to the report, but refrained from so doing because, under the circumstances, it might have appeared hypocritical, and was really alien to the subject assigned to the Commission, namely, the determination of results.

Dr. J. L. Corning thought that Dr. Dana's tribute to the good work done by Dr. Stevens was in exceedingly good taste. Dr. Stevens's work was unusually scientific and original, and there seemed to be very little of that sort of work done in New York, where compilation and the importation of foreign ideas were the order of the day. Hence this discovery of Dr. Stevens ought to meet with wide recognition.

A motion to adopt the report of the Commission was then carried by a vote of five to four out of the eighteen members present, the members of the Commission refraining from casting their votes.

The following motion made by Dr. Amidon was unanimously carried:

"That the thanks of the Society be extended to Dr. Stevens, for the assiduous labor he has devoted to the work of the Commission, and that the Society assure Dr. Stevens that it highly appreciates the ingenuity and technical skill he has shown in the prosecution of his method."

(Report, giving other proceedings of the Society, to be continued.)

— Dr. Balmanno Squire, of London, notes in the *British Medical Journal* (November 30th) his success in the treatment of diabetes by phosphorus, applied for eczema in a glycosuric subject. The dose at first is one-tenth of a grain, increased to one-fifth of a grain three times daily.

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TREATMENT OF EPILEPSY AND CHOREA BY THE CORRECTION OF OCULAR DEFECTS.

At the last two meetings of the New York Neurological Society, there was presented and discussed a report on the "Treatment of Epilepsy and Chorea by the Correction of Ocular Defects." This report emanated from a Commission appointed by the Society in March, 1887, to investigate, in conjunction with Dr. G. T. Stevens, the "treatment of ocular irritations as a therapeutic measure in certain neuroses." The Commission consisted of three neurologists and two ophthalmologists, to whom were added two other gentlemen nominated by Dr. Stevens himself. The report, which it will be noticed covers a period of two years and a half, may be found in full with the discussion in another part of this issue of the Journal. It is a subject of considerable general interest, on account of the extraordinary claims previously made as to the results obtained by the treatment of ocular irritations in a great number and variety of nervous derangements (Dr. Stevens reported fifty per cent. of *cures* of epilepsy in a former series of cases of his own); and the report and discussion are worthy the perusal of the general practitioner no less than of the specialist. We therefore desire to direct especial attention to them.

Before its reading, Dr. Stevens protested against the report; but his protest is robbed of its force when we observe not only that the report is unanimous, but that his own nominees — only one of the two apparently being present at the meeting when the report was discussed — both accept the conclusions reached. Apart from this, however, the impartial mind can scarcely fail to be influenced by the weight of the names of the other members of the Commission.

Of twenty-eight cases of chorea and epilepsy under investigation, only fourteen were treated for four months or over; and these were the only ones considered by the Commission as available for conclusions. In summing up the statements made in regard to these cases, the report says: "It should be noticed that none of the cases having been cured, all remained indefinitely under treatment, a perfect permanent ocular equilibrium not having been secured in any case. If it were impossible to secure such equilibrium, a cure could not be expected, granting the theory of Dr. Stevens. If it were possible to secure such equilibrium, it was to be supposed that it could be secured in at least two years; yet four of these cases had been under constant treatment for at least two years and a half without this result."

In view of these facts, the Committee embody the final conculsions reached in the following paragraph:

"We cannot but express the opinion that, as far as this investigation has warranted a conclusion, the method of Dr. Stevens does not afford a sufficient degree of relief to patients suffering from chorea and epilepsy to warrant its adoption or recommendation to the members of the Neurological Society as a means of cure or as the sole therapeutic measure."

In justice to Dr. Stevens, it should also be stated that the Neurological Society passed a vote assuring him of its high appreciation of the ingenuity and technical skill he has shown in the prosecution of his method. Moreover, it should be borne in mind that the report we refer to confines itself strictly to the consideration of the two neuroses, epilepsy and chorea. It is still possible that partial tenotomies may be of great advantage in a certain class of neurasthenics, though we are inclined to think that this class the unprejudiced ophthalmologist will find to be quite limited in numbers, as shown by the experience of Dr. Myles Standish, who, after reporting five cases, says: "I have been industriously looking for such cases for three years among all the clinical material at my command, and have only found three cases in addition to those reported. These three cases all refused operation. It is probable that such cases may be more numerous in neurological than ophthalmological clinics."[1]

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SOCIAL AND SANITARY STATISTICS.[1]

In his second Cartwright lecture, Dr. Billings treats quite exhaustively the "expectation of life," probability of life, mean age at death, average duration of life (the *vie moyenne* of Bertillon) and the difficulty in the way of getting exact statistics as a basis of calculations for life insurance, as well as the fallacies in many life-tables.

The sickness-rate, often so much more important to the health-officer than the death-rate, has thus far been exact only in selected bodies, such as sailors, soldiers, the police, railroad employés, beneficiaries from sickness in certain societies, inmates of reformatory, penal and educational institutions, etc., and only for a limited number of selected classes at selected ages. The United States census schedules, for 1880, at first deemed too imperfect for compilation, were, after re-examination, found to give probably a fair representation of certain facts, including the proportion of illness in males and females in June of that year. The compilation showed that for the total population over fifteen years of age, the number found sick out of every 1,000 living varied from 7.17 to 22.7 for males, and from 8.1 to 17.5 for females, or about 1½ per cent. of males to 1⅓ per cent. of females at a time of the year when there is probably the least amount of sickness among adults. The proportion of sick to 1,000 of population of different ages was as follows:

	Males.	Females.
15 to 25 years of age	6.9	6.8
25 to 35 " "	8.6	9.7
35 to 45 " "	12.2	11.5
45 to 55 " "	16.8	14.4
55 to 65 " "	25.5	20.4
65 " " and over . . .	44.5	35.3

This corresponds, in a general way, with Mr. Finlayson's statistics with regard to the amount of sickness in members of friendly societies. He found that from the age of fifteen to eighty-five, an average of five years of sickness occurs to each man, but that during the period of labor, from the age of sixteen to sixty-six, there are about a week and a half of sickness to each year, the sickness from forty-two to sixty-six being almost double that of the first half of the period, or sixteen to forty-one, inclusive.

The voluntary collection of sickness-statistics on the part of physicians has thus far been only tentative and very incomplete. The recent laws requiring compulsory notification of infectious diseases will be of value for those diseases, but their success, Dr. Billings thinks, will depend upon two conditions: first, that the health-officer shall not be in any way engaged in, or connected with, private practice, so as to do away with all reluctance on the part of general practitioners reporting their private cases; secondly, that, to obtain any benefit from notification, special hospital accommodations for such forms of disease as are reported must be provided by the community; and there must be power of compulsory removal of patients to such hospitals in certain cases.

In attempting to estimate the influence of modern civilization upon the average duration of human life, or, for instance, the difference between the expectation of life in New York at the present day, and that in European cities from one to twenty centuries ago, Dr. Billings admits that the statistical records are very incomplete, vague and unsatisfactory. He agrees with the general conclusion that there has been a very great increase in the average longevity of man in civilized countries, not only within the last thousand years, but within the last century. But, it is only for the last forty or fifty years that we can speak with anything like scientific precision as to the amount of progress made. As regards the greatest duration of life possible in an individual, there is no evidence of any change in, at least, the last two thousand years. The evidence is sufficient, however, to prove that there has been an increase in the average longevity and expectation of life at birth; but whether this fact be due to the preservation of more infant-lives for a few years, although they may still die before the productive period is reached, or to an increase of the number of those who live into and share the working period of life, is still uncertain.

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[1] The second Cartwright lecture, 1889, J. S. Billings, M.D., U. S. A.

[1] Paper read before the American Ophthalmological Society, July, 1889. Boston Med. and Surg. Jour., vol. cxxi, p. 250.

The questions so important in our Southern States, whether the alleged great comparative increase in the negro and mixed population is real or dependent upon inaccuracies in the census of 1870, and whether their very high death-rate, as compared with the whites, indicates a greater mortality under the same or similar conditions, Dr. Billings feels compelled to reserve for decision until the results of the census of 1890 are reached.

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NEURASTHENIA AND DILATATION OF THE STOMACH.

Carron de la Carrière has published in the *Bulletins et Memoires de la Société de Médécine Pratique* an article of considerable interest on the subject of "Neurasthenia and Dilatation of the Stomach." He describes an aggregate of symptoms often associated with dilatation of the stomach, symptoms which have been sufficiently familiar under the name of nervous dyspepsia. There is a sensation of weight and distention of the stomach after meals; this is accompanied by flushing of the face, and a tendency to somnolence. These patients are apathetic, and seldom in trim for mental work; they are incapacitated for much physical exertion. Constipation is habitual. In bad cases the appetite is diminished or lost; digestion is painful and accompanied with pyrosis; and palpation and succussion give the characteristic signs of gastrectasia. Fatigue is a prominent symptom; exercise speedily tires. The eyes ache after reading a few minutes; there is a continual disposition to lie down; such patients are often more tired in the morning on rising than when they went to bed. They complain much of insomnia. Headache and backache are every-day phenomena. The extremities are cold and livid.

Carron hesitates amid the complexity of symptoms, and asks whether in these cases, which are only too frequent, the gastric alteration is primary, reacting on the organism, and bringing about in the long run, by failure of nutrition, the general dilapidation and the want of equilibrium in the nervous system, or whether one has to do with a primary neurasthenic condition in which the gastric phenomena predominate? He inclines to the opinion that there are two classes of cases: one in which the stomach is primarily affected, entailing on the organism perturbations; the other, in which "the neurasthenia commences, and the affection of the stomach completes the tableau."

Of course, the treatment would be widely different in the two classes, and an accurate diagnosis is imperative in order that successful therapeutic results may be obtained.

Dujardin-Beaumetz makes gastric neurasthenia the subject of a recent Cochin hospital lecture,[1] and of a subsequent communication to the Society of Practical Medicine. He believes that in the great majority of cases neurasthenia is of gastric origin, and that patients affected with this malady will be found to have all the symptoms of dilatation of the stomach. He insists on the emaciated appearance of these subjects, their bilious hue, their melancholic disposition, the odd, varying, nervous symptoms, which are not, however, those of hysteria; palpation gives a splashing sound; sometimes the liver is congested, and, when the dilatation is considerable, in most cases there is a right-sided renal ectopia. These persons are always dyspeptic and constipated. He mentions the various theories which have been proposed to explain the relationship between the neurasthenia and the gastrectasia, and inclines to that of Bouchard.

According to Bouchard, all the train of morbid phenomena depend on the penetration of the economy by *toxines*, which result from vicious fermentations taking place in the dilated stomach. These toxines produce a veritable systemic poisoning, and the passage of these organic alkaloids through the liver congests that organ, and gives rise consecutively to a crowding down of the right kidney, a displacement which tends to become permanent.

Beaumetz thinks that the dilatation of the stomach, which causes the nervous phenomena, will, in almost all cases, be found to be a hereditary malady; it results directly from a toneless, paretic state of the gastric muscle; subjects of gastrectasis will be likely to transmit a similar condition to their offspring.

In the treatment of gastric neurasthenia two leading indications must be kept in view: to restore the stomach and intestine to a normal condition, and to remedy the depressed nervous state.

The first indication is the most important to fulfil. It comprehends all pharmaceutical and other means for combating the development of toxines in the digestive tube, and for restoring tone to the alimentary canal. Among the pharmaceutical agents, the antiseptics: naphthol, salicylate of bismuth, etc., are especially useful. Dujardin-Beaumetz combines five grains of salicylate of bismuth with the same quantity of magnesia and bicarbonate of soda for one powder, to be given shortly before meals. Five grains of naphthol may be added to each powder.

Laxatives occupy an important place in the therapeutics of this malady, podophyllin, cascara, senna, sulphur, the purgative mineral waters are all recommended; the compound licorice powder is a useful preparation.

When the dilation is considerable, lavage of the stomach by means of the siphon is indicated; putrescent matters are washed out, and the stomach is disinfected by boric acid solutions (1%) or naphthol a, 1 per 1,000.

The dietetic treatment of gastrectasis comprises three indications: to reduce to the minimum the quantity of liquid ingested; to introduce food into the stomach only when that organ is freed from the remains of a former meal; to introduce the smallest possible quantity of ptomaines with the food. The first indication is fulfilled by a dry diet, only half a pint of liquid with each meal; no drink between meals. Soups, broths, milk, champagne, etc., strictly forbidden. To meet the second indication, only two meals a day are allowed, the one at 10.30 A. M., the other, at 7 P. M. No lunches. To meet the third indication, the diet should be mostly vegetarian. Little or no meat; all meats to be thoroughly cooked. Toasted bread instead of plain bread, well cooked vegetables and fruit are permissible; eggs are unobjectionable.

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[1] Bull. gen. de thér., November 30, 1889.

To combat the neurasthenia, various mechanical means, as abdominal belts and supporters have been advised by the School of Lyons. These help support the dilated, misplaced abdominal organs. Hydropathy, gymnastic exercises, electricity and massage give excellent results, but the stretched dilated viscera cannot be restored to their primitive shape and volume. The patient can, however, be much more comfortable, the tone and action of the digestive tube can be improved, and the general health made better.

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MEDICAL NOTES.

—Sixteen young women were graduated as nurses from the Training School of the Women's Hospital, Philadelphia, December 11th.

— London is to have post-graduate courses from the combined material offered by the Brompton Consumption Hospital; the Hospital for Sick Children, Great Ormond Street; the Hospital for the Paralyzed and Epileptic, Queen Square; the Moorfields Ophthalmic Hospital; and the Hospital for Diseases of the Skin.

— James Brennan, of St. Louis, is a prisoner at Quarantine, and has been pronounced a leper. His friends do not believe the diagnosis to be correct, and several days ago petitioned for a writ of habeas corpus in order to secure his release. Health Commissioner Dudley was ordered to bring the body of Brennan into the Circuit Court, but it was supposed that the letter of the injunction would not be obeyed, and that the case would be settled on evidence and argument. To the horror of a packed court-room, the leper was brought in. He presented all the symptoms of the disease, and half the people rushed out of the room. Judge Valaint took one look at Brennan, and ordered him back to Quarantine in the custody of the city.

— The present status of "The Stillé Medical Library," of the University of Pennsylvania, consists of the original gift of Dr. Alfred Stillé in 1874, 3,035 volumes; of an additional gift in 1884 of 500 volumes and of contributions at various times by Drs. William H. Taggart, William Elmer, Joseph Leidy, Joseph Carson, H. C. Wood and others. The total number of volumes in the last recorded enumeration, in 1885, was as follows: Bound volumes, 5,760; unbound volumes and pamphlets, 4,800; total, 10,560. To these should be added the more recent gift received from Dr. William Pepper, including the greater portion of his own medical library, and a large number of books which formerly belonged to his father.

— Expectant practitioners report that they are beginning to reap the first fruits of the European epidemic influenza, both in Boston and New York. Certainly there are many bad head-colds, affecting in some cases several members of a family or a business community; but health authorities are not quite yet prepared to affirm it to be an imported rather than a domestic product.

— The following report from Deputy-Collector Gano to Collector Erhardt of New York, shows that the Collector is losing no opportunity to perfect the service, and that his doctor has accomplished wonderful results with some of the "invalids" in the service:

"The statement of absentees on account of alleged sickness herewith submitted, for the month of November, 1889, compared with that for six months from January 1 to June 30, 1889, while not as satisfactory as it would be if the two periods of time were of the same length and covered the same season of the year, shows, nevertheless, a marked improvement in regular attendance to duty that can only be attributed to the effect of the daily visitations of the physicians employed for that purpose. The number of days' absence from January 1 to June 30 (not including the Naval Office), was 5,087, or an average of 848 days per month, against 512 for November, a gain of 336 days in one month, or enough at the average salary of employés to pay a physician for one year. If this gain can be maintained through the entire year, it will amount to 4,032 days, representing not less than $16,000, a consideration that would seem to justify the continuance of the experiment of medical inspection.

"During the six months period the average number of days lost by each man was 7 91-100, while for the month of November the average per man was 4 65-100, a reduction of 3 26-100 per man. The average number of employés absent each day during the former period was 33 05-100, and during the latter, 21 33-100, an average daily reduction of 11 72 100.

"Other comparisons may be made showing results equally satisfactory, but the foregoing are sufficient to prove that the experiment of medical inspection is a decided success."

— The Medical Society of the State of South Carolina celebrated its one hundredth anniversary at Charleston, December 9th, by an oration in South Carolina Hall by Dr. Kollock, followed by a dinner at the Charleston Hotel.

The Medical Society of South Carolina ranks among the oldest of its kind in America; the three older than it being the New Jersey State Medical Society, founded in 1766; Massachusetts Medical Society, founded 1781; and the College of Physicians, Philadelphia, founded 1787. The initiatory step in the founding of this society was taken by Dr. Peter Fayssoux. Dr. David Ramsey, the famous historian, and once President of the Continental Congress, and Dr. Alexander Barron were among the first members. The meetings were held at Williams Coffee House and at Harris Tavern, and were marked by a convivial flow of spirits of various kinds. As Dr. Michel, the historian of the Society, has remarked, the object of the organization was charity, and from this society as a parent have sprung the most noble charities of the city of Charleston.

For sixteen years its members maintained a voluntary personal dispensary system for the poor. The Shirras Dispensary system of the city physicians, Roper Hospital, and other institutions, quickly followed, and also later the Medical College. The Humane Society was another beneficial organization which took its origin in this society, and the Botanical Organization founded in 1805; also the Esculapian Society of Union District.

This society published one of the first medical journals published in America, the *Carolina Journal*, edited by Drs. Thomas Y. Simons and William Michel, published in 1822. The *Southern Medical and Surgical Journal* originated with Drs. J. Lawrence Smith and S. D. Sinkler, in 1845.

BOSTON AND NEW ENGLAND.

— The Harvard Dental School recently received a gift of $1,000 to be added to its endowment fund.

— The Maine General Hospital is made the residuary legatee of the estate of the late Dr. H. H. Hill of Augusta.

— The directors of the West End Street Railway have voted to engage free beds in the Massachusetts General Hospital, City Hospital and Cambridge Hospital, commencing with January 1, 1890, and that the general manager be authorized in his discretion to send employees to such hospitals.

— So many exaggerated and misleading stories have been sent out in reference to typhoid fever at Yale University, that the faculty on December 13th, had all of the buildings examined by George E. Waring the sanitary engineer, who reported that the buildings and their sanitary systems were in first-class condition, and that the sickness could not have been caused by unsanitary conditions of the dormitories.

— The Trustees of the Portsmouth (N. H.) Hospital have received for the proposed extension nearly $1,000, $250 being received from Professor James Barr Ames, of the Harvard Law School, whose wife and little boy were ill at the hospital a year ago, and whose gift was made (he writes) "as an evidence of our gratitude for the kind shelter and care that Mrs. Ames and our little boy found there."

— The Quarterly Meeting of the Rhode Island Medical Society was held in Providence, December 12th, with the following programme:

Dr. C. B. Davis, "Lobelia Inflata"; Dr. J. W. Keefe, "Two Cases of Empyema"; Dr. G. L. Richards, "A Case of Trephining for Fractured Skull"; Dr. A. H. Harrington, "Hysterical Manifestations in a Boy"; Dr. J. W. Mitchell (1) "A Case of Umbilical Hernia of unusual size," (2) A Case of Pedunculated Lipoma of the right Labium Major"; Dr. W. R. White, "A Case of Intermittent Fever in an Infant Three Weeks Old."

— The following advertisement cut from a daily paper seems to indicate a lack of worldly prosperity in the so-called Church of Christ:

> Notice. — Any person who was a member of the Church of Christ, Scientist, Boston, at the time the lot of land on the corner of Falmouth and Caledonia Streets, Boston, was bargained for by said church, can now purchase the lot at any time within six days from the date hereof, for the sum of $5,100.

NEW YORK.

— It is gratifying to learn that for the week ending December 7th, the reports of the Bureau of Vital Statistics show the lowest rate of mortality in the city which has ever been reached in the period covered by the records of the Health Department.

— The President of the Board of Health, accompanied by Dr. W. A. Ewing, Sanitary Inspector, and some police officers of the Sanitary Squad, recently made a night tour of inspection of a considerable number of the cheap lodging-houses, of which there are said to be three hundred in the city, with a capacity of "accommodating" about twelve thousand lodgers. In consequence of this inspection the licenses of some of the worst of these places have been revoked by the Board of Health, as they are found to be over-crowded and in bad sanitary condition.

— The coroner's jury in the case of Harris, the Eighth Avenue salesman, who was killed by an electric light wire coming in contact with a show-case which he was assisting in carrying, has rendered a verdict which finds the Brush Electric Light Company wholly responsible for Harris's death. The finding also makes the following recommendations: (1) That the Board of Electrical Control and the Board of Health be requested to use extraordinary and speedy measures to have the wires of all the electric light companies of the city laid underground, and, (2) that the said Boards use all necessary care to have the wires and lamps of all the electric light companies properly insulated.

— During the past few months the subject of infantile diarrhœa has received much attention on the part of the Section of Pediatrics of the New York Academy of Medicine, and the meeting of December 12th, was wholly devoted to a further discussion of the matter. Dr. L. Emmett Holt read a paper on "The Anatomical Characters, Nomenclature, and Treatment of the Diarrhœal Diseases of Infancy," and in the discussion which followed, which was participated in by Drs. Jacobi, Caillé, Seibert, Baruch, Winters, the Chairman of the Section, Dr. J. Lewis Smith, and others, the dietetic treatment, the mechanical treatment by means of irrigation, and the use of opiates were the points principally enlarged upon.

— The fine new school-house at the corner of 104th Street and 10th Avenue, which was erected on the site of the old one, to the bad sanitary condition of which the death of one of the teachers last year was considered directly attributable by her attending physician, has just been occupied. It will accommodate about 2,500 pupils, and the first floor is to be used mainly as a play-room. Special care has been taken to provide the best light and ventilation, and the air-space per pupil is double that of the old school building. There are ample fire-proof stairways for reaching the street quickly, and the convenience of the teachers, as well as the comfort, health, and safety of the scholars, has been consulted in the construction of edifice. This is one of a series of five new school-houses in course of construction or already completed, all of which are intended to be models of their class, and are vastly superior to the old ones.

— At the twenty-first annual meeting and dinner of the Wesleyan University Alumni Association, held December 13th, it was announced that Dr. Daniel Ayres, of Brooklyn, had made the munificent donation of $250,000 to the endowment funds of the University. Dr. Ayres has always been a generous benefactor of his Alma Mater, and within the present year has already given $50,000 for the endowment of a chair in biology. This present large gift is designed to increase the efficiency of the various scientific departments of the University. Dr. Ayres was born in New York city, and after receiving his academic education at Wesleyan, was graduated in medicine from the medical department of the University of New York in 1844. He served for one year as interne at Bellevue Hospital, and then went to practice in Brooklyn, where he has resided ever since.

Miscellany.

EPIDEMIC INFLUENZA.

At present the administration of the various governments of Europe, say the press dispatches, is completely demoralized by the prevalence of the influenza, and business of every kind is only carried on there under the most serious difficulties. Convicts have had to be put back because the judges were too ill to sentence them: more than half the postmen are prevented by sickness from attending to their duties. In one continental regiment alone forty per cent. of the men were placed *hors de combat* in a single day by the ailment. Theatrical stars fail to rise at night, or in the morning either, for the matter of that. Marriages and all other kinds of ceremonies and entertainments excepting funerals have to be put off. In Paris the employees of all the great retail dry-goods stores have been seized with "la grippe," as the French style the malady, no less than 670 cases having been reported on Wednesday in one establishment alone. The notion of 670 salesmen and saleswomen, all sneezing and coughing simultaneously in one shop, is something too awful to contemplate. Indeed, the paralyzing effects of the present epidemic can only be compared to those which occurred one hundred years ago, when, as a contemporary remarks, two great British fleets under the command of Admirals Lord Anson and Kempenfeldt were obliged to suspend their hostile operations on the French coast and to return to Spithead, owing to the men being completely disabled by influenza. Under the circumstances, it is to be hoped that our squadron of evolution, which has just sailed from Boston for European waters, may escape such a visitation. Most European capitals are now experiencing it with more or less severity.

SANITARY CONDITION OF JACKSONVILLE.

A correspondent writes to the *Times Union*, of Jacksonville, Fla., criticising a recent statement of the Duval County Medical Society, that "the present sanitary condition compares most favorably with that of any city of its size."

Against this, the correspondent says: "But is it true? The declaration has been made repeatedly, and it is based upon irrefutable facts and figures, that the sanitary condition of Jacksonville is bad — very bad. It was demonstrated to be bad by Sanitary Expert Bowditch, whose opinion was to some extent reinforced by Engineer Johnson. . . .

"Col. Waring, a sanitary expert of international reputation, said in a paper which was read before the American Medical Association last June, that 'in a city whose sanitary arrangements are good, the death-rate ought not to exceed 12 per 1,000 per annum." And Dr. Billings, of the United States Army, declared that the census shows that the death-rate throughout the United States is 18 per 1,000 per annum.

"The mortuary records of Jacksonville disclose the fact that the death-rate for a month, beginning July 17th and ending August 17th, inclusive, was, amongst the whites, 49 per 1,000 per annum; for two months beginning July 17th it was 42; and for three months from the same date, it was 38. Among the colored people the death-rate was about the same.

"Another sanitary expert of national reputation, Mr. Charles Wingate, said recently, that 'the absolute and infallible test of the healthfulness of any given place is the ratio of deaths of children under five years of age to all deaths,' and that the ratio ought not to exceed 25%. Judged by that test, what do the records of Jacksonville show? The *Times Union*, of Sunday, December 1st, two days before the special meeting of the Duval County Medical Society, published the mortuary report for the month of November (which was cited by the Duval County Medical Society to show Jacksonville's remarkable healthfulness). This was the exhibit: 'Whole number of deaths 46; number of deaths of children under five years of age, 23 — a ratio of 50%. Comment is unnecessary."

FIXING THE STATUS OF ASSISTANT SURGEONS OF THE WAR OF THE REBELLION.

The records of the Surgeon-General's office show that there were 5,532 Contract Surgeons, or as they were officially designated, Acting Assistant-Surgeons, of the United States Army who served in the War of the Rebellion. The form of entry into the service by these medical officers — many of whom were professors in medical colleges and editors of standard medical books — was not questioned as their country needed their services, and they patriotically responded to its call in its hour of need, and went where they were ordered by their superior officers, agreeably to the United States Army regulations, which they were sworn to obey like other medical officers. They wore the uniform and insignia of rank of First Lieutenant, and performed precisely the same duties as Surgeons and Assistant Surgeons, and in a number of instances had charge of United States General Hospitals where their responsibility was very great. Section 4,695 of the Revised Statutes of the United States gives the Acting Assistant-Surgeons the same amount of pension as is given to a First Lieutenant of the military corps; but their only grievance is that they are deprived of whatever benefits a legal muster and an honorable discharge would entitle them to.

An endeavor is to be made to secure such legislation by Congress as shall fix the status of these men, and a bill is to be introduced into the present Congress by Senator Manderson of Nebraska. The bill is as follows:

> *Be it enacted, etc.*, that all Acting Assistant Surgeons of the United States Army, or Contract Surgeons who served in the War of the Rebellion, and whose services were honorably terminated, be commissioned as Acting Assistant Surgeons of the United States Army, the date of contract to be the date of commission and muster into the service, and the date when the service was honorably terminated, or the contract annulled, to be the date of discharge or muster out of the service:
>
> *Provided*, that any expense attending the issuance of a commission as Acting Assistant Surgeon of the United States Army, be borne by the applicant for such commission.

It is stated that the corresponding medical officers in the Navy during the Rebellion, 447 in number, were regularly commissioned officers and the movement above referred to is to put the army medical officers on the same footing. Persons interested are invited to communicate with their congressional representative urging them to coöperate with the favorers of the bill.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 7, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	661	193	12.75	17.40	2.85	1.00	4.65
Philadelphia	1,040,245	352	118	12 60	16.96	.28	3.92	6.16
Chicago	830,000	325	132	17.67	7.75	.62	2.48	11.16
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	182	66	13.75	13.75	2.20	1 65	3.80
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	153	56	16.25	15.60	1.30	2.60	9.65
New Orleans	250,000	121	43	16.60	7.80	7.47	2.49	3.32
Cincinnati	225,000	110	—	14.56	12.74	—	.91	10.01
Washington	225,000	101	26	16.83	19.80	—	10.89	3.96
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	25	6	8.00	12.00	—	4.00	—
Charleston	60,145	27	11	14.80	11.11	14.80	—	—
Portland	40,000	16	4	12 50	12.50	—	6.25	6.25
Worcester	78,292	29	8	10.35	20.70	—	3.45	6.90
Lowell	71,518	39	13	17.92	12.80	2.56	7.68	7.68
Cambridge	65,552	22	6	13.75	22.75	—	—	13.75
Fall River	62,647	30	8	13.33	20.00	—	3.33	3.33
Lynn	53,334	18	0	—	16.66	—	—	—
Springfield	40,731	14	4	14.28	—	—	—	7.14
Lawrence	40,619	14	5	35.70	7.14	—	14.28	21.42
New Bedford	37,253	13	3	15.38	15 38	7.69	7.69	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	12	—	16.66	—	—	—	16.66
Brockton	28,813	—	—	—	—	—	—	—
Chelsea	28,167	7	1	—	14.28	—	-	—
Haverhill	26,058	4	0	25.00	25.00	—	25.00	—
Taunton	25,170	—	—	—	—	—	—	—
Gloucester	24,263	8	3	—	12.50	—	—	—
Newton	21,553	—	—	—	—	—	—	—
Malden	19,774	2	0	—	—	—	—	—
Fitchburg	17,534	9	0	—	11.11	—	—	—
Waltham	17,332	2	0	—	—	—	—	—
Pittsfield	15,502	3	2	66.66	66.66	—	—	—
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	8	1	—	50.00	—	—	—
Quincy	13,728	8	2	12.50	—	—	—	12.50

Deaths reported 2,505: under five years of age 701; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 329, consumption, 322, acute lung diseases 280, diphtheria and croup 146, typhoid fever 65, diarrhœal diseases 43, whooping-cough 23, scarlet fever 20, malarial fevers 14, measles 8, cerebro-spinal meningitis 6.

From whooping-cough, New York 11, Baltimore 3, Philadelphia, Chicago and Boston, 2 each. Cincinnati, Fall River and Springfield 1 each. From scarlet fever, New York 6, Philadelphia 5, Chicago 4, Boston 2, Baltimore 1. From malarial fevers, Baltimore and New Orleans 4 each. Chicago 3, New York 2, Philadelphia 1. From measles, New York 5, Cincinnati 2, Chicago 1. From cerebro-spinal meningitis, Washington 2, Chicago, Cincinnati, Nashville and Fall River 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,555,406, for the week ending November 30th, the death-rate was 19.0. Deaths reported 3,477: infants under one year of age 858; acute diseases of the respiratory organs (London) 345, whooping-cough 85, scarlet fever 63, measles 61, diphtheria 51, fevers 46, diarrhœa 37.

The death-rates ranged from 11 6 in Norwich to 32.0 in Plymouth: Birmingham 18 0, Bradford 20.0, Hull 25.1, Leeds 22 5, Leicester 14.6, Liverpool 22.1, London 17.4, Manchester 27 4, Nottingham 16.0, Sheffield 20.4, Sunderland 30.3.

In Edinburgh 22.1, Glasgow 22.6, Dublin 28.7.

The meteorological record for the week ending Dec. 7, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Dec. 7, 1889.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 1	30.40	30.0	36.0	25.0	62	47	55.0	W.	S.W.	12	12	C.	C.		
Monday,.. 2	30.02	43.0	51.0	35.0	44	50	47.0	S.W.	S.W.	23	12	O.	O.		
Tuesday,.. 3	30.05	34.0	44.0	24.0	74	56	60.0	N.W.	N.	8	20	O.	F.		
Wednes... 4	30.46	15.0	20.0	10.0	93	65	79.0	N.	N.W.	21	10	N.	O.		
Thursday,. 5	30.25	29.0	39.0	18.0	76	91	84.0	S.	S.	6	9	F.	R.		
Friday,.... 6	29.95	37.0	42.0	32.0	82	53	68.0	W.	N.W.	13	12	C.	C.		
Saturday,. 7	30.01	38.0	50.	26.0	64	25	45.0	S.W.	S.W.	10	10	C.	C.	20[2]	0.13[2]
Mean for Week.	30.17	32.3	40.3	24.3	70.7	55.3	62.6								

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. [2] Total for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 7, 1889, TO DECEMBER 13, 1889.

Leave of absence for ten days, to take effect upon being relieved from duty at Fort Niagara, New York, is granted Major John D Hall, surgeon. Par. 11, S. O. 285, A. G. O., Washington, December 7, 1889.

By direction of the Secretary of War, Captain Edward C Carter, assistant surgeon, will be relieved from duty at Willet's Point, N. Y., upon the arrival at that station of Major Clarence Ewen, surgeon, and will then proceed to Fort Walla Walla, Washington, and report in person to the commanding officer of that Post for duty, reporting also by letter to the commanding general Department of the Columbia.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 14, 1889.

Ross, J. W., surgeon. Detached from Navy Yard, Pensacola, Fla., and placed on waiting orders.

Kite, I. W., assistant surgeon. Detached from Naval Hospital, Philadelphia, Pa., and ordered to Navy Yard, Pensacola, Fla.

Rogers, B F., surgeon. Ordered to special duty at Norfolk, Va.

Leach, Philip, passed assistant surgeon. Ordered to duty at Naval Academy, Annapolis, Md.

SOCIETY NOTICE.

Boston Society for Medical Improvement. — A Regular Meeting of the Society will be held on Monday, December 23, 1889, at the Medical Library, 19 Boylston Place, at 8 o'clock, P. M.

Dr. F. I. Knight, "The Rational Treatment of Bronchial Asthma."

Dr F. E. Cheney, will report "A Case of Hysterical Mydriasis, Paralysis of Accommodation, and Blindness, following the use of Homatropine." F. B. Harrington, M.D., *Secretary*.

OBITUARY. DANIEL BAILEY CUTTER, M.D.

Dr. D. B. Cutter, of Peterborough, N. H., died on December 7th, aged eighty-one years, six months and twenty-seven days. He was born at Jaffrey, May 10, 1808, graduated at Dartmouth College in 1833, and took his medical degree at Yale College in 1835. He commenced the practice of his profession at Ashby, Mass., where he spent two years, and removed to Peterborough in 1837. Here he built up a successful and lucrative practice in which he continued active until a few years since, when, with enough of this world's goods for his own comfort and that of those who are dependent on him, he retired from active work, and engaged for a pastime in writing and publishing a History of Jaffrey. He was moderator of the town for 1848-50, and representative to the general court in 1852.

BOOKS AND PAMPHLETS RECEIVED.

A Case of Sarcoma of the Thyreoid Gland. By J. Solis-Cohen, M.D. Reprint. 1889.

A Hitherto Undescribed Disease of the Ovary: Endothelioma changing to Angeioma and Hæmatoma. By Mary A. Dixon Jones, M D., Brooklyn. Reprint. 1889.

The National Prison Association Congress at Nashville, Tenn., November 16–20, 1889. "Arousing the Public." A Paper by C. H. Reeve, of Plymouth, Ind. With preface and appendix.

The Treatment of Internal Derangements of the Knee-joint by Operation. By Herbert Wm. Allingham, F.R.C.S., surgeon to the First Northern Central Hospital, etc. London: J. and A. Churchill. 1889.

A Treatise on Diseases of the Nose and Throat. In two volumes. By Francke Huntington Bosworth, A.M., M.D., etc., Volume I. Diseases of the Nose and Naso-Pharynx. With 4 Colored Plates and 182 Wood Cuts. New York: William Wood & Co. 1889.

The Principles and Practice of Surgery. By John Ashhurst, Jr., M.D., Barton Professor of Surgery and Professor of Clinical Surgery in the University of Pennsylvania. Fifth Edition, enlarged and thoroughly revised, with 642 illustrations. Philadelphia: Lea Brothers & Co. 1889.

A Manual of Obstetrics, By A. F. A. King. A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, D. C., etc., with 141 illustrations. Fourth Edition. Philadelphia: Lea Brothers & Co. 1889.

A Reference Handbook of the Medical Sciences, embracing the entire range of scientific and practical medicine, and allied science, by various writers. Illustrated by chromo-lithographs and fine wood engravings. Edited by Albert H. Buck, M.D., New York City. Volume VIII. New York: Wm. Wood & Co. 1889.

Two Cases of Removal of Uterine Myoma, One, Suprapubic Hysterectomy; the other, Complete Hysterectomy. A New Method of Disposing of the Stump. Microscopical Examination of the Appendages. Remarks on the Treatment of Uterine Myoma by Electricity. By Mary A. Dixon Jones, M.D., surgeon to the Woman's Hospital of Brooklyn. Reprint. 1888.

A Handbook of Obstetrical Nursing for Nurses, Students, and Mothers Comprising the course of instruction in obstetrical nursing given to the pupils of the training-school for nurses connected with Womans' Hospital of Philadelphia. By Anna M. Fullerton, M.D. Demonstrator of Obstetrics in the Womens' Medical College of Pennsylvania. Philadelphia: P. Blakiston, Son & Co. 1890.

A Treatise on Materia Medica, Pharmacology and Therapeutics. By John V. Shoemaker, A.M., M.D., Professor of Materia Medica, etc., in the Medico-Chirurgical College of Philadelphia, and John Aulde, M.D., Demonstrator of Clinical Medicine, etc., in the same. In two volumes Volume I. Devoted to Pharmacy, General Pharmacology and Therapeutics and Remedial Agents not properly classed with drugs. F. A. Davis, Publisher 1889.

A Handbook of Diseases of Women, including diseases of the bladder and urethra. By Dr. F. Winckel, Professor of Gynecology, and Director of the Royal University Clinic for Women in Munich. Authorized translation, edited by Theophilus Parvin, M D., Professor of Obstetrics, and Diseases of Women and Children, in Jefferson Medical College, Philadelphia. Second Edition, revised and enlarged, with 150 illustrations. Philadelphia: P. Blakiston, Son & Co. 1889.

Original Articles.

SOME HOSPITAL CASES OF TYPHOID FEVER.[1]

ELBRIDGE G. CUTLER, M.D.,
Visiting Physician to the Massachusetts General Hospital.

Between July 1st and November 1st, 1889, fifty-six cases of typhoid fever in which there was no question as to the diagnosis were admitted to my ward in the Massachusetts General Hospital. There were also nine other cases which were doubtful either from the mildness of the symptoms or from the abortive nature of the attack, which have not been included in this enumeration.

The shortest of the undoubted cases was of seventeen days' duration with two days of prodromata.

The longest was fifty days. The patient was twenty-seven years old and entered the hospital on the eighth day of his disease with a temperature of 102.8° F. which gradually rose till on the twentieth day it reached 104.7° F. It remained about this point for four days with slight morning remissions when it rapidly fell in the course of the day to 98° at night accompanied by improvement and slowing of the pulse and a marked betterment in the general condition. By the next evening, the twenty-seventh day, the temperature had risen to 104.2 a few rose spots reappearing, none having been found for the past twelve days. On the thirtieth day the temperature having slightly diminished there was a small epistaxis. The spleen was concealed by tympanitic distention. Defervescence continued through the next twenty-days, interrupted once only by a hæmorrhage into the right rectus abdominis muscle.

Diazo-reaction. — In 1882, Ehrlich published in the *Zeitschrift für klinische Medicin* a new urinary test for the recognition of one of the diazo compounds found in certain diseases. His reagent was as follows. One part of muriatic acid and twenty parts of water were mixed, and as much sulphanilic acid was added as the solution would take up. This formed one solution. The other solution was a half per cent. solution of nitrite of sodium in water.

(1)	Sulphanilic acid	5.0
	Muriatic acid	50.0
	Distilled water	1000.0
(2)	Nitrite of sodium	0.5
	Distilled water	100.0

Fifty cubic centimetres of No. 1 and one cubic centimetre of No. 2 are mixed and an equal quantity of urine is added. To this mixture one-eighth volume (or enough to render it alkaline) of aqua ammoniæ is added and the mixture shaken. If the urine be from a healthy person the color is changed but little. If on the other hand it be from a typhoid fever case after the first few days of the disease it becomes an intense carmine or scarlet color best seen in the foam on shaking. Allowed to stand twelve to twenty-four hours a deposit is formed the uppermost layer of which is a narrow or broad zone of an intense dark green or greenish black color (simply violet in healthy urine). This reaction was found by Ehrlich in the urine of typhoids after the first few days (middle of the first week usually) and it lasted till defervescence and perhaps longer. It was also seen during relapse or recrudescence. He likewise found the reaction in the urine of patients in the desquamative stage of measles or after the crisis and in late and severe cases of tuberculosis pulmonum. The reaction occurred in croupous pneumonia and diphtheria only rarely. He drew the following conclusions from his observations.

(1) The reaction is one of the most constant diagnostic marks of typhoid fever, from the middle of the first week on, so that the absence of it renders the diagnosis doubtful.

(2) Cases of typhoid fever in which the reaction is only slightly marked and confined to a short time usually run a very mild course.

(3) If the reaction ceases in the first stage of typhoid without pneumonia having developed we may expect the temperature to remit in the next three to five days.

(4) It is evident that the reaction cannot be utilized for differential diagnosis between typhoid fever and diseases of the second group (erysipelas, miliary tuberculosis, septico-pyæmia, pleurisy, scarlet fever, intermittent fever).

(5) The occurrence of the reaction in croupous pneumonia indicates the existence of complications.

(6) In phthisis pulmonum the occurrence of the reaction is a bad omen.

(7) Long continuance of the reaction without fever points to consumption.

Writers differ as to the worth of this reaction for diagnostic purposes in typhoid as well as about its prognostic value. On the whole the weight of evidence is rather in its favor and is perhaps best summed up by Strümpell in the last edition of his text-book in which he says "the urine (in typhoid fever) gives almost without exception the Ehrlich diazo-reaction at the height of the disease." How great its diagnostic value is I have not been able to determine having made no comparative test. My experience thus far leads me to consider it strong corroborative evidence of typhoid. The reaction was sought for in every case but three, fifty-three times. It was characteristic or marked forty-nine times. In four cases it was absent. Two of these were very mild cases in young persons and the urine was not examined for it every twenty-four hours. In the third case, a mild one, the patient was sixty-seven years old. The fourth case was convalescent when first seen. In several cases where recrudescence occurred the reaction was found at this time in a moderate degree. In one of the cases of relapse the reaction was extreme, in the others it was moderate.

Spleen. — The spleen was found to be enlarged forty-seven times. In thirty-seven of these cases it was distinctly felt below the ribs on full inspiration. In ten cases it was only found to be enlarged by percussion. In nine cases no enlargement was detected. Tympanitic distention may have been the reason once, tympanites and a fat belly once, and a great amount of fat in a third case. The other six cases presented no anatomical or other interference to either palpation or percussion.

Eruption. — The rose spots were profuse in three cases; covering the chest, abdomen, back, upper arms and thighs once; found on the abdomen, lower part of chest, thighs and back once; and in the third case they were seen not only on these parts but also on the face. In two of these cases there was furunculosis on the back (once) and on the back and buttocks (once); in one of of them later many of the rose-spots became pustular on the back. The rose-spots became pustular on the back in still another case just before death.

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[1] Read before the Boston Society for Medical Improvement, November 25, 1889.

Urticaria was seen on the face, back, abdomen and thighs, lasting for three days in one case.

Blue spots were seen once in addition to the regular rose-colored eruption. The spots were faint oval bluish spots the size of a split-pea and the finger-nail and were scattered over the abdomen, sides of the chest and shoulders not very abundantly, quite profusely over the buttocks and thighs. They disappeared on pressure, leaving, however, a slight yellowish or brownish stain. Pediculi were found on the pubes on entrance to the hospital. Some of these blue spots persisted on the thighs at time of discharge about three weeks later. The patient stated that he was easily bruised though not a bleeder. His complexion was light and skin fair. Prof. J. C. White kindly saw this patient and stated emphatically that the condition was not due to pediculi.

Catheterization, on account of retained urine, was necessary in seven cases.

(1) From the fourth day of the disease till the eighth day. No secondary cystitis.

(2) From the seventh till the twenty-first day. No cystitis.

(3) From the tenth till the fourteenth day. No cystitis.

(4) From the tenth till the twentieth day. Cystitis from the fourteenth till the sixteenth day.

(5) From the eleventh till the twenty-fifth day. No cystitis.

(6) From the fourteenth till the twenty-first day, when the patient died of peritonitis due to intestinal perforation.

(7) From the fourteenth till the thirty-second day, when the patient died of intestinal hæmorrhage.

The Nasal Tube was required in three cases.

(1) It was impossible to make the patient take his food and stimulant by the mouth in adequate quantity, and he was accordingly fed by Dr. E. F. Cushing, the efficient house-officer, through the nasal tube every four hours from the eighteenth till the twenty-second day, after which there was no further trouble. Recovery.

(2) Commencing between the end of the third and the beginning of the fourth weeks for ten days Dr. Cushing fed the patient, a boy of fifteen, every four hours. Recovery.

(3) The patient came in after a typical course of three weeks of typhoid under Dr. H. C. Ernst, with melancholia. She was fed by Dr. Cushing for a fortnight through the nasal tube.

Relapse occurred eleven times. In eight cases it was consecutive and in three intercurrent. In each case there were the constitutional symptoms, rose spots, splenic tumor, abdominal symptoms, characteristic fever curve with one exception. In this case there was simply the characteristic fever curve which came on after a week of normal temperature.

It lasted nine days once; thirteen days in two cases; fourteen days in one case; sixteen days in one case; seventeen days in one case, twenty days in one case, with a second relapse of sixteen days; twenty-one days in two cases; twenty-eight days in one case.

Complications. — Hæmorrhage, 5 cases (3 fatal); perforation, 2 cases (2 fatal); parotid abscess, 1 case; bed-sores, 3 cases; melancholia, 2 cases; pneumonia, 1 case; urticaria, 1 case; furunculosis, 3 cases; cystitis, 2 cases; late epistaxis, 1 case; venous thrombosis, 5 cases; œdema of leg, no tenderness, 2 cases; hæmorrhage into muscles, 2 cases.

In the first fatal case of *hæmorrhage* the patient was admitted on the twelfth day of his illness and severe symptoms continued throughout with a high temperature. At nearly the end of the third week the first hæmorrhage occurred, and during the remaining seven days he lived, twenty-four bloody stools were passed, some of them tarry, some fresh, a few clotted.

The second fatal case, also a severe one, came on in the beginning of the fourth week. A large loose dejection was passed containing two small clots of blood; no fall of temperature or variation in the pulse followed. For the next two days the patient appeared better and had movements free from blood, when on the third day a very large hæmorrhage accompanied by collapse occurred and the patient died.

The third fatal case was believed to have been from hæmorrhage, because of the sudden collapse, feebleness of pulse, pallor, gasping respiration, subnormal temperature, though no bloody stools were passed. It was in the beginning of the fifth week.

In a fourth case a small bloody stool was passed at the end of the fourth week and another at the beginning of the fifth week, on the seventh and ninth days respectively of a relapse.

The fifth case occurred on the ninth day of a consecutive relapse, and, was moderate. These last two cases recovered.

The cases of *perforation* looked bad from their first entrance. One was in the hospital seven and the other ten days. Perforation occurred in one case on the twentieth day and on the twenty-first day in the other. Death followed very soon in each case.

The *parotid abscess* occurred in a Portuguese, who entered at the end of the second week with the complication on the right side. Two ounces of thick offensive pus were evacuated. Recovery was uneventful.

The *bed-sores* occurred in two lads and a middle-aged woman, each of whom, passed urine and fæces involuntarily. In two instances it was over the right trochanter, and in the third, over the sacrum. While forming they were painted with ichthyol collodion, and covered by a phenyle (sulphonapthol) poultice later, till the slough came away, when they were dressed with balsam of copaiba.

The most marked of the *melancholia* patients came in convalescent from a three weeks' typical course of typhoid. The patient had a neurasthenic history. Despondency developed with convalescence, she refused her food, refused to talk, had hallucinations and had to be fed by the nasal tube. She was returned to her friends at the end of two weeks, with the advice to send her to an asylum.

In the other case the melancholia was mild and came on at the end of the third week, lasting some days, with ultimate recovery.

The patient who had *pneumonia* called himself fifty years of age, though he looked older. The typhoid here was mild, but protracted. In the fifth week, at the end of defervescence, a limited pneumonia occurred on the right side. The temperature became normal in five days, and the symptoms subsided. Five days later a phlebitis of the left leg occurred, and in the eighth week a limited pneumonia of the left lung came on. Some days later phlebitis of the right leg occurred.

The *urticaria* appeared at the end of the first week.

The *cystitis* was due to the use of the catheter, and washing out the bladder with one part styrone to two hundred parts of water, speedily caused it to disappear.

Venous thrombosis occurred in the left leg four times and in the right leg once. It came on in the fourth week in one case, the seventh in two cases, the ninth in one and the fifth in one. The typhoid had been mild in three of these cases, in one medium, in the other severe.

Œdema of the leg came on in two cases at the beginning of convalescence. It disappeared in a few days, its cause was not apparent. There was no pain or tenderness in one case; in the other it was preceded by a darting pain in both legs of short duration, the next day œdema occurred in the left leg. The pulse was normal in both feet of each case.

Hæmorrhage into the muscles. — This complication was seen in the right rectus muscle near the pubes in one patient in the fifth week of the fever. There was localized tenderness and swelling with ecchymosis coming on later. It took about fourteen days for the symptoms to wholly subside.

The hæmorrhage occurred in another case into one of the muscles of the calf of the leg during convalescence. The complication kept the patient from walking for ten days or more.

Deaths. — There were five fatal cases. Hæmorrhage was the direct cause of death in two: in the third the sudden occurrence of collapse, subnormal temperature, pallor, scarcely perceptible pulse and death within an hour, strongly suggested hæmorrhage. The other two cases were caused by peritonitis following perforation.

Treatment. — The *diet* consisted exclusively of milk in every case till the period of apyrexia began. Six ounces were given every two hours, as a rule, either plain, peptonized, or sometimes mixed with water. Vomiting did not occur very frequently and was usually easily controlled.

A *daily sponge-bath* was given for cleanliness. If the temperature rose to 102.5° a sponge bath of 65° F., was given every three hours. And for every additional .5° of heat shown by the patient, the temperature of the bath was diminished 5°. At 105° ice-water baths were given, and the interval between them diminished to an hour. If this had little or no effect in the diminution of temperature, phenacetin was given in four-grain doses (two grains or less to a child). The usual effect of the drug was to lower the temperature to about the normal point from which it slowly rose in from six to twelve or twenty-four hours to a point a little below what it had been before. It gave the patient a quiet, restful night, diminished the frequency, and increased the tension of the pulse, and never gave rise to the slightest unpleasant symptoms. It always made the patient feel more comfortable.

Cardiac stimulants were necessary in quite a number of cases. The best ones were found to be cocaine in $\frac{1}{4}$ grain doses every three or four hours, nitroglycerine one minim of the one per cent. solution every three hours (or $\frac{1}{100}$ grain in pill form), and a small dose of sulphate of atropia, given in the same intervals. These were found to be the best during critical periods for several days, given either in twenty-four hour periods or alternately in three hour periods. They proved themselves infinitely better than subcutaneous injections of brandy, and after a few trials were exclusively relied on, till a time when digitalis could be used.

ENTERIC FEVER AND TUBERCULAR MENINGITIS AT THE BOSTON CHILDREN'S HOSPITAL.

BY F. GORDON MORRILL, M.D., *Visiting Physician to the Hospital.*

THE twenty-five cases of typhoid which are tabulated in this paper were taken in their consecutive order from the house records, the only qualification necessary to be included in the series being a moral certainty of the correctness of the diagnosis.

The fact that malarial fevers, with which enteric is most likely to be confounded, are extremely rare in this city renders the diagnosis sufficiently easy in a large majority of cases.[1]

It is, of course, impossible at times to distinguish typhoid from simple continued fever during the first few days; but a tender and tympanitic abdomen, the appearance of rose spots, or undue prolongation of pyrexia, soon lead one to suspect the real condition.

The same remark applies to tubercular meningitis, a dozen or more cases of which I have observed where the earliest symptoms of brain trouble appeared in children who were residents in the surgical wards. Nausea or vomiting, fever, headache, anorexia and constipation are symptoms common to the early stages of both diseases; and the table below shows the frequency of their presence in the cases to which I have just referred, as well as the dates on which symptoms pointing to brain disease were first noted. Of course, in cases of chronic surgical disease (which constitute a large majority of cases treated in this institution), tubercular meningitis is naturally suspected; and the table is given to show the earliest appearance of symptoms on the strength of which a differential diagnosis might be made if enteric fever had been apprehended.

TABLE I.

	13	12	11	10	9	8	7	6	5	4	3	2	1	No. of case.
11	1	1	1	1		1	1	1	1		1	1	1	Fever.
10		1	1	1			1	1	1	1	1	1	1	Anorexia.
8		1	1	1	1	1		1	1			1		Headache.
13	1	1	1	1	1	1	1	1	1	1	1	1	1	Nausea or vomiting.
7		1		1		1		1	1	1		1		Constipation.
5		6th	5th	2d					9th		2d			Inequality of pupils.
3						4th	10th						3d	Dilatation of pupils.
3					5th	4th						1st		Photophobia.
3				6th					7th	12th				Strabismus.
6				7th		3d			8th	12th		1st	4th	Retracted abdomen.
3		12th					1st			1st				Night-cries.
7		7th		4th	3d		5th	4th	7th	12th				Tache cérébrale.
7	1st			13th			11th	15th	9th	12th	5th			Convulsions.
2			5th								2d			Paralysis.
11	3d	7th	5th			5th	6th	4th	5th	10th	2d	1st	6th	Irregular, intermittent or variable pulse.
17+ average	63d	17th	15th	13th	11th	10th	13th	15th	14th	20th	5th	12th	16th	Day of death.

Fever was present in all the above cases at some period of the disease, but is not indicated unless noted before the fifth day. Nausea or vomiting (usually both) was observed, on or before the fourth day. in all cases excepting Nos. 4 and 13, in which it was noted on the eighth and fifth days respectively. The remark about fever applies also to anorexia. Headache was invariably an early symptom when noted. In both cases where night cries are given as present on the first day, they were recorded two or three weeks previous to the appearance of any other symptom. In Case No. 9 the pulse and temperature charts were unfortunately missing, while in No. 10 no pulse record was kept. It will be seen at a glance, that in one case only (No. 12) did suspicious symptoms fail to appear on or before the fifth day; and in this case inequality of the pupils was noted on the sixth day. Moreover, in this case the vomiting was of a persistent type rarely observed in typhoid. The last case in the table was sufficiently peculiar to warrant special mention. Here the first symptom was the occurrence of general convulsions, the patient (a boy of seven, who was an inmate of a surgical ward, and under treatment for hip disease) having several during twenty-four hours. This was on July 31, 1886. August 2d, the pulse varied from 60 to 120 to the minute, and ten convulsions were noted. In the intervals the child seemed well enough so far as his general aspect was concerned, and ate with fair appetite. On the 4th he began to vomit, and retained scarcely anything given by the mouth during the ten succeeding days — was fed by nutrient enemas. Meanwhile, the attacks became less frequent; and on the 16th the record was, "No convulsions during past four days. Sleeps well. Appetite good." At this time his pulse varied from 85 to 140, and his evening temperature was 102° F. August 31st, he continued eating well. No more convulsions had occurred, but he had diarrhœa and began to show signs of emaciation. Temperature and pulse the same. September 8th, had slight nausea, but appeared well enough in other respects, although the evening temperature was 102.5° F. On the 9th, convulsions again set in, and by the 14th were so frequent that the intervals between them were of three or four minutes' duration only, when not under the influence of ether. He was thought to be dying, and the mother was so notified. September 15th the record was: "Very bright. Good appetite—ate eggs for breakfast, and asked for more." On the 26th he again had convulsions, which continued until October 1st, when death occurred. The urine was examined several times during the progress of the case, but nothing was found. It is possible that the trouble may have been brain tumor; but the age, presence of a cheesy

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[1] I have seen but one case of malarial fever originating in Boston during eighteen years of practice.

TABLE II.

No. of case.	Age.	Sex.	Normal morning temperature first noted.	Normal evening temperature first noted.	Highest temperature.	Day on which highest temperature noted.	Quickest pulse.	Rose spots first noted.	Rose spots not noted.	Nausea or vomiting.	Bronchitis, or Broncho-pneumonia.	Epistaxis.	Diarrhœa.	Acute delirium.	Abdom'l tenderness.	Tympanites.	Abdominal pain.	Relapsed.	Day of relapse.	Duration of relapse.	Duration of illness.	Result.	REMARKS.
1	10	M.							1		B.		1	1	1	1					?	D.	No history obtainable. Died of perforation a few days after admis'n.
2	4½	F.	18th	20th	105.2°	10th	140	10th		N.	B.				1		1				41	R.	
3	10	F.			104°	9th	140		1	V.			1		1						102	R.	Passed bloody stools during nine days
4	8	M.			104.3°	6th	120	8th		V.	B. P.			1		1	1				75	R.	Vomited blood on day of admission.
5	4	F.			101°	6th	125	7th			B.		1								39	R.	
6	7½	F.						14th				1		1	1						25	R.	
7	7	M.	28th	30th	104°	23d	148		1		B.				1						62	R.	
8	10	F.			107.8°	19th	140	10th			B. P.			1	1	1	1				77	R.	
9	8½	F.	23d	29th	104.2°	6th	112	9th							1	1	1				85	R.	
10	9	F.	21st	31st	103.8°	6th	140	9th		V.						1	1				83	R.	
11	7	F.	14th	17th	101.8°	9th	100	5th													37	R.	
12	9	F.	14th	16th	102°	10th		10th		V.											49	R.	
13	6½	M.	31st	35th	105°	6th	132	8th		N.	B. P.					1	1				76	R.	
14	10	F.	38th	28th	104.2°	33d	128	10th		N.	B. P.			1	1	1	1	1	41st	21	115	R.	Tender and tympanitic abdomen during relapse. Highest temperature during relapse, 103° F.
15	5	M.	41st	43d	105°	17th		5th		V.	B.										56	R.	
16	6½	F.	24th	27th	101.5°	7th	120		1	V.						1					67	R.	
17	4½	M.	28th	31st	104°	10th	120	21st		V.	B. P.		1	1	1						57	R.	During a period of one week, the pulse intermitted every fourth beat.
18	3½	M.	24th	30th	101°	6th			1	N.	B. P.				1	1					47	R.	
19	11	F.	16th	16th	105°	5th	132	10th			B.				1	1					43	R.	
20	7	F.	22d	25th	101.6°	6th	108		1			1						1	33d	10	70	R.	Highest temperature during relapse, 102°.
21	12	F.	20th	21st	105.3°	10th	120	5th						1	1			1	24th	25	91	R.	Do. do. 102.5°.
22	9	F.	24th	26th	101°	9th			1									1	29th	21	48	R.	Do. do. 102°.
23	8½	F.	14th	16th	104°	4th	118	15th			B.				1	1					57	R.	
24	12	M.	28th	51th	104°	10th	112	14th				1			1	1	1					R.	
25	11	F			106.6°	6th	129	16th		V.	B.	1	1			1						R.	

focus in the hip, temperature and widely varying pulse, all point to tubercular meningitis. The duration of the case (sixty-three days), is very exceptional, but is far exceeded by that of one reported by Collins in the *London Lancet* of March 8, 1884, which lasted 104 days. The other cases are in no way noteworthy, with the exception possibly of No. 3, which is a good example of the explosive type of the disease, where the symptoms crowd in almost simultaneously, and death takes place at an early date.

Before making an analysis of Table No. 2, a few words of explanation are required:

Normal temperatures are given only when not due to the action of antipyretics. Under the head of "Bronchitis or Broncho-pneumonia," such cases are credited with bronchitis, as coughed but showed no evidences of pulmonary consolidation. Very possibly, in some of these, the cough may have been due to pharyngeal inflammation or laryngeal catarrh. Abdominal pain is noted only in cases where it was voluntarily complained of during the early stage. Relapses are dated from periods of apyrexia lasting for three days or more. This system is, of course, open to criticism; but I think it decidedly preferable to making relapses dependent upon the condition of the spleen (no case being credited with relapse unless the fever recurs after this organ has resumed its normal size), as being far less liable to give rise to confusion. I have not noted the cases in which enlargement of the spleen was observed, for the reason that the records in this particular are imperfect, three cases only being credited with this condition, whereas I can distinctly recall double this number. The "duration of illness" is probably considerably longer than it would have been in institutions less liberally conducted, for in many cases the parents were urged to allow the children to remain in the house until their physical condition should warrant their return to home diet and discomforts.

To return now to the figures given, we find that of the twenty-five cases, eight were boys and seventeen girls; average age, eight years. Normal morning temperature first noted in eighteen cases on the twenty-fourth day; normal evening temperature, on the twenty-eighth day. Average highest temperature in twenty-three cases, 104.2° F., observed on the tenth day. The quickest pulse in nineteen cases averaged 125. Average date on which rose spots were first noted (eighteen cases), tenth day. Rose spots not observed in 28% of all cases; nausea or vomiting observed in 48%; bronchitis (or rather, cough not due to pulmonary consolidation), in 32%; broncho-pneumonia, in 24% (all of which recovered); epistaxis, in 16%; diarrhœa, in 20%; acute delirium, in 28%; abdominal tenderness, in 64%; tympanites, in 52%; abdominal pain complained of in early stage, in 32%; relapses, in 16%. Average duration of relapse, nineteen days. Duration to date of discharge, in twenty-two cases (the last two in the table are still residents, but have been for some time convalescent), sixty-four days. Mortality, 4%.

One case of house infection (No. 25) occurred, notwithstanding care taken in disinfecting the discharges with carbolic acid, and the scrupulous cleanliness which characterizes the nursing under the Sisters of St. Margaret. The only case demanding notice beyond that already set forth in the table is No. 8. Here the temperature ran up to 107.8° F. on the nineteenth day, and fell in a few hours to 101°. Nothing, aside from extreme prostation, was noticed, and stimulants were used freely. Three days later the thermometer registered 104°, from which it rapidly descended to a subnormal range, and the child had a convergent strabismus, dilated pupils, and well-marked *tâche cérébrale.* All these symptoms disappeared in twenty-four hours, and convalescence slowly followed. I am fully aware of the impossibility of drawing conclusions from so small a number of cases; but it is only by collecting a series of observations that important results are obtained, and these are published in the hope, that, when added to others, they may prove useful. As regards treatment, I should incline, during the acute stage, to a purely milk diet, frequent sponging with cool water, and the occasional use of phenacetine (so far as is known at present of its effects) in cases where a dangerous or uncomfortable elevation of temperature is present.

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ON METHODS OF EXAMINATION IN MEDICO-LEGAL CASES INVOLVING SUITS FOR DAMAGES FOR REAL OR SUPPOSED INJURIES TO THE BRAIN AND SPINAL CORD.[1]

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SENSORY SYMPTOMS.

Anæsthesia. — The best method of testing the sense of touch is by the finger tips. By a little contrivance the hand may be held so as to hide the finger, and the patient, even when not blindfolded, cannot see whether he is touched; moreover, the physician can thus regulate the strength of the touch perfectly. The compass æsthesiometer is of very little value.

In the majority of cases of traumatic neuroses the sense of touch is diminished in some part of the body, and it may even be absent. Exact hemianæsthesia, however, is rare. For simple diminution of sensation we have no criterion other than careful testing, but where absolute loss of sensation is feigned the strongest faradic current through a wire point or the actual cautery will usually prove too powerful to be borne. If the anæsthesia have a sharply defined boundary it is genuine, for my own experiments coincide with Dr. Putnam's in showing that it is impossible for a simulator to maintain such a boundary with exactness. The reverse of this does not hold, for the limit of anæsthesia in genuine cases may vary from day to day. The distribution of anæsthesia has also some value in localization.

The sense of locality is tested by making the patient indicate, with his finger, his eyes being closed, the part touched. The sensibility to pain can easily be tested by pricking with a pin. The sensibility to temperature can be tested by breathing and blowing upon the skin, or by applying teaspoons or test-tubes to the skin, heated or cooled. The sense of pressure can be readily tested by the pressure from the finger tips. All these forms of sensibility should be tested, for they may be affected even when the tactile sensibility is normal. Tabes, of course, presents the greatest number of anomalous forms of sensibility. The senses of pain and temperature are lost in syringo-myelia. I saw a case of traumatic neurosis not long ago, where all other forms of sensibility were normal, but the sensibility to pain was lost over one-half the body. In such cases the question of simulation is in the highest degree improbable.

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[1] Concluded from page 600 of the Journal.

Delay in the conduction of sensation should also be noted, by making the patient speak as soon as a touch is felt. This is a symptom seen occasionally in tabes, but rare elsewhere. It is not likely to be simulated, but we have no criterion of its genuineness. If the compasses are used we may sometimes meet with polyæsthesia, but I have never seen it except in tabes.

The muscular sense should be tested in two ways. The patient, being blindfolded, should be told to put one limb in the same position as the other, which has previously been put in some unusual position by the physician. This tests the sense of position. Then the limb should be moved passively, taking hold of it in a plane at right angles to the plane of motion, so as to avoid pressure, and the patient asked about the movement. This tests the sense of motion. We have again no criterion of these tests, but they are distinctly beyond the ken of the average simulator, and hence they have considerable value. Muscular sense may be impaired with the other forms of sensibility in the traumatic neuroses, but the disturbance is less common.

Hyperæsthesia. — For hyperæsthesia in the strict sense of the term, we have no practical test, but what we usually call hyperæsthesia is really hyperalgesia, that is, an increased susceptibility to pain. It occasionally happens that we meet with extreme tenderness of the skin to a slight touch, when deep pressure is comparatively painless. This is by no means a proof of simulation, but it is more common in hysterical affections than in organic disease. The existence of hyperæsthesia is manifested during the test for anæsthesia. At a recent meeting of the neurologists and alienists of South-west Germany, at Baden-Baden, Rumpf reports an expedient recommended by Mannkopf.[6] It is to note the pulse during pressure on an alleged painful spot. If the pressure really causes pain, the pulse will be quickened. This, however, although valuable in cases of marked tenderness I have found does not hold for moderate degrees of tenderness such as we find in many cases of neuritis. The diagnostic value of tender points in neuralgia is considerable, and few would be likely to know enough to simulate them.

Pain. — It may be well to speak of pain, although it is purely a subjective symptom. As a rule the pain of traumatic neuroses is not very severe, but sometimes it may be. Occasionally neuralgia, due very often to direct injury of a nerve, may complicate the symptoms. The lancinating pains so common in tabes, are very rare. In genuine cases, it often happens that the pain leaves little impress on the countenance, so that we cannot take it as a guide.

Paræsthesia. — In a good many cases the patient will complain of various forms of paræsthesia, but, of course, we have no criterion of their genuineness. Two forms only need be spoken of as suggestive. One is, paræsthesia in the ulnar region, which is suggestive of tabes; the other, is paræsthesia in the form of a girdle, which is met with only in organic disease of the cord. The value of this symptom is increased if we get a history of its moving up the body.

Pain in the Back. — I have already referred to the efforts which many patients have to keep the back rigid. Pain in the back probably occurs only when there has been direct injury in that region. It is most commonly due to a traumatic lumbago, when the pain is increased on motion and the muscles are tender on pressure. In a few cases there is a pure neuralgia, ilio-inguinal or lumbo-abdominal, where the pain is more severe but less influenced by motion, and the tenderness is chiefly over Valliex's points. In cases of pure traumatic neurasthenia the pain is not affected by motion, and there is great tenderness over the spinous processes — the "spinal irritation" of former days. For a fuller discussion of this subject, I must refer to the recent paper of Dr. J. A. Jeffries, read before the Massachusetts Medical Society. The determination of the variety of pain is usually easy, but we can judge only approximately of its genuineness. Pain in the back is never the sole trouble, however, but it is a frequent complication in the traumatic neuroses.

SPECIAL SENSES.

Smell. — To test the sense of smell we must employ familiar odors, camphor, peppermint, etc., carefully avoiding irritants like ammonia. If the smell be lost the nasal mucous membrane should be examined. Loss of smell is a purely subjective symptom, and one of little value except when unilateral, when it may be of corroborative evidence in hemianæsthesia.

Sight. — The vision should be tested for each eye separately, with the ordinary test-types. If the vision be diminished, with no ophthalmoscopic changes, a careful test of the refraction is necessary, which requires the training of a specialist. In many cases of traumatic neurosis, the symptoms of asthenopia are manifest, blurring, spots before the eyes, photophobia, and a rapid failure of vision after looking at an object for a few moments. I must refer to special treatises for the tests for feigned blindness.

The color sense is usually unaffected, but it may be impaired in one eye in cases of hemianæsthesia, and it is well to test it with worsteds, according to the usual rules. In one or two cases it has been reported that everything looked yellow.

The ophthalmoscope usually reveals nothing, but it may give objective evidence of the utmost value. In a few cases of traumatic neurosis there has been optic atrophy. Optic neuritis is even more rare, and suggests some cerebral growth or inflammation. Care must be taken not to confuse the redness and obscure outline of the disc seen in hypermetropia for a beginning neuritis.

The field of vision must always be tested, for in many cases of traumatic neuroses it is affected. The rough test with the fingers will do in pronounced cases, but it is of little value in detecting slight changes. The blackboard is better. The patient must sit at a fixed distance from it, within a foot, and the limits of the field marked out. The perimeter is the most accurate and the quickest method of testing, but it is too expensive an instrument for the general practitioner. The field of simple vision, the field for form, should first be tested, and then the field for colors. It will be remembered that the field for form is the largest, then the field for blue, yellow, orange, red, green and violet the smallest. Hemianopsia is not met with except in disease of the optic tract. A peripheral limitation of the field is a common symptom in traumatic neuroses. If the relation of the color fields is disturbed, the trouble is probably genuine. If, on testing, we find the field limited, and its boundary remains the same during our examination, the case is genuine, for from experiment, I believe that it is impossible for the eye to retain a constant imaginary boundary to the field of vision, without some object or mark to aid it. Hence, any marking of the blackboard should be avoided. It must also be borne in mind, that a very marked genuine limitation of the visual field is in no way inconsistent with the patient's getting about with perfect ease.

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[6] Centralblatt f. Nervenheilk., No. 12, June 15, 1889.

Hearing. — The hearing should be tested for each ear separately, and the first test should be with the watch through the air. The patient should be turned about to test the other ear, so that the sound may come from the same quarter of the room, and the watch should be held beyond hearing distance and gradually approximated to the ear. If the hearing be good and the speculum reveal nothing, no further tests need be made. If there be diminished hearing and the speculum shows no middle ear trouble, the ear should be closed and the watch held close by the zygoma, and then pressed on the bone. If bone conduction is retained, the trouble is probably outside the labyrinth. Then the time during which the tuning-fork can be heard through the air and through the bone should be noted. In middle ear trouble the bone conduction is longer. In the traumatic neuroses there is often diminution of hearing, unilateral in hemianæsthesia, but deafness is very rare. Feigned deafness in one ear may be readily detected by plugging the flexible tube of an ordinary binaural stethoscope and making the patient listen through it. By reversing the tubes of the end-piece, the sound can be conveyed to either ear without his knowledge. For further tests, I must refer to the special treatises, but enough has been said to guide the examiner in making a tolerably accurate estimate of the patient's power of hearing.

Taste. — Taste must be tested by applying salt, sweet, sour and bitter solutions to the front and back of the tongue. Loss of taste is rarely noted, except on one side in hemianæsthesia.

THORACIC SYMPTOMS.

Examination of the lungs usually reveals nothing of importance. Examination of the vascular system may afford objective evidence of the highest value. The heart's action is rapid, weak, and perhaps irregular, in the traumatic neuroses; adventitious murmurs are not often present; the pulse may later show signs of arteriosclerosis; the skin is cold, cyanotic, and at times œdematous. These symptoms are common and, of course, incontestable, and the recent autopsy of a case of traumatic neurosis, by Sperling and Kronthal,[7] shows their importance in the pathology of these disorders.

ABDOMINAL SYMPTOMS.

The patient usually reports loss of appetite, indigestion, and constipation, symptoms of which we can seldom get any objective evidence.

GENITO-URINARY SYMPTOMS.

Disturbance of micturition is not uncommon. As a rule, there is simply weakness in passing water, but occasionally there is actual incontinence. The latter is important, especially if associated with incontinence of fæces, as indicating organic nervous disease. In many cases we can observe the process of micturition, and note the strength of the stream, the existence of dribbling, and the stains and odors of urine on the clothing. If the patient be a man over fifty-five, a soft rubber catheter should be passed after micturition to see if the bladder be wholly emptied, and that there is not the incontinence of retention caused by an enlarged prostate.

Impotence is a favorite symptom in the courts. We cannot test it, and, even when it is present, it has slight value, for it may occur from all sorts of psychical conditions, or from simple weakness. Priapism is occasionally a valuable symptom in injuries of the spinal cord.

Menstrual disorders are so common in all conditions of debility, that they afford little information in these conditions. They may possibly be due to some displacement caused by the injury, which can be readily detected by a vaginal examination.

Such, then, should be the methods of examination. A few words remain to be said in regard to the results and to the important question of simulation.

The diagnosis of the typical forms of nervous disease which may follow injury, transverse myelitis, paralysis from brain disease, neuritis, tabes, etc., is usually comparatively easy. It is only in these obscure cases of "concussion," the traumatic neuroses, that trouble arises.

We may, in such cases, obtain certain incontestable objective symptoms: oculo-motor paralysis, immobile or unequal pupils, nystagmus, contractures, muscular atrophy and degenerative reactions, ankle clonus, difference in the reflexes on the two sides, loss of knee-jerks, loss of plantar or cremaster reflex, sharply defined anæsthesia, optic atrophy or neuritis, contracted fields of vision, and disturbances of the circulation.

In the average case of alleged injury to the brain or spinal cord, we may have one or more of these purely objective symptoms, or they may all be absent. We find, moreover, a set of subjective or semi-subjective symptoms, many of which are elicited only by careful search, symptoms not very pronounced, but rather characteristic, and we usually find many such symptoms present in the individual case.

The cases presenting such symptoms, these traumatic neuroses, are usually, I believe, grave, and the prognosis is distinctly unfavorable. It is not my object here to discuss their nature, but such is the opinion of those observers who have studied the subject most thoroughly.

The assumption is often made, however, that the majority of these cases are fraudulent, or vastly exaggerated; that most of the symptoms are simulated, and that the patients get well when damages are paid. After a pretty thorough examination of the recent literature upon this subject, I am rather amused to find scarcely any support for this theory from neurologists. The allegations of fraud and the reported fraudulent cases come from surgeons, and often too from railway surgeons, whose bias is most evident. The surgeon's training and experience has made him familiar with objective phenomena in their most pronounced form; he is seldom an expert in nervous diseases, and, therefore, by his training and mental habit, he is incapable of appreciating at their full value the more subtle symptoms which are often so pregnant with meaning to the neurologist. I believe it incredible and practically impossible that an ordinary man, often uneducated and certainly without medical knowledge, should invent a symptom-complex which is the same in Berlin, in Leipzig, in Erlangen, in Boston, and in country towns in Massachusetts; that this symptom-complex should be made up of a multitude of symptoms, often revealed only on special methods of examination, unfamiliar even to the general practitioner; and that this man should, for hours at a time and on repeated occasions, successfully feign, not only all these symptoms against the keen examination of an expert, but also a perfectly definite and consistent psychical symptom-complex with all its details of expression and manner. As I said in the beginning, the simulator contents himself with a few striking symptoms, he paints them in flaring colors — not in the subdued tones common in traumatic neuroses —and you never have to search for them.

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[7] Neurolog. Centralblatt, Nos. 11 and 12, June 1, 15, 1889.

One argument, in support of the view that most of these cases are fraudulent, is so amusing that I must quote it: "Injuries that are pure accidents, or injuries where a corporation of some character is not at fault, never result in concussion of the spinal cord."[8] The context shows that by concussion of the spinal cord is meant these cases of traumatic neuroses. In the light of reported cases and of the recent contributions to our knowledge of this subject, such a statement can come only from extreme partisan bias or absolute ignorance.

In conclusion I will quote a few words from a recent communication by Oppenheim,[9] whose opinion is based on wide experience, as embodying my own views: "In the majority of cases," he says, "the symptoms unite to form a type of disease which can not, in the present state of our knowledge, be mistaken, from its significance, its clearness, its objective character, and the sharpness with which it is defined. I will state only this, that, in the policlinic, where I examine such cases before a large audience of students and physicians, in almost three-quarters of the cases I develope the diagnosis in a convincing manner on the first examination, so that I often hear the question, 'How is it possible that such diseases could be regarded as simulated?'" In the remainder, he adds, repeated examinations, or the crucial test of hospital residence, will enable the physician to decide.

DISCUSSION.

After the reading of this paper Dr. G. L. Walton made the following remarks:

I am glad to hear the reader state that no neurologist stigmatizes all these nervous cases following accident, as frauds. Such sweeping views do not tend to advance our knowledge of this difficult subject. We should, however, avoid erring in the opposite direction, and assuming, because it is possible for nervous symptoms to follow injury, that all persons claiming such symptoms are genuine sufferers, and that simulation is rare. That nervous shock may accompany and follow trauma is a self-evident fact; and that the innumerable symptoms of nervous debility may persist for a longer or shorter time, either in the form of neurasthenia, hysteria, or hypochondria, is shown by patients who have no claim for damages as well as those who have. It is, however, unfortunately true that many fraudulent claimants assume these subjective nervous symptoms, in lieu of more definite disorder. Our task is to discover, as well as we can, into which category each case falls.

I doubt if general experience will corroborate the statement that most cases, after a temporary improvement following the termination of the trial, grow again worse. I should hesitate to accept a view so widely at variance with that which Page has deduced from a large number of cases observed after a period of years, that the general tendency of these nervous symptoms following trauma, with certain exceptions is toward recovery, after the anxiety attending litigation is over.

As to the question of reliability of evidence given by the family and friends, as compared to that of the occasional observer, I should hardly at once assume that the former was more reliable simply through the greater opportunity for observation; it would depend largely upon the character of the evidence in the given case. For example, if the family testified that the patient had not been able to leave the house for six months, while a neighbor testified to having seen her hang out clothes within that period, it would seem to me that the latter testimony was quite as worthy of consideration as the former, especially if it were apparent that the neighbor had no interest in the case. There are certain symptoms which are of great value in cases where no occasion for simulation exists, which become comparatively valueless in cases under litigation. For example, swaying with the eyes shut is easily simulated, as well as a feeble grasp, whether measured with a dynamometer or by the hand of the examiner. It is also easy to complain of a feeling of constriction about the waist, or of prickling in the course of certain nerves. Nor should I lay too much stress on the theory that no simulant would think of claiming numbness on one side of the body following a blow upon one extremity. Medical literature is easy of access, and persons injured in railway and similar accidents are certainly, no less than other patients, liable to make their complaint a subject of constant conversation, and to gather all available information concerning it. We should also be chary of assuming at once that because a patient claims only *slight* numbness, *slight* weakness, *slight* loss of hearing or vision, that the claim is genuine, inasmuch as this degree of loss of function will naturally be pretended by some who would hesitate to make the bolder claim, as well as by those who realize the greater ease with which such a moderate claim may be sustained under critical examination. In fact, we may be at any time led astray if we have too fixed conceptions of what the modern malingerer will or will not claim, for the knowledge that we have such conceptions may easily serve as a guide to the skilful simulant in carrying out the deceit.

A word regarding the diagnosis of organic from functional disease, apart from the question of simulation. Swaying with the eyes closed, absence of tendon reflex, and a sense of constriction about the waist do not always indicate organic disease. A patient may sway with the eyes closed through simple weakness, the absence of reflex is sometimes found in health, and the constriction about the waist is sometimes complained of in hysteria and hypochondria, as well as in disease of the spinal cord.

Clinical Department.

AN UNUSUAL CASE OF PNEUMONIA.

BY WM. PORTER, JR., M.D., HARTFORD, CONN.

A prominent judge and lawyer, in somewhat reduced health from overwork, was taken with a severe chill at his office, October 1, 1888. Evening temperature 103°, with intense headache as the only other symptom of importance. The following morning a circumscribed pneumonia was located in the right lung. During the following week the symptoms were favorable, but it was then found that resolution was not taking place, but instead, the disease was slowly spreading toward the apex. From this time until the third week in November, the history of this case is one of succeeding attacks, some severe, others slight, until the disease had extended entirely over both lungs, including the apices.

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[8] Judd: Jour. Am. Med. Assoc., August 10, 1889.

[9] Neurolog. Centralblatt, August 15, 1889.

Each exacerbation was accompanied by a rise of temperature, though at no time was it as high as that following the initial chill. The examinations of the lungs during those weeks were most interesting, showing areas of consolidated tissue, with surrounding tracts in the various stages of resolution.

The treatment was largely expectant, quinine, iron and the iodides being used as seemed indicated; the most careful attention being constantly given to the nourishment and the state of the digestive organs. Large amounts of milk, and the strongest beef preparations were well borne, and stimulants were used in increasing amounts, but with every help, weakness increased, the weak heart so characteristic of pneumonia being fully developed, and the danger of fatal heart-failure imminent.

At this time inhalations of Walton's oxygen and nitrogen monoxide were begun, and proved of great value. The inhalations were continued for three to five minutes, and repeated every hour, or two or three hours, as seemed needed. The effect of each inhalation was most grateful to the patient, giving a sense of refreshment in marked contrast to the extreme weakness that was present. It was a conscious aid during the process of digestion. The action of the heart was improved, the pulse being stronger and more regular for some time after each inhalation; and as the days passed, it became evident that the lungs were clearing up more rapidly.

Three cylinders of the gas were used, its value in conditions of extreme debility and heart weakness, as well as in cases where dyspnœa and cyanosis are present, being fully demonstrated.

This case was seen repeatedly in consultation by Dr. G. R. Shepherd of this city, and once by Dr. E. G. Janeway of New York; and made a speedy and satisfactory recovery.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

Regular Meeting, Monday, November 25, 1889, the President, Dr. W. L. Richardson, in the chair.

Dr. W. W. Gannett showed a specimen of

ULCERATIVE ENDOCARDITIS.

Dr. M. H. Richardson showed

AN ABDOMINAL TUMOR

removed three days ago, which presented features of rarity and interest. The patient, a thin, spare, nervous American woman of forty-seven, was brought to the hospital, November 6, 1889. She was extremely weak and much emaciated. Pulse was 102, respiration 20, and temperature 100.4°. She was unable to speak above a whisper, and vomited constantly. Abdomen enlarged, but not particularly tender. She said that she had had peritonitis for six weeks. On account of her condition no thorough examination was attempted. Her vomiting was checked by mustard leaves, and she was stimulated; she received also suppositories of belladonna and morphia. On the following day she was enough better to give a more detailed history of her illness. The family history was negative. Her previous personal history was good. Her general health had been good till about twelve years before when she began to suffer from the following train of symptoms: — nausea, pain in the right inguinal region, slight swelling there, occasional nausea and vomiting, slight headaches and tendency to constipation. Up to six weeks before admission to the hospital these symptoms had gradually increased in severity with occasional acute exacerbations of pain in the right inguinal region. For the past six weeks has been bed-ridden. Has had entire loss of appetite and much fever. Has had vomiting, headache, and intense pain radiating from the umbilicus to the left iliac crest. Extreme weakness and much loss of strength and weight.

Examination: Patient very weak and emaciated. Lungs and heart normal. In the lower part of the abdomen a large mass the size of a man's head, the centre of which is rather to the right of the median line, and nearly filling the pelvis. Tumor is very hard, mostly smooth, with one or two small nodules on the sides. No fluctuation. Vaginal examination not made till day of operation. Urine high-colored, very acid; specific gravity 1,016; considerable sediment; large trace of albumen; sediment contains pus, much blood, large and small round renal cells, granular epithelium from the kidney; bladder cells; fat and granular casts.

During the next two weeks the patient improved very much in her general condition, especially as to the condition of the kidneys. She was able to sit up in bed. The temperature became normal, and it seemed best to take advantage of her improvement for an operation, which every one supposed would be an abdominal hysterectomy.

November 22d, under ether anæsthesia, a vaginal examination through a very tight hymen, showed that the tumor was not connected with the uterus at all, or if at all, by the loosest kind of attachments. By median incision the tumor was exposed, and found recently adherent to the anterior abdominal wall. These adhesions having been easily separated, an exploration showed that the tumor started from the right kidney, and I was prepared to remove that organ. Having enlarged the wound sufficiently to deliver, the mass was found to be attached to the fundus of the uterus by a long pedicle, made up of the Fallopian tubes and the round and broad ligaments, with enormous blood-vessels. The whole pedicle was not larger than the usual ovarian-cyst pedicle. The stump having been cauterized and tied and covered with peritoneum by means of fine catgut sutures, was returned to the abdominal cavity, and the wound united by wire sutures.

Since the operation there have been no unfavorable symptoms. To-day there has been escape of gas by rectum, and the temperature is just above normal.

STONE IN A CHILD OF TWENTY MONTHS.

Dr. M. H. Richardson showed two specimens of stone removed from the bladder. The first consisted of two small uric acid calculi which had been removed by lateral perineal section from a child of twenty months. Great difficulty was met with in reaching the stones after the bladder had been opened. The operation was done very deliberately, in order to check the hæmorrhage as thoroughly as possible, and to avoid, as far as could be, injury to the rectum and seminal vesicles. The patient made a rapid recovery.

A FOREIGN BODY IN THE BLADDER CAUSING STONE.

The second case was that of a man, thirty-six, who had been seized with an attack of hæmaturia two months before entrance. The history in the case was negative. There had been no venereal disease. He never had passed any fragments of stone. The urine became foul shortly after the attack of hæmaturia. There were the usual signs of stone, — pain in the glans penis, tenesmus, pain on riding, etc.

I removed the stone on Saturday, November 23, 1889. The only unusual feature in the operation was the difficulty in withdrawing the lithotrite after the first crushing. It was impossible to close the blades of the instrument on account of something elastic between them which came up against the opening of the urethra so firmly as to suggest a large fragment caught transversely. It was suggested that there might be a soft catheter there. At the end of the operation when everything else had been removed I caught this object in such a manner that I was able to withdraw it, and found the eraser of a common lead pencil. The washings were found to contain several fragments of the graphite of such a pencil, with one small piece of wood. No considerable amount of wood however, could be detected, nor could the metallic end be felt. The question is an interesting one as to the fate of these portions of the pencil. I examined him time and again to detect anything remaining, sending for him after he had once left the operation room, but it was impossible to detect the slightest evidence of a foreign body.

The patient stated to me to-day that he had been in the habit of using a small piece of pencil two and a half inches in length with string attachment, for the purpose of aiding micturition. The pencil was made of wood and had a small metallic end containing a rubber eraser. The pencil was sharpened, and was introduced point first. Fourteen weeks ago the string broke, and a few weeks later he noticed that the urine had become foul. Shortly after that the first symptom appeared.

RAPID RECOVERY AFTER LITHOLAPAXY.

A third case was interesting from the fact that the patient after having a stone weighing 180 grains crushed and removed by litholapaxy was discharged well, and sent home on the second day.

IMPACTED GALL-STONE, ULCERATION INTO DUODENUM.

Dr. E. G. Cutler reported the case of a woman of forty-five, previously healthy, who, in February 1889, while at work, was suddenly seized with severe colicky pain in the upper right abdomen, with faintness and vomiting. Severe pain lasted three or four days and was followed by a dull ache in the same region, and accompanied by jaundice. No gall-stones were passed. Since then she had never been well, but had suffered from anorexia, weakness, loss of flesh, and persistent jaundice. At times she had had severe paroxysmal pain in the right hypochondrium with increase of jaundice, high-colored urine, clay-colored stools. No chill or vomiting, bowels usually constipated. A fortnight before entrance to hospital during a paroxysmal of pain and jaundice she was treated by mercury, and was profusely salivated. On entrance, and for three weeks subsequently there was some fever and two chills with several days interval between them. Pain in right hepatic region was constant, increased by pressure. The liver was enlarged, and reached two fingers' breadth below the ribs, border regular. Several times some blood was passed at stool. The stools continued to be clay-colored till recently when there was a discharge containing bile. Soon the liver got smaller. Emaciation continued, and the patient became less icteric, but ascites developed and she finally died of asthenia. She was seen by Dr. Cabot several times with reference to operative interference, but it was not deemed a suitable case, as no enlargement of the gall-bladder could be felt, and the case had lasted a long time.

The diagnosis of impacted gall-stone, with its consequences and subsequent ulceration was made, and it was thought probable that there might be some secondary interstitial hepatitis, and possibly some small abscesses. The autopsy proved that the diagnosis was partially correct.

Dr. Whitney in showing the specimen said: One of the interesting points Dr. Fitz wishes to call attention to, is the size of the liver which is considerably under normal. On section, the marked feature is this yellowish discoloration in points and patches with large openings which at first sight are suggestive of portal vessels, but are in reality dilated gall-ducts, and all these yellow points are evidences of retained bile. The liver is increased in density, due to an increase in the connective tissue with atrophy of the liver cells. In passing down into the duodenum an opening is found which at first suggests the possibility of its being that of the bile-duct. When Dr. Fitz pressed upon it pus mixed with bile exuded, but on opening the duct of the pancreas he was able to show that the common duct which opens also at that point was considerably lower down. Upon cutting into the point where the bile and pus were noticed a cavity was found in which was a calculus the size of a robin's egg. On further examination this calculus was found to be not in the gall-bladder or in the duct, but to lie outside of them where it must have come either from ulceration of the gall-bladder or of the duct, it is impossible at present to say which; but it evidently obstructed at some time the outflow of bile, causing retention and, as a consequence, atrophy of the liver and dilatation of the duct. In addition to this condition there was found a chronic diffuse nephritis which probably in part accounted for the patient's death.

Dr. E. G. Cutler read a paper on

SOME HOSPITAL CASES OF TYPHOID FEVER.[1]

Dr. H. C. Ernst: It seemed to me that it might be of interest to speak of the grounds that the bacteriologists have for claiming that the specific organism of typhoid fever is known, and to give some slight description of what that organism is. The grounds for believing that the bacillus of typhoid fever has been identified will probably never be complete, for the reason that no such experiments as those of the causal connection of bacteria with a pathological change, are ever absolutely completed until successful inoculation experiments have been obtained with pure cultures of the suspected organism. This is probably not possible with the bacterium that is suspected of producing typhoid fever, for the reason that no disease precisely resembling it is known to occur among the lower animals — and until the time comes when it will be possible to make inoculations upon man, one link in the chain of evidence will be wanting.

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[1] See page 621 of the Journal.

However, the constant occurrence of this special bacillus in the disease known clinically as typhoid fever, its appearance with the beginning of the disease, its occurrence in enormous numbers in the liver, kidney, spleen and intestines during the height of the malady, its constant and gradual diminution in numbers as the sickness becomes better, and it's absolute disappearance sometime before convalescence is complete, all seem to indicate without much question that the special organism known as the typhoid bacillus is the real cause of the disease.

At any rate, its presence is constant in this process; it has never been found elsewhere, and its occurrence at the beginning of the disease, with its disappearance as the disease itself improves, forms such a chain of evidence that I think all bateriologists are agreed in considering it to be the cause of the disease. Of course, one of the especial points of interest to the practitioner is as to what value this organism has in the treatment or diagnosis of typhoid fever. With this in view a great many experiments have been made to discover it in the fæces, and the so-called "spleen-punctures" have been made to obtain material for microscopic examination and the verification of the diagnosis of typhoid fever. These and various other attempts have been made to make the organism of value in clinical work as a diagnostic feature. That its value in this direction is great is not true, and probably never will be for the reason that there is no way by which it can be easily differentiated from certain other organisms, and notably the bacillus of Emmerich, the so-called "Naples bacillus," which he declared to be the cause of Asiatic cholera. These bacteria resemble each other closely under the microscope and in every other way except in their development upon sterilized potato, and it is only by watching its development upon this nutrient-medium that the typhoid bacillus can be differentiated from other bacteria. By making pure cultures of the "Naples bacillus" upon sterilized potato, there appears a very sharply-marked greenish, or brown colony of profuse growth; whilst in the case of the typhoid bacillus, absolutely no apparent growth is seen even after three or four days at blood-temperature on potato. Not unfrequently, however, when the platinum needle is moved along the surface of the potato, there is seen to be a very thin sticky film raised up by it, and this film is seen to be made up entirely of the bacilli if a portion of it be placed under the microscope, This is the only way by which the typhoid bacillus can be identified out of the body, and to make it certain that one is dealing with that organism, experiments must be carried on for ten days to three weeks, and any such method is valueless for diagnostic purposes. But when it comes to the question of prophylaxis and the methods of treatment, it seems to me that the study of this organism, and a knowledge of its life-history under artificial conditions, opens up a great many roads which we have not had before, because it is not too much to say, in general, that the life-history of the bacteria which are shown to be possessed of pathogenic powers, their behavior to different reagents, to varying conditions of temperature, moisture and the like, furnishes a fairly plain, if not an absolute guide to the direction that clinical methods should take in the treatment of our patients.

Some of the peculiarities of the typhoid bacillus are that it possesses a certain *resisting* stage. Whether the refracting bodies which appear in its length under certain conditions of development, are the same thing as the ordinary spore of other forms of bacteria is not yet definitely settled, but it is certain that the organism does have a certain amount of resisting power to different forms of germicides, and to the different methods of applying heat. This resistance is not very great, — it will not withstand drying for any length of time, and it is destroyed with comparative ease by the application of moist heat.

Another thing that our knowledge of this bacterium has taught us, is, that the only method of infecting from typhoid patients, absolutely the only method of transmission of the disease from one person to the other, — is through the fæces. The occurrence of rose-spots, of laryngeal ulcers, of the various forms of abscesses and phlegmons which run a concurrent course in typhoid fever, have been shown definitely not to be due to typhoid bacillus at all, so that there is no fear of the transmission of the disease from them. They are the result of a double infection, and are produced by various forms of bacteria which have nothing to do with the typhoid bacillus and which obtain entrance because the vitality of the body is lowered by the previous presence of the typhoid bacillus in the system. The special source of infection is, therefore, from the dejecta, and the attempts to stamp out the disease, to prevent its transmission from one person to another must be directed to the proper treatment of the fæces.

In a few cases the bacillus has been found in the urine, but that is of rare occurrence, and only happens when the kidneys are very much degenerated.

I spoke of the fact, that, the link of inoculation experiments was absolutely wanting, but that is not quite true, because some four years ago Tayon reported to the French Academy of Sciences certain experiments he had made upon himself and some of his students with this "Eberth's" bacillus. As the result of the inoculation of himself and the students with minute portions of a bouillon, in which the bacillus had been cultivated, there resulted a disease which seemed to him to be, or rather to resemble, typhoid fever. There was a general malaise, loss of appetite, with rose-spots in one or two cases, I believe, loose dejecta, and a gradual convalescence running over two or three weeks. These experiments seemed to him to be the practical proof that the typhoid bacillus was actually the cause of typhoid fever, and he thought that he had furnished a true inoculation experiment. It may be questioned, however, whether these experiments were of the value that he was inclined to give them, for he furnished no control experiments, and it is also an open question whether the results were not such as might have been obtained from other bacteria than the typhoid bacillus.

Brieger was the first to show the presence of the "typho-toxicon" in the medium in which this bacillus had grown, a "leucomaine" which is the result of its development, and which, when inoculated, produces marked toxic effects, very much more so than when the pure cultures themselves were used.

In the microscopic observation it is found that the bacillus resists the action of aniline colors much more than the ordinary bacteria. It can only be stained with concentrated solutions of the nuclei-staining colors applied for a long time, ten minutes or more. In sections, Ziehl's carbolic acid fuchsin solution should be used, and the staining be carried on for from twelve to twenty-four hours, the section then to be washed in water and afterwards in very dilute acetic acid.

As regards the resistance of the bacillus to various reagents, the best work has been done by Carl Seitz in Koch's laboratory. He found that the various solutions of calomel, kairin, chloride of calcium, iodide of potash, etc., do not destroy the vitality, but simply exert an inhibitory effect on the growth of the bacillus, and that when diluted to any extent the organism went on growing as well as before. The only thing which actually destroys its vitality quickly is (according to him), naphthaline, either solid or in solution.

One of the most marked and commonly suspected sources of the origin of typhoid fever is drinking-water, but I am of the opinion that it is not as commonly the cause of the disease as is supposed, for the reason that the bacillus does not develop well in ordinary water. Its vitality is not destroyed but it does not grow with any great rapidity. One thing it does develop in with great rapidity, milk. It will develop in milk with more rapidity than any other nutrient-medium, and if it should happen that water from a contaminated well, containing only a few of these bacilli, should be used to dilute the milk in its passage from the cow to the consumer, this passage occupying only a few hours, it would be sufficient to produce an enormous number of the bacilli in the milk itself.

The bacillus occurs in large masses in the mesenteric glands. It only appears in the intestinal walls, in Peyer's patches, in the follicles of Lieberkuhn in scattered collections, but particularly in the mesenteric glands, and occasionally in the spleen, liver, and kidneys it appears as the so-called "knots," the single bacilli never appear in the cells of the various organs but always between them.

DR. F. MINOT: There are one or two points in Dr. Cutler's paper I should like to have seen alluded to, namely, the behavior of typhoid fever when it runs on for a very long period; the prognosis of those cases, and the value of treatment. I suppose all of us have seen a great many such cases, lasting several months. Looking over the notes of a good many cases of my own before coming to this meeting, I came across several of this kind; in one a patient was taken ill in March, and she was not convalescent until July 9th, and was not able to be moved into the country for several weeks later. It has been my fortune to see a pretty large number of such cases, and one thing has struck me as remarkable about them, that so many recover, even after months of extreme prostration. I do not speak of relapses, which are of short duration, usually, and the great majority recover, but, of cases where there has been no relapse at all, and the symptoms continue uninterruptedly for months. Where death does take place it is probably from failure of the heart's action. It is important to remember this point, because it should influence our treatment to a great extent. The raising up of such patients suddenly in bed, or the excitement produced by the visits of friends, or the anxiety and agitation produced by bad news are often sufficient to bring about a fatal termination. With these exceptions I think a surprisingly large number of such cases recover.

Dr. Cutler alludes to cystitis as a not infrequent symptom, and to its connection with catheterization. I have no doubt that many such cases are the effect of carelessness in the use of the catheter. In one case, however, under my care a few years ago, there was a cystitis following the use of the catheter, in which pains had been taken to prevent any infection; the catheter was always kept, when not in use, in a solution of carbolic acid, and the hands of the nurse and of the physician were cleansed with great care before the instrument was used; notwithstanding this the patient had an attack of cystitis, which, however, yielded very easily to injections of a solution of boracic acid, two or three injections being sufficient to relieve the patient entirely. Here the infection probably came from the bed on which the patient lay or possibly from some of the urine remaining on the outside of the urethra.

Dr. Cutler alludes to the treatment of typhoid fever by cold baths. It is a very difficult process to carry out even in the hospital, almost impossible in private practice; and yet from the favorable results in Germany and in France it seems desirable that some method should be devised by which it can be applied easily and inexpensively. This subject reminded me of a notice I had seen in a work published several years ago, written by one of the most eminent American physicians that ever lived, Dr. Nathan Smith, who was professor of the Theory and Practice of Physic and Surgery in Yale College. I brought the book here in order to show that the method was adopted and practised in New England as early as 1798 with alleged success. I will read a few lines from this book: "The body was stripped and the shirt divided down before so as to expose his body, and about a quart of cold water was sprinkled over it by applying it with the hand: the sheet then thrown over him." In other cases a much larger quantity was applied. A gallon for, instance, was poured directly over the patient several times during the day. He speaks of the method especially: "The method which I have adopted is to turn down the bed-clothes and dash from a pint to a quart of cold water on the patient's head and body. . . . If the body should be very hot he may be turned on the side and the water dashed upon the back." He gives details of three cases as interesting specimens of the way in which the method was applied and of the effects: "but," he says, "I could detail a great many additional cases where the good effects of cold water were as apparent and immediate as in the cases just cited; and in no instance where I have used it or seen it used, has it done harm. There are but few cases in which it may not do good in some stage of the disease." He was first led to use it from a hint from Dr. Robert Jackson's work on "Fevers of Warm Climates," and the first time he used it was in 1798.

With regard to the mental condition of patients after typhoid fever, Dr. Cutler has alluded to one or two cases in which there were delusions. I have seen some remarkable cases of this kind even in patients not of nervous temperament. One was a lady who after she was convalescent, and sitting up, one day inquired whether I had my buggy at the door. I told her I had. She wished I would go down stairs into the library and take as many books as I could put into the buggy, because her husband had lost all his property and the creditors were coming that day to take possession of everything in the house, and I should never get my pay. She remained in that state a week or ten days but recovered perfectly and has been well ever since.

Another case was that of a young gentleman who had repeated abscesses —a case of pyæmia, of course— in various parts of the body, among others in the lungs, by which he was two or three times in great danger of being suffocated, who slowly recovered after taking enormous quantities of stimulants. The most remarkable thing about the case was that the patient was mute many weeks after his convalescence, during which time he would not open his lips though he understood what was said and would make a gesture of recognition. The case was like some severe cases of chorea in which the patient remains mute a long while after recovery from the acute disease.

In some cases the diagnosis between typhoid fever and acute miliary tuberculosis of the lungs, with probably meningeal complication at the same time, is difficult. One or two hospital cases have occurred under my observation: one a patient who died after a fortnight's illness; she was brought in with the diagnosis of typhoid fever, but with symptoms which pointed very strongly to meningeal complication and probably acute miliary tuberculosis of the lungs. Unfortunately no autopsy could be obtained in that case and the real nature of the disease could not be proved. I think it is not a very uncommon thing for a good deal of doubt to exist in the mind of even an experienced practitioner as to whether the patient before him is suffering from typhoid fever or from acute miliary tuberculosis. In this latter disease there is often the stupor of typhoid fever, the dusky appearance of the skin, owing to the general cyanosis produced from the pulmonary tuberculosis, sometimes diarrhœa, occasionally cough and possibly a few râles in the chest, and occasionally a rash resembling somewhat that of typhoid.

Dr. Geo. B. Shattuck: The subject which Dr. Cutler has presented to us to-night, though certainly not a new one, is one of those old subjects which always respond well to new search-lights. This arises largely from the inherent character of the disease. There is certainly hardly a disease in which different individual patients, or different series of cases or different epidemics present such great differences and varieties in clinical appearances and in results, and I think this naturally must lead us to great hesitation in dogmatizing or even in generalizing from any small number of cases. I don't mean in saying that to depreciate the value of such contributions. Their value is increased by putting them together, especially where series of cases occurring under the same conditions can be considered as a whole.

A few words with regard to the enlargement of the spleen as a diagnostic point in determining relapse and recovery, which has been touched upon to-night and which was also brought up when the same subject was discussed at the meeting of the Suffolk District Society. I had some cases at the City Hospital noted at random with reference to the spleen.

Case I. Spleen on entrance at the eighth rib. Temperature normal thirty-two days after entrance, on the thirty-seventh day of the disease, as nearly as we could estimate, and that of course, with our patients is rather vague; at that time the spleen was at the same level as on entrance.

Case II. Spleen at the seventh rib. Edge felt below. Temperature normal twenty-seven days after entrance, the forty-fourth day of the disease as we estimate it, and at that time the spleen was at the eighth rib.

Case III. Spleen at the seventh rib on entrance. Edge felt. Temperature normal fourteen days afterward, the twenty-second day of the disease and the spleen still at the seventh rib.

Case IV. Spleen at sixth rib. Edge felt. Temperature normal twenty-two days after entrance, the twenty-eighth day of the disease, and at that time the spleen at the seventh rib.

Case V. Spleen at the seventh rib on entrance. Edge felt. Temperature normal twenty days after entrance, the forty-first day of the disease. Spleen then at the eighth rib.

Case VI. Spleen at the seventh rib on entrance. Edge felt. Temperature normal twenty-eight days after entrance, the forty-second day of the disease; spleen at the seventh rib.

With reference to the diminution of the spleen at convalescence I have several cases. Case I, Spleen at the ninth rib a day after the evening temperature became normal. Case II, Spleen at the seventh rib. Temperature ranging about normal fourteen days: patient sitting up and the diet increased. Case III, Temperature below normal ten days. Spleen at ninth rib. Case IV, Spleen at eighth rib eight days after temperature was normal, etc. Case V. Spleen at seventh rib. Edge felt below. Temperature subnormal for six days and about normal for three days. Diet increased and patient steadily convalescent to recovery. Such cases at least go to show that the splenic tumor is a variable factor as a diagnostic point in regard to relapse or to convalescence.

I have two charts I could not resist the temptation of presenting to the Society. It so chanced that two patients who had continuously high temperature and were quite sick fell out of bed. From the date of this occurrence there was in each case a steady amelioration of the symptoms to recovery. Can it be, as is now claimed for cold baths, that the shock or stimulation to the nervous centres was the cause of the improvement!

I have used nitroglycerine and cocaine as cardiac stimulants in quite a large number of cases with great satisfaction. The results which I have obtained coincide very well with those which Dr. Cutler has mentioned in his paper. I have made a renewed use of digitalis and it has merely confirmed the impressions I have had before, that, as a rule, it is an undesirable thing to use unless in the late stages of typhoid fever.

I am familiar with the little book by Dr. Nathan Smith, published in 1824, to which Dr. Minot so aptly alluded. The statement it contains of his use of cold water in the treatment of typhoid fever in the later part of the last century is curious and instructive. A reference to it is given in the article on Typhoid, which I wrote for "Wood's Supplement to Ziemssen's Cyclopedia" in 1880.

I have purposely used antipyretics less than formerly in order to try to compare cases with those in previous years. Where I have used them I have been extremely pleased with their effect; and it seems to me that with such an antipyretic as phenacetin we can graduate the dose in such a way as to get very pleasant and comforting results with almost no danger. I cannot see myself that the patient is exposed to anything like such risk from collapse with the use of phenacetin as he is with the use of cold baths. Certainly one is not called upon to counteract the effects of phenacetin by stimulants, as those who advocate and use cold baths assure us that they constantly are in using the cold bath. I should modify but little what I had to say with regard to antipyretics in the article on Typhoid Fever in Wood's Hand Book which was written three or four years ago.

Dr. F. C. Shattuck said that he considered the diazo-reaction of Ehrlich of corroborative, but by no means of absolute value. He recalled one case of severe and undoubted typhoid under his care in the hospital with a relapse, also severe: in neither the primary attack nor in the relapse was the diazo-reaction obtained though repeatedly sought for.

The reader is to be congratulated on the fact that in all his fatal cases there was so good a reason for the death, namely, hæmorrhage or perforation. The large percentage of relapse is of interest, especially in view of the freedom from relapse which Dr. Folsom reports in his cases this season, a freedom partly due to the fact of his adherence to the view that, to constitute relapse, there must be complete defervescence of the primary attacks. Even this postulate was met in a fair proportion of Dr. Cutler's cases.

The speaker had become somewhat suspicious of typhoid fever of long course and asked Dr. Minot whether he were sure that one or more relapses had not taken place in these long cases to which he had alluded.

Dr. Minot: All I can say about that is that in a good many of those cases no charts had been used. Some of them were old cases. In others where charts had been used, in very long cases as far as my memory goes there were no relapses: at least no such distinct relapses as we see in other cases, not of that very long duration. I do not think that all these cases were typhoid fever from the beginning to the end. In many of them the essential part of the disease had passed away and the patients were left in a state of extreme prostration. They might be compared to a ship which has gone through a tremendous storm, and stripped of its mast and sails, lies almost like a log until it gets into port.

Dr. G. B. Shattuck: I think the question of relapse with reference to Dr. Folsom's cases is a good deal a question of definition and interpretation, very much as one would call a disease contagious and another wont. It was partly with reference to this that I reported these cases, calling attention to the spleen. I think Dr. Folsom would not consider a case a relapse unless all the symptoms of typhoid fever were absent a certain time. Although the temperature might be at normal several days, yet if the spleen remained at the same position of enlargement he would rule out the name relapse; and that applies to the case on his chart to which I think Dr. F. C. Shattuck refers.

Dr. Ernst: In regard to water as being a favorable nutrient-material for the typhoid bacillus, I think that Dr. Shattuck must have misunderstood me, but first in regard to the occurrence of typhoid fever from typhoid bacilli scattered on the snow. In the presence of cold the bacilli would retain their vitality for a very long time, — an indefinite time, in fact: the point is that they do not develop, not that they are killed. In contrast to this Plymouth epidemic was the one in Providence about a year ago. The dejecta of several typhoid patients was washed down by severe rains into the Seekonk River from which Providence derives its water-supply, — the cases occurring four or five miles above Providence itself. The chart of the epidemic as shown in the report of the Providence Board of Health is very remarkable. The number of cases jumped in the course of ten or twelve days from practically none at all to 160 or 170, in certain districts of the city; and the water was, to my mind, responsible for the increase, because filters sent to me for analysis and examined in my laboratory as well as others sent to Dr. Prudden in New York, showed the presence of the typhoid bacillus, — these filters coming from houses in which there had been cases of the disease. One of the remarkable things was that every case of the fever in that epidemic occurred where the water for the house supply was obtained directly from the pumping station at the river. The better part of Providence is supplied by a high-water service from a reservoir on the hill. A portion of the supply is pumped and delivered direct, while another portion is stored in the reservoir; and the houses supplied from that reservoir had not a single case among them — in other words, the water clarified itself after standing, on the one hand, and on the other, the bacilli were gathered in the filters and developed there — not in the water-supply. There were a few present in the water, the filters were not properly cleaned, the bacilli grew very rapidly in the filters, and as the water passed through them to the house it obtained a fresh supply of bacilli and the people drank them. It is not that a water may not be a danger, only that it does not furnish a favorable nutrient-material for the bacilli, they do not develop rapidly and after a time they die out. I could hardly have made myself clear if Dr. Shattuck understood me to say that the bacilli occur only in the intestines. They occur, and in enormous quantities in the spleen, liver, and kidneys, and in smaller quantities in the other organs.

As far as the investigations of which he speaks are concerned, I did not refer in what I have said to any one set, but I have tried to speak of the work done upon the subject as a whole, that seems to indicate that the intercurrent lesions of which I spoke, are due, not to the typhoid bacillus, but to the pyrogenic bacteria or to other forms of organisms.

In regard to the identification of the typhoid bacillus, the assertion that a person has found it, is not to be accepted without any question at all. It is not an easy thing to identify, and I should want to know the investigator before I accepted the assertion that he had found it and identified it after cultivation. It is a matter which requires some time and a good deal of experience.

I spoke of the puncture of the spleen, and said I did not think the organism found from that puncture of much value from a diagnostic point-of-view, because to be sure that it is the typhoid bacillus, it must be obtained in pure culture and on sterilized potato.

Dr. Henry Jackson: I made a few experiments several years ago as to the growth of the typhoid bacillus in water. I took water of three grades: (1) distilled water; (2) ordinary city water of fair quality; (3) water from a well which had been condemned as containing too much organic matter to be fit for use. These samples were sterilized and inoculated with the bacillus of typhoid. The bacillus died out in a short time in the distilled water. In the water which I spoke of as of fair quality, the bacillus grew slowly during the few weeks when the water was under observation. In the foul water there was a very rapid growth of the bacilli, increasing by thousands in the course of a few days.

I wish also to say a few words about the sterilization of fæces in typhoid patients. We consider that in the fæces lies the cause of the disease whether we acknowledge that it is a bacillus or not; and the important question arises, How shall we sterilize the fæces? In looking at the text-books one has great confusion as most of the text-books say that the dejection should be thoroughly sterilized or disinfected, all agree to that. Most of them say, add a little carbolic acid, some add a "sufficient amount" of carbolic acid, but none, except the American Edition of Strümpel's Text-book give any detailed directions for the treatment of dejections. It is very easy to disinfect thoroughly and completely liquid or very loose dejections. That can easily be done by the addition of carbolic acid of five per cent. strength. On the other hand, it is very difficult to disinfect solid dejections. If carbolic acid is poured on the dejections it is many hours before it soaks into the mass, and, until that occurs the bacilli lie there in perfect safety. Dr. Shattuck has struck the key-note, where he says "stir thoroughly and let stand several hours." That is the most important part. If we wish to sterilize solid dejections they must be broken up. That, of course, is a very disagreeable thing to do in private houses or anywhere else; but if we feel that the dejections must be sterilized that must be done. I think it would be simpler in most cases in private families, to burn all solid masses and pour carbolic acid on all the liquid masses.

A long article has been written recently by Uffelmann, in which he advocates the use of five per cent. carbolic or 1-500 corrosive sublimate, adding at the same time a small amount of hydrochloric acid to prevent the decomposition of the corrosive sublimate. If we are to use carbolic acid the fæces must either stand a long time or the masses must be thoroughly broken up. To demonstrate that, I have made a few plate cultures. I have made in the first place the culture of loose dejection. There will be seen to be one hundred or more colonies. To a portion of the same dejection I added carbolic acid so as to make a solution of two and one-half per cent. After the flask stood fifteen minutes a second culture was made and that remains sterile after three days. I made a plate culture with a portion of solid fæces; this plate shows a large number of colonies. I covered the mass of fæces with five per cent carbolic acid, and after fifteen minutes made a second plate culture in which a large number of colonies have grown; twelve colonies grew on the plate made from fæces that soaked in carbolic acid for six hours.

Dr. J. A. Jeffries thought that Dr. Ernst had not made it quite clear that Tayon's cultures of the typhoid bacillus had been questioned. This was an important point, as it seemed clear that the men experimented on did not have typhoid fever as might have been expected if Tayon had used the typhoid bacillus.

In regard to milk the danger appears great, even greater than Dr. Ernst suggested; it is not necessary for the milk to be adulterated; it has been shown that simply washing the tins with infected water is sufficient to contaminate the milk. The bacilli remain on the tins and later grow in the milk. If, however, milk is the chief source of danger, or even a considerable one, the results gained in our large cities by a proper supervision of the water-supply is hard to explain. Such cities not only have less typhoid than formerly, but less compared to the country. Now as the milk comes from everywhere to the cities and is very old before distribution, the cities should show much typhoid, and the water-supply have little effect if the chief danger is from milk.

Dr. F. H. Hooper.

ACCIDENTS IN INTRA–NASAL SURGERY. PRESENTATION OF AN INSTRUMENT LOOKING TO THEIR PREVENTION.[2]

NEW YORK NEUROLOGICAL SOCIETY.[1]

Dr. Ira Van Gieson read a paper entitled

A CONTRIBUTION TO THE PATHOLOGY OF THE LARYNGEAL AND OTHER CRISES IN TABES,

and described a case of tabes with laryngeal attacks during the last year of the illness. One of the crises proved fatal. Microscopical examination showed the lesions of a chronic neuritis of the roots of the vagus and accessory portion of the spinal accessory nerves on both sides. Neuritis of the root fascicles or trunks of one or both of these was regarded as more frequently the cause of the laryngeal crises than central lesions.

The author divided laryngeal crises into two classes: A first class in which the glottis constrictors and dilators were normal, and the crises occurred by reflex spasm of the adductors; a second more numerous class of cases in which the constrictors and dilators are in a greater or less degree of paralysis.

The first form of the crises might be produced by a neuritis of the roots of the accessory portion of the eleventh nerve, irritating the sensory fibres of the larynx and being responded to by motor impulses through the vagus which would produce closure of the glottis by contraction of the adductors. The second form of the crises might be produced by a destructive stage of the neuritis in the vagus, inducing a motor inability of both the adductors and abductors. But as it has been shown experimentally in animals, that the adductors are stronger than the abductors a reduction of power in both sets of muscles would render the equilibrium of the two sets of muscles so unstable that reflex irritation of the motor laryngeal fibres, or direct irritation of these fibres in the vagus by the neuritis would be responded to by a contraction of the stronger adductors, analogously to the results of artificial stimulation of the motor laryngeal fibres in animals. When the neuritis affects both the vagus and accessory nerves together, the conditions are favorable for the production of violent crises. A localization of the lesions causing the other crises in tabes was based on Gaskell's description of the distribution of the sympathetic system.

Dr. A. Schapringer presented a case of

CONGENITAL BILATERAL ABDUCENS PARALYSIS WITH FACIAL PARALYSIS.

The patient was a girl, eight years old, with congenital paralysis of both facial nerves and inability to rotate the eyeballs either to the right or to the left.

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[1] Concluded from page 813 of the Journal.

[2] See page 606 of the Journal.

The faculty of rotating the eyeball upward and downward was unimpaired, and so was the faculty of convergence. This condition of the motor apparatus of the eyeballs is termed by certain authors "bilateral abducens paralysis," which designation Dr. Schapringer considered insufficient and misleading, and he therefore proposed the term "bilateral pleuroplegia" as a substitute. There were only four similar cases on record, namely, one each described by Alfred Graefe, C. C. Harlan, Julian Chisolm and F. J. Moebius. Other coexistent anomalies present in the child exhibited were: a protuberant glabella, bilateral epicanthus, a slight deformity of the terminal phalanx of the left index finger, a bifid uvula, and a sunken sternum representing a rudimentary form of "funnel chest" (*Trichterbrust* of the German authors). There was also a partial implication of the motor portion of the fifth and of the hypoglossal nerves.

Dr. Schapringer considered the phenomena within the sphere of the cranial nerves as due to a lack of development of the brain involving the nuclei of the fifth, sixth, seventh and twelfth nerves.

Dr. Sachs was acquainted with the cases reported by Moebius, which, however, differed from this in that there were four nerve nuclei affected in the latter. It was a question whether this was a congenital condition or a poliencephalitis superior occuring shortly after birth. He referred to a case of his own of congenital bilateral ptosis, and thought it was probably similar to those just described.

Dr. Seguin had observed such a condition to follow traumatism. A lady ten years ago was thrown from her carriage, and made unconscious for several hours. She had a double abducens paralysis lasting several years. He thought there was hæmorrhage into the nuclei of those nerves.

Dr. Corning had seen a case precisely like that of Dr. Seguin, following a blow upon the neck.

Dr. Birdsall described a case of double abducens paralysis occurring in a man whose head was caught between two car buffers.

Dr. Schapringer said he had frequently seen cases of double abducens paralysis, but that he knew of only four where there was in addition disease of of other cranial nerve nuclei.

Dr. C. A. Herter read the clinical history and report of the autopsy in a

CASE OF CERVICAL PARAPLEGIA FROM DISLOCATION.

J. F., a mason, fifty-seven years of age, fell head first from a scaffolding, a distance of twelve feet, striking with his head against a board. Patient was conscious on admission to the hospital. Examination failed to elicit evidence of fracture or dislocation in any part of the cervical spine, but there was great tenderness of the 6th and 7th vertebræ. There was complete motor paralysis below the arms. The forearms and arms were normal, but there was weakness of the muscles of the hand. There was also anæsthesia and analgesia of the lower extemities; and of the trunk extending high upon the chest. On the arms the anæsthesia involved, roughly speaking, the distribution of the ulnar, internal cutaneous, and lesser internal cutaneous, nerves, and was highly symmetrical.

With the exception of the plantar reflex on the left side, both superficial and deep reflexes were absent when the patient was admitted. There was a cincture pain about the lower part of the neck, and above and below the clavicles there was hyperalgesia. Below the neck there was pronounced myoidema, and fibrillary contraction could readily be elicited. Respiration was purely diaphragmatic. Temperature, on admission, 97.2°. Retention of urine and incontinence of fæces.

Nine hours after admission it was found that the sensory loss was the same as before, but the motor paralysis had spread, so as to involve the flexors and extensors of the wrist, triceps, and to a less extent the pectoralis major, and the pronators and supinators. Very slight power remained in the biceps. At the time no reflex could be obtained. Respiration continued diaphragmatic. The pulse was somewhat feebler than on admission, but good. The temperature had risen during the afternoon following admission to 104°.

On the day following admission the patient's condition was about the same, except that the biceps was somewhat feebler. During the afternoon of this day there was some embarrassment of respiration and on the second day after admission the patient died from respiratory failure, having survived the injury forty hours.

The autopsy revealed a dislocation forward of the sixth vertical vertebra, and an oblique fracture through the left superior articular process of the sixth vertebra. The forward displacement of the sixth vertebra was probably not more than one-third of an inch. The amount of pressure on the cord at the time of the autopsy could not be determined. Examination of the cord showed that the eighth cervical segment was extensively disintegrated, and that the seventh was considerably softened by the displacement of the vertebra. At the junction of the sixth and seventh segments the central canal was distended by hæmorrhage and there seemed to be some extravasation into the surrounding gray matter. Above the sixth segment the cord was normal. The case supported the view that the peculiar distribution of the sensory disturbance noted in the upper extremities depended on a lesion of the eighth cervical and first dorsal segments, and that in this case the biceps was represented at a lower level than is considered usual, that is, in the lower part of the sixth segment.

Dr. Starr said our knowledge was not yet complete with regard to localization in the cord, and every such case was very valuable. In his table he had located the biceps nuclei in the fourth segment, because it was so often associated with the deltoid in paralysis, and this was the level of the latter muscle. It seemed from Dr. Herter's case that the biceps group of cells had a vertical arrangement of greater length than he supposed, extending probably from the fourth down through the cord as low as the seventh segment.

Dr. Herter thought that the nuclear arrangement might differ in various people, and in his case the biceps nucleus may have been lower than usual.

Dr. Dana hoped that Dr. Herter would examine his experiments with Dr. Abbe in two cases where, in operations upon the spine, he had applied electricity to the nerve roots, and shown that there was much more overlapping of cell groups than was ordinarily supposed.

— A Faculty of Comparative Medicine and Veterinary Science was inaugurated at McGill University, Montreal, December 19th.

Recent Literature.

Cyclopædia of Diseases of Children. Vol. II, pp. 1,066. Edited by John M. Keating, M.D. Philadelphia: J. B. Lippincott Co.

This volume exceeds, if anything, Volume I in value and interest. Part I contains "The Diseases of the Skin," written by Hyde, Bulkley, Van Harlingen and others. The article on "Eczema" will, of course, be most frequently referred to, and Van Harlingen has treated the subject in a very satisfactory manner, although one is surprised at finding no mention of the external use of either boric or salicylic acid.

Part II. "Constitutional Diseases and Diseases of Nutrition," begins with a carefully written article on "Scrofulosis," by Henry Ashby. Excision of superficial enlarged glands is recommended in a lukewarm manner, but when pus has formed, he insists on at once opening the gland under an anæsthetic and scraping out the caseous material. The articles on "Tuberculosis," by A. Jacobi, and on "Syphilis," by Abner Post, are both valuable contributions to these subjects. "Rachitis" is treated of at length by Thos. Barlow and J. S. Bury, and the article is illustrated by interesting photographs. The writers are inclined to think that, although improper feeding tends to rickets, its influence has been overstated to the exclusion of other agents, of which they would lay especial stress on bad air and insufficient covering of the infant's limbs. "Scurvy," by Thos. Barlow, is particularly interesting, and contains a report of a series of cases. Dr. Barlow thinks that many of the cases described by German writers as "acute rickets" are, strictly speaking, a combination of scurvy and rickets. The editor was certainly very fortunate in obtaining the article on the "Urinary Diatheses," by J. Milner Fothergill, which was the last work of this distinguished writer. One is forcibly impressed with the prevalence and importance of lithiasis. The administration of lean meat and beef tea in these cases are, the writer says, so much poison to the child, while the resort to peptonized foods he clearly shows to be even worse. A diet largely farinaceous is advised, and no mention is made of the almost antidiabetic diet recommended by some recent writers, a diet the reverse of that used by Fothergill.

Part III. "Diseases of the Respiratory Tract," contains articles on diseases of the nose, pharynx and larynx, by Bosworth, Jarvis, Morell Mackenzie and others, the mere mention of whose name shows at once the valuable character of the articles. Over one hundred and fifty pages are devoted to "The Diseases of the Lungs." Dr. Francis Minot contributes a valuable paper on "Croupous Pneumonia," illustrated by clinical charts and by brief reports of cases. He dwells on its frequency in children, on the relations of the sanitary surroundings to the disease, on the fact that it is but rarely fatal, and on the need of but little medication. It is a great pleasure to find a brief article written for the purpose of bringing about the disappearance of the term "capillary bronchitis," which, as the writer, F. Gordon Morrill, says, "has become a troublesome and intangible ghost both in clinical teaching and in medical literature." The article, by the same writer, on "Broncho-Pneumonia" is also particularly valuable, and with Dr. Minot's article clears up the extreme haziness as to these two diseases in children, present in many practitioners' minds, as well as in the text-books, which frequently treat of them under one heading. As illustrating the influence of unsanitary environment, Dr. Morrill gives most interesting figures and diagrams, and shows that in a portion of the slums of Boston there were in one year twenty-two deaths from pneumonia and thirty-nine from bronchitis, while in a larger portion of a better part of the city there were no deaths recorded under either of these heads. We look in vain for the differential diagnosis between prolonged broncho-pneumonia and phthisis. F. C. Shattuck contributes valuable papers on "Emphysema," "Asthma," and "Hay-Fever," and A. Jacobi one on "Phthisis." The article on "Pleurisy" is well written by E. N. Whittier and H. F. Vickery, while A. T. Cabot demonstrates most clearly his method of operating on empyema. Although aspiration may sometimes cure empyema in children, he says we should not long persist with the needle, for "if the long convalescence while absorption is going on leaves a puny and weakly child, this result should not be counted a success when compared with the quick and complete recovery following a free incision."

Part IV. "Diseases of the Circulatory, Hæmatopoietic and Glandular Systems" begins with an article on "Functional Disorders of the Heart," by Da Costa. Wm. Osler follows on "Congenital Affections of the Heart" clearly written and well illustrated. The various divisions of acquired disease of the heart are written by W. B. Cheadle, J. Mitchell Bruce, and by A. E. Sansom. Cheadle regards the heart murmurs of chorea as usually organic and of rheumatic origin, and says that the murmur which appears early in an attack of rheumatism, even if it entirely disappear, is organic and not functional. Sansom advises the use of the salicylates in cases of non-compensated valvular disease, which do not respond to restorative treatment, on the theory that slow rheumatic changes are in progress. The results of original investigations on the limits and percussion area of the pericardial effusion are given, by T. M. Rotch, in a valuable article on "Pericarditis." He concludes that the fifth right interspace should be chosen for tapping.

Over one hundred pages are devoted to Part V, where are described the "Diseases of the Mouth, Tongue and Jaws." The articles are written by Roswell Park, W. W. Allchin, J. E. Mears and others, and are thoroughly illustrated. C. W. T.

Medical and Surgical Reports of the City Hospital of the City of Boston. Fourth Series. 1889.

Like one whose limbs are of unequal length, these reports advance to honor us with their greetings. The First Series, published in 1870, presented us with the most instructive parts of the hospital experience for the first five years, to June 1869. The Second Series, intended to cover the next half decade, by a long stride, appeared seven years later. The Third Series, falling back to a half-decade gait, appeared in 1882. This year, another seven-years' stride, brings before us the Fourth Series. We are inclined to think that such irregularity of gait must be due to causes beyond the control of the members of the Hospital Staff. Were a rule to issue these Reports every five years observed, we should be to-day welcoming the Fifth, instead of the Fourth Series. But the periods of time, covered by the contributions to these volumes, suggest that such a rule is not as yet in force. We call attention to these circumstances rather by way of information than complaint. When gentletlemen of large acquirements and high professional standing, with the cares of a private practice such qualities win, gratuitously render their services for many months in the year to a public hospital, for this alone they are surely entitled to our heartiest thanks. Any call upon them for the additional labor involved in gathering and analyzing statistics, and in preparing for the press monographs on medical progress, in the departments in which their work has been done, is not so much a claiming of our rights, as an expression of interest in the knowledge which our confidence in their ability and efforts to make the most of their opportunities, leads us to believe they have acquired. Apart from this, however, the publication of such reports is dependent upon the appropriations granted.

Judged by the number of pages, weight of paper, and size of type, the present as compared with the First Series is of about third rate importance; but judged by its concise, yet sufficiently detailed form, the progressive spirit it evinces; and the successes it chronicles, it more than maintains the reputation of its staff for thorough work.

In the introduction to the Third Series, the Editors say: "We have endeavored to present such a selection of hospital cases, as may be most useful for comparison and reference." The same rule followed in compiling the present volume, gives it great practical value. The first ten articles, or fifty-six of the two hundred and twenty-seven pages, are by Dr. David W. Cheever, who since the opening of the hospital has been the most constant, and largest contributor to these Reports. We find a total of about 365 pages attributed to his authorship, or 138 pages more than the present volume contains. Although he makes mention of able assistants, nevertheless his own original and supervisory work indicates great industry and careful observation.

This "Fourth Series" opens with a paper entitled, "Cerebral Localization," suggested by the results of an operation to relieve a traumatic laceration of the brain, and by a subsequent autopsy. It gains a special value in connection with Dr. Knapp's paper, some pages farther on. Next comes a very instructive analysis of 333 cases of "Head Injury," collated and analyzed by Dr. R. W. Lovett, and J. C. Munro, (former house-surgeons). From among several practical deductions we have space only for the concluding sentences. "As regards the value of the one symptom of the reaction of the pupils to light, without regard to the injury, an analysis of 165 cases, shows its great prognostic value; that is, in any injury where the pupils reacted to light, 68% recovered; where they did not react 17% recovered. No other symptom was of such great significance."

The four following papers, one on "Exostoses of the Head and Face," a second on "Naso-Pharyngeal Polypus," a third on "Excision of Nerves," and a fourth on "Tumors of the Tongue," all illustrate the anatomical skill and methods of modern surgery, in relieving disorders which invade the strongly protected regions posterior to the face, nose, and throat, with their intricate arrangements of nerves and vessels.

Dr. Cheever next reports three instances in which he operated upon the larynx and trachea. The first in a boy six years old, involved tracheotomy, preliminary to thyrotomy. By this method "a whitish pultaceous epitheloid mass," about the size of a marrowfat pea, was removed from the vocal cords. In less than a month the child was discharged "doing well," and with "slight hoarseness." We regret that the absence of the date of the year in which, on March 6th, the operation was performed, takes from the value of this concluding line: "1889, the boy is now grown up, and remains well." For the condition relieved gains a peculiar interest from its malignant character, and its resemblance to that of the late Emperor Frederick of Germany. The second case consists of a "Fracture of the Thyroid Cartilage," conducted to recovery by tracheotomy, to relieve great dyspnœa. The third tracheal case is one of the "curiosities of surgery." "A narrow knife stabbed into the neck, avoided the carotid and sub-clavian vessels, and opened the trachea low down, without wounding the œsophagus. Dr. Cheever relieved the hemorrhage into the lungs, by performing tracheotomy low down, and inserting a very long tube." The long tube prevented bleeding into the lungs, and emphysema. In three weeks the trachea wound healed without abscess, or mediastinal infiltration.

The last report by Dr. Cheever, is that of the removal of a thyroid tumor weighing ten and a half ounces. "An enormous cavity was left." His comments are of much value:

"We have always been taught," he writes, "that hemorrhage was the chief danger in operating for bronchocele by excision. The details of this case show that in these operations death may be due to other causes. It here was accelerated by something more than ordinary shock. I believe it was due to the following causes:

"(1) Injury to the left recurrent larnyngeal nerve, in tying off the pedicle of the tumor. . . .

"(2) Injury by exposure, section and irritation of small terminal branches of the pneumogastric nerve.

"(3) The large exposure of the external surface of the larynx and trachea would tend to produce secondary complications, so also would the proximity to the pleura. . . .

"(4) In the removal of all large tumors from the neck, I have always believed the free exposure and chilling of the large and thin-walled veins had an unfavorable influence.

"(5) The length of the operation, (between two and three hours) deepened the shock, and was probably as depressing as a larger hemorrhage."

Dr. Franklin H. Hooper contributes an article on "The Mechanical Effects of Adenoid Vegetations in Children." It is an expansion and enforcement of two papers previously contributed by him to the *Boston Medical and Surgical Journal.* "Perfectly innocent in themselves, by mechanically obstructing the air-tract," these growths "may lead to results which may truly be called malignant." Dr. Hooper urges their early removal, and protests against waiting for the child "to grow out of" them. This operation, "when properly done, is not attended by any danger to the child. The growths do not recur."

Under the title "New Surgical Appliances," Dr. Francis S. Watson, figures, and explains the application and uses of "The Perineal Drainage-Tube." He then describes the method of using, and results obtained from the "tin dressing." This was suggested and applied some years ago by Dr. Henry J. Bigelow. Its object is to secure a more rapid and smoother healing of granulating surfaces. Dr. Watson says, "However this simple contrivance may act, we are convinced that the rapidity of healing of granulating surfaces is greatly promoted by it, in most instances." He next with drawings illustrates the "Buried Suture," and describes its advantages in treating incised wounds of the face and scalp, so as to avoid disfigurements. Finally he sketches and explains two contrivances for draining the surgical table when antiseptic fluids are freely used. They are of unequal usefulness. Of the second the writer says, "It is too clumsy to carry about to private operations, but is well suited for hospital use."

In a carefully studied and fully illustrated article, Dr. H. W. Cushing discusses the advantages and disadvantages of the "Right Angle Continuous Intestinal Suture," and its merits as compared with the "Interrupted Lembert Suture." He reaches the conclusion that "the most satisfactory in all respects is the former, reinforced by a similar one superimposed, or by an 'Interrupted Lembert' if isolated points only require to be secured."

The following papers by Drs. P. C. Knapp and E. H. Bradford contain a valuable discussion of "Cranio-Cerebral Topography," and of the advisabilty of operations to remove cerebral tumors. The discussion is appended to a report of a case in which they together diagnosticated, localized, and removed a cerebral tumor, and subsequently explored the brain by autopsy. Dr. Bradford describes his method of operation, and, with the assistance of Dr. E. G. Brackett, writes the "Surgical Considerations," which in the absence of "accepted traditions," he rightly thinks, will have a special value to those who may feel called to perform this operation. We notice on page 136 that the recommendation of a solution of nitrate of silver, to mark the line of localization on the shaven scalp, is at variance with the statement on page 111, that, for reasons given, tincture of iodine would be better. But this, together with a few instances of defective proof reading, is of minor importance, compared with the carefully studied and arranged procedures.

Dr. Knapp writes a concise *résumé* of the present knowledge, which should guide us in localizing and determining the advisability of removing a cerebral tumor. After a very painstaking testing of Broca's methods of measurements upon fifty skulls in the Warren Museum, in which he was assisted by Dr. J. A. Jeffries, Dr. Knapp found "Broca's method for finding the bregma utterly inaccurate. The fullest and most accurate methods are the modification of the Thane-Horsley method as given by Dana."

Dr. E. H. Bradford next reports "Nine Cases of Amputation of the Hip-Joint" to relieve disease, with but one death from the operation. His final contribution is an article in which he figures and describes an "Apparatus for Forcible Correction of Subluxation of the Tibia." Its action is illustrated by cases in which it was successfully used. Its limitations are stated, and also the cases for which it is appropriate.

"Westphal's Parodoxical Contraction," is the subject of an instructive paper by Dr. Morton Prince. It is derived from a study of four cases with which he has met, and also from an analysis of what has been written on this theme. The rarity of these cases, and the novelty of their explanation hitherto, gives a special interest to this discussion. We have space only to state the two pregnant concluding sentences. "The nature of the pathological change upon which the increased irritability of the muscle in the abnormal phenomenon depends, is as yet unknown. The diagnostic value of the symptom is still undetermined."

Dr. Abner Post contributes a case of "Congenital Dislocation of the Hip, successfully treated," and farther on, in a more lengthy article, gives us an "Abstract of Surgical Proceedings at the Hospital." The latter includes valuable suggestions concerning operations upon the larger blood-vessels; upon the comparative value of tracheotomy and intubation in the treatment of croup; upon laparotomy; and upon a plastic operation for extroversion of the bladder, with illustrative cases.

"A Summary of Two Thousand Cases of Diphtheria, Scarlet Fever, and Measles," by Dr. A. L. Mason, is full of interesting comparisons and deductions. We snatch a few brief statements:

"Out of 365 cases of measles, but five died. The mortality from scarlet fever was 8.5. In this latter affection, albuminuria was present in one-fifth of the cases. A much more frequent complication was a condition which could not be distinguished from diphtheria. The effect of over-crowded sections of the city in propagating diphtheria does not seem to be so great as would be supposed. Most cases which develop heart-failure die either gradually or suddenly. In such cases "the impairment of the pneumogastric functions regulating the heart, stomach, respiration and voice, is very noticeable, and a sufficient explanation would seem to be the proximity of the vagus to the mass of infiltrated and infected tissues."

Dr. T. M. Rotch's "Notes on Infant Feeding, should have a much larger circulation than these reports furnish. The frequency with which the physician is called to apply such knowledge, and the large proportion of the population whose lives depend upon such teachings, will insure a hearty welcome to this thorough study of the principles of nourishing infants.

The final article is a report by Dr. Francis H. Williams, of "Two Cases of Chylous Urine." They are chiefly interesting by reason of the rarity of the affection they illustrate, and the thoroughness of these observations. The concluding sentences invite to farther study, thus: "The cause of chyluria is not well understood. . . . The most plausable theory is, that the cause is to be found in some anatomical change which permits the mixture of chyle with the urine."

These reports, as a whole, call to mind and illustrate President Cheever's Address this year before the American Surgical Association, entitled "The Future of Surgery Without Limit." Such study, such alertness and ingenuity, reinforced by so many evidences of progress, must surely impel along lines of advance, whose limits only future generations may discern. That the Boston City Hospital Staff have the reward of counting so many profitable results, their brethren will congratulate them. The public, also, are to be congratulated that the trustees, by a liberal construction of their powers, continue to favor the publication of Reports of this character. Many of these papers are not so much statements of proceedings as open letters of instruction, based on knowledge largely acquired through hospital practice and association. By their publication the philanthropic work of this institution is reduplicated. We regret that, while measures by which so much suffering has been relieved are easily understood, the experience and skill of their eminent originators cannot be as easily imparted.

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ANNUS MEDICUS MDCCCLXXXIX.

As many times before, so again, the closing days of the year admonish the JOURNAL of its duty to assist its readers in their reminiscent reflections on what the old year has brought to and taken away from the sum total of their professional interests. We are so optimistic as to believe that the grand trial-balance, of which we can but so imperfectly mention an occasional item, shows a preponderance to the credit of the medical profession, albeit we have, as usual, to chronicle serious losses by the hand of death.

Early in the year the New York City Board of Health requested Drs. Prudden, Biggs and Loomis, to prepare for the public information a statement as to the cause and the communicability of tuberculosis. This report was presented in June, and from the authority of its framers received a wide attention. It took the ground that the tubercle bacillus, of Koch, is the cause and the only cause of the disease; that the bacilli do not grow outside the body, but that even though dried, they continue to live for a long time; that infection, while it may be produced by tuberculous meat and milk, is nevertheless, generally caused by inhalation of bacilli from the lungs of consumptive patients, and that the greatest danger of such infection lies in germs which float in the air from dried sputa; that, therefore, the essential factor in prophylaxis is the sterilization of the sputa of the phthisical, and the prohibition of expectoration upon carpets, handkerchiefs and especially upon the ground.

The chronicle of epidemiology is fortunately brief.

The cholera confined itself chiefly to its habitat, or at least to the Asiatic continent. In May the number of deaths in the presidency of Madras were reported as from 1,000 to 1,500 weekly. In the autumn months it attained quite a prevalence in Mesapotomia, chiefly in the towns and villages on the Euphrates and Tigris, Bagdad being nearly the centre of the disease. The deaths for a time were 200 a week, and considerable alarm was felt at Constantinople, which fortunately, however, turned out to be without foundation. The scourge still continues in Mesapotomia, where the deaths, up to November 18th, have amounted to upwards of 7,000.

Having first ravaged Smyrna, dengue appeared at Magnesia, Asia Minor, two and one-half hours by rail from Smyrna, at the beginning of August, 1889, and prevailed in the form of a severe epidemic. Three-quarters of the population, which numbers 40,000, were afflicted. About the middle of August it appeared in Salonica, where it was sporadic and benign. It reached Dardanelles in the latter part of September. The Jewish quarter of this city was the first attacked. There were but few cases in the Greek and Armenian quarters. It has also been reported at Jerusalem.

Early in July the plague was reported as having broken out in the Turkish Dependencies in the Southwestern coast of Arabia, bordering on the Red Sea. This disease has not unfrequently of late years appeared in Arabia, last, we believe, in 1879. In that same year it invaded Astrachan. It has not obtained a foothold in Europe since the first half of the 18th century.

A fatal case of yellow fever occurred at Sanford, Fla., in the latter part of April, somewhat accelerating the homeward movements of the northern winter resident, who was considerably less numerous, by the way, than the preceding winter, on account of the epidemic of 1888. A mild winter also doubtless contributed to lessen the amount of southern travel. The health authorities of Florida, perhaps wiser from their experience of the previous year, showed no disposition to dissimulate regarding the existence of the disease, and perhaps their prompt acknowledgment of the very few cases that existed saved them from an involuntary acknowledgment of a much larger number that might otherwise have occurred.

Finally, as we write, we are beginning to feel what are perhaps the first pattering drops of the shower of epidemic influenza, which, during the last two weeks has passed over most of Europe. In Paris and St. Petersburg and to a less degree in other cities it has temporarily laid aside thousands of people from their accustomed pursuits, and while not contributing to the mortality returns, has proved a serious bar to individual happiness and sometimes even to corporate business enterprise. The bacteriologists have hopes of detecting a new bacterium, unless their own eyes are too soon closed by coryza to microscopic exploration.

The rapidly increasing use of electricity for illuminating and mechanical purposes has proved of interest to medical men during the past year, unfortunately less from its utilitarian than its destructive qualities. The ophthalmologists have noticed what one of them has named "photo-electrical ophthalmia," characterized by lachrymation, photophobia, and peri-orbital pain. The aurists have their share in the correction of electrical mischief through the "telephone ear." But the great bulk of the trouble has fallen upon men, by no means all of them connected with line-work, through coming in contact with "dead" wires which in some way overlay or touched "live" wires of the electric lighting companies. Of late almost every week has witnessed in all of the large cities some such disaster, usually fatal. Horses and other animals have been killed in a similar way. Great difficulty has been experienced in the attempt on the part of municipalities generally to compel the removal of dangerous overhead wires, but within the past week a decision of the Supreme Court of New York abundantly affirms that right; the judge saying that whatever rights corporations have "acquired by legislative grant are subject to the dominant laws of public safety." It seems by no means certain that even the burying of wires which carry currents of high intensity is going to secure immunity from danger, but the words of the above decision give promise of a holding of electrical corporations to a strict surbordination to public safety, even, if necessary, in the amount of electro-motor force which they may employ.

The use of electricity as a means of enforcing the death-penalty, which was made obligatory in New York after the first of January, 1889, has not been tried, as Kemmler, the man who should first have experienced its lethal action, has, through his counsel, set up the claim that the law is unconstitutional as providing a "cruel and unusual" punishment. After much expert testimony, the electric companies generally taking the ground that the electric fluid would not prove lethal, the county judge decided the law to be constitutional, but the matter has been appealed to a higher court. If the Court of Appeals reverses the decision, the condemned man will escape altogether, for no other means of execution is provided by law. Hence the prosecuting officers are delaying the trial of all other persons accused of murder (now some twelve in number), until the question has been decided, and some legal method of execution has been assured whereby these men, if guilty, can be punished. Mr. Edison has recently sent a communication to the Paris Academy of Sciences on the subject of electricity as a means of capital punishment, in which he says, that the alternating current can be made to produce a certain and painless death.

The Maybrick case was one of exceptional medico-legal interest, which occupied much public and professional attention through the summer. Mr. Maybrick, a cotton merchant of Liverpool, died with indeterminate symptoms, May 11th, and, in the protracted trial which followed, the questions, which were argued at great length and were made the subject of opposing expert testimony by many of the leading toxicologists of England, were (1) Did he die of arsenical poisoning? and (2) Was arsenic administered by his wife? The jury finally decided both questions affirmatively. American interest in the case was due not only to the free exchange of intelligence and general expression of opinion on points of technical investigation, but to the fact that the accused was an American.

The Cronin case, on this side of the water, offers a marked contrast to the Maybrick case in the social standing of the accused persons, but also contains many points of medico-legal interest. Dr. Cronin, a practising physician of Chicago, an Irishman of strong political convictions, but a somewhat obstructive member of the Clan-na-gael, went, in answer to a professional call, to a lonely house some distance from his home and never returned. The house was located, human blood stains found, and on strong but purely circumstantial evidence three men, members of the Clan-na-gael, were, after a long and interesting trial, found guilty of murder and received life-sentences. A fourth man, who summoned and conducted the doctor to the fatal spot, was found guilty of manslaughter and sentenced for three years; and a fifth, Beggs, an officer of the Society, who had appointed a committee to "investigate" Dr. Cronin's actions, was acquitted. This verdict absolves the Society from official responsibility in the murder, though the guilty men, as being all members of the Society, may reasonably be deemed to have supposed their action was in its interest.

But little progress has been made this year in securing legislation protecting the community against incompetent medical practitioners. The Massachusetts lower house passed such a bill, which was thrown out in the upper house. A similar movement in several other States failed, owing to the active opposition and political and newspaper influence of the class at whom the proposed legislation was aimed. Meantime, the United States Supreme Court has, on appeal from the decision of West Virginia courts, approved the constitutionality (which had been denied) of State laws regulating the practice of medicine. The States of Tennessee and North Carolina, and possibly some others have, however, succeeded in accomplishing such legislation.

On the first of June occurred one of those awful disasters which, though local in situation, compel the attention of the world and offer a field for the display of brotherly-kindness, which is never wanting when such an occasion arises. The bursting of the dam on the Conemaugh River and the destruction of Johnstown and the adjacent villages are too fresh in the minds of our readers to need more than a mention. In that disaster six physicians were drowned and twenty-one lost their all. To the immediate devastation of the flood ensued a period of sickness among the survivors due to the exposure, to the submergence of the country for days, and to the decomposition of human and animal remains. In the subsequent weeks, the services of medical men were needed and were freely given to render aid to those who suffered from the exposure and its effects. In the outpouring of money for the relief fund, which proved to be so much larger than was needed for the repair of reparable injuries, we believe the medical profession bore its full share.

An example of heroism, which none better than physicians know how to appreciate, was given the world, in the death during the early spring of Father Damien, a Jesuit priest, who, in 1873, went to Molokai, the island set apart to the leper population of the Hawaiian Islands. There for sixteen years he labored for the spiritual and material welfare of a people who, from regarding themselves as social and physical pariahs, had come to look upon themselves as outside the pale of morality and decency. After caring for the living and burying the dead for many years, the expected happened. The disease gained a foothold on himself. For many months before his death he had watched upon himself the advancing footsteps of disease, as it invaded eyebrows and face and extremities, until it finally carried him off at the comparatively early age of forty-eight. A memorial, which for the present generation it is to be hoped will be unnecessary, is to be raised to his name. It is worth mentioning by the way, though it is so natural a fact that it seems not to have attracted public attention at all, that the resident physician of Molokai, Dr. Hoffman, has become a leper.

The death of Laura Bridgman, outside of the personal interest which the profession and the community at large had for many years felt in her peculiar case, has served to suggest most strongly the advance in the treatment of the blind and the deaf mute in the last decade or two. The education of these unfortunates is a recent achievement, and is no longer the rarity it was when Dr. Howe first described to a wondering public the case of Miss Bridgman.

Early in the year a new therapeutic measure was proposed to the profession by Charcot, namely, the treatment of tabetic patients by suspension, practiced as orthopædic surgeons have been wont to employ it in the application of plaster jackets. The new treatment has been used very generally, and a number of articles have been published, mostly favorable to its effect in at least certain cases of ataxy. It is probably too soon, however, as yet to draw definite conclusions as to the value of the treatment and the indications for its employment.

After long preparation, this year has witnessed the completion and the dedication of its work of that magnificent charity, the Johns Hopkins Hospital of Baltimore. On May 7th, by formal exercises with an address by Dr. John S. Billings, the hospital was opened, and after a few days, during which the medical profession and the general public had an opportunity to examine the complete equipment which has been provided, the regular ministrations of the hospital began. Dr. Billings, who it may be assumed knows whereof he affirms, said "I do not hesitate to affirm that these are the best built buildings of their kind in the world." We may well congratulate ourselves that in the year just closed we have gained in this country a new means for the study of the problems of disease, and one whose possibilities for future usefulness are beyond estimation.

In this connection we also note with satisfaction as having a possible influence on the education of future physicians, the opening, in September, of the new Clark University, at Worcester, Mass., which is supposed, by the generosity of its founder, to be provided with a sufficient endowment to secure the best teaching in various departments of science, and is able to enter at once upon its work with an equipment which most American universities secure only after years of effort.

One of the humors of the year, destined perhaps to take its place in the medical histories with the metallic tractors and condurango, has been Dr. Brown-Séquard's "elixir" for reviving the waning powers of the aged. Brought before the public attention, in June, by two formal communications to the *Société de Biologie*, the proposal attracted a wide-spread interest, and the testicular juice of the guinea pig and rabbit was exploited by the papers as a veritable elixir of perpetual youth. It is fair to say that the term *elixir vitæ* was not the inventor's name for this specific, and that he never claimed for it quite what he was represented to have done. But a "craze" happened to be needed about that time, and this served a very good purpose. A few experimenters, out of respect to the authority of the distinguished physiologist, tested it, and some other persons, desirous of notoriety, used the "elixir" as purchase money for what they wanted. But in the hands of the latter, the injection of a putrescible animal substance began to produce, as might be expected, septic results which speedily brought the treatment out of the category of the merely foolish into that of the positively dangerous fads, and the Brown-Séquard elixir is already as dead as the glands from which it was derived.

Some of the more important medical gatherings of the year have been as follows:

The American Surgical Association held its annual meeting at Washington, May 14th to 16th; the American Medical Association held its fortieth annual meeting at Newport, R. I., June 25th to 28th; the American Laryngological Association had its eleventh annual congress at Washington, May 30th to June 1st; the American Climatological Association held its sixth annual meeting at Boston, June 24th and 25th; the American Otological Society held its twenty-second annual meeting at New London, Conn., July 16th; the American Ophthalmological Society held its twenty-fifth annual meeting at the same place the two following days, July 17th and 18th; the American Neurological Association held its fifteenth annual meeting at Long Branch, N. J., June 26th and 27th; the American Rhinological Association met at Chicago, August 28th to 30th; the American Dermatological Association held its thirteenth annual meeting in Boston, September 17th to 19th; the American Pediatric Society held its first annual meeting in Washington, September 20th and 21st; the Association of American Physicians had its fourth annual meeting at Washington, September 18th to 20th; the American Gynecological Society held its fourteenth annual meeting at Boston, September 17th to 19th; the American

Orthopedic Association held its third annual meeting in Boston, September 17th to 19th; the British Medical Association met for the fifty-seventh time at Leeds, August 13th to 16th; the eighth German Congress of Internal Medicine met at Wiesbaden, April 15th to 18th; the sixth Italian Surgical Congress met at Bologna, beginning April 16th; the German Surgical Congress met at Berlin, April 24th to 27th; the sixty-second annual meeting of German Naturalists and Physicians was held at Heidelberg, September 17th to 23d; an International Congress of Medical Jurisprudence held its first meeting in New York, June 4th to 7th; the twenty-first annual meeting of the Canadian Medical Association took place at Banff, N. W. T., August 12th to 14th; the American Association for the Advancement of Science met in Toronto, beginning August 28th; the American Academy of Medicine met at Chicago, November 13th to 17th; the American Public Health Association held its seventeenth annual meeting at Brooklyn, October 22d to 25th; the Association of American Anatomists, holds its second annual meeting in Philadelphia, December 26th to 28th.

Paris, as the seat of the World's Exposition of 1889, attracted to itself the meetings of many learned societies, among them the following of a medical character: A Congress of Hypnotism, August 8th to 12th; an International Congress of Therapeutics and Materia-Medica, August 1st to 5th; an International Congress (the 2d) of Climatology, October 3d to 10th; the fourth annual Congress of French Surgeons, October 7th to 13th; an International Congress for the Suppression of Alcoholism, July 29th to August 1st; an International Congress of Hygiene (biennial session); International Congress of Dermatology and Syphilography, August 5th to 10th, under the presidency of Dr. Ricord, one of his last public appearances.

Among the formal statements of medical consensus and progress, connected with the established lectureships in England and America, are the following:

The Lettsomian Lectures on "Syphilis and the Nervous System," were delivered before the Medical Society of London, by W. R. Gowers, M.D., F.R.S.; the Milroy Lectures on "Occupations and Trades in Relation to Public Health," were delivered before the Royal College of Physicians of London, by John T. Arlidge, M.D.; the Gulstonian Lectures on "Secondary Degenerations of the Spinal Cord," were delivered at the Royal College of Physicians of London, by Howard H. Tooth, M.D., F.R.C.P.; the Lumleian Lectures on "Enteric Fever," were delivered before the same body, by John Harley, M.D.; the Harveian Lectures on "The Various Manifestations of the Rheumatic State as Exemplified in Childhood and Early Life," were delivered before the Harveian Society, of London, by W. B. Cheadle, M.D.; the Cavendish Lecture on "The Relation between Disease and Regulating Nervous Centres," was given at the W. London Hospital, by J. Andrew, M.D.; the Croonian Lectures on "The Relation between Chemical Structure and Physiological Action," were delivered before the Royal College of Physicians, of London, by T. Lauder Brunton, M.D., F.R.S.; the Bradshawe Lecture on "The Distribution and Duration of Visceral New Growths," was given before the Royal College of Physicians, of London, by Norman Moore, M. D.; the Morton Lecture on "Cancer and Cancerous Diseases" was delivered before the Royal College of Physicians, by John Marshall, F.R.S., etc.; the Cartwright Lectures on "Vital and Medical Statistics," were delivered before the Alumni Association of the College of Physicians, of New York, by John S. Billings, M.D., United States Army; the Toner Lecture was delivered at Washington, by Prof. Harrison Allen, of Philadelphia, on "The Clinical Study of the Skull, especially undertaken in connection with the morbid conditions of the jaws and nasal chambers"; the Middleton-Goldsmith Lecture was delivered before the New York Pathological Society, by Dr. R. H. Fitz, of Boston, and was upon "Acute Pancreatitis with Especial Consideration of Pancreatic Hæmorrhage, Hæmorrhagic Pancreatitis and Disseminated Fat Necrosis." It was published in this JOURNAL.

GENERAL NECROLOGY.

Nathan Allen, M.D., LL.D., of Lowell, Mass., formerly member of the Massachusetts State Board of Charities, a voluminous writer on medical and hygienic subjects, died January 1st, aged seventy-six.

Heinrich Alexander Pagenstecher, physician, professor of zoology at the University of Heidelberg, student especially of trichinæ, died at Hamburg about the first of the year, aged sixty-three.

Johann Wagner, M.D., for forty years professor of medicine at the University of Buda Pesth, died January 2, aged seventy-eight.

John C. Dalton, M.D., president of the College of Physicians and Surgeons of New York, formerly professor of physiology in the University of Buffalo, the Vermont Medical College and the Long Island College Hospital, the author, among many productions, of a standard treatise on Physiology, died February 2, age sixty-four.

Carl Zeiss, of Jena, maker of lenses, microscopes and microscopical instruments, died early in the year, aged seventy-three.

Dr. Isidor Soyka, professor extraordinary of hygiene in the University of Prague, enthusiastic worker in sanitary science, died by suicide, February 23, aged thirty-nine.

James W. Ranney, M.D., of New York, one of seven brothers in the medical profession, Commissioner of Lunacy, surgeon to many railroad corporations, died February 28, aged sixty.

Chas. J. B. Williams, M.D., F.R.S., F.R.C.P., etc., of London, Gulstonian and Lumleian lecturer, founder and consulting physician of the Brompton Consumption Hospital, founder and first president of the Pathological Society of London, and of the new Sydenham Society, president of the Royal Medical and Chirurgical Society and physician extraordinary to

Her Majesty, died at Cannes, March 24, aged eighty-four.

Franz Cornelius Donders, M.D., physiologist, ophthalmologist, professor extraordinary to the Faculty of medicine in the University of Utrecht, author of many standard works, notably of "Anomalies of Refraction and Accommodation," died March 24, aged seventy-one.

R. Palmer Howard, M.D., LL.D., professor of clinical medicine and later of the theory and practice of medicine in McGill University and dean of the Faculty, formerly president of the Canada Medical Association, vice-president of the Association of American Physicians and a widely-read author on medical subjects, died March 28, aged sixty-six.

Edward T. Bruen, M.D., assistant professor of physical diagnosis at the University of Pennsylvania, visiting physician to the Philadelphia Hospital, a prolific medical writer, died March 31, aged thirty-eight.

Michel Eugene Chevreuil of France, chemist, professor in the Museum of Natural History and director of the same, member of the Académie des Sciences for more than three-quarters of a century, died April, aged one hundred and three.

Joseph Rogers, M.D., the Howard of the English workhouses, a life-long reformer in reference to the management of the sick and disabled of the urban population of England, died April 3, aged sixty-nine.

Jerome H. Kidder, M.D., surgeon, United States Army, formerly chemist and microscopist of the United States Naval Department at Washington, naturalist and charge of the Bureau of Exchange of the Smithsonian Institution, died April 8, aged forty-eight.

Samuel W. Gross, M.D., of Philadelphia, son of the late Prof. Samuel D. Gross, professor of surgery in the Jefferson Medical College, author of a monograph on Tumors of the Mammary Gland, died April 16, aged fifty-two.

James B. Hunter, M.D., of New York, gynecologist, attending surgeon to the Women's Hospital, formerly editor of the *New York Medical Journal*, died June 10, age fifty-two.

Dr. August Breisky, professor of Gynecology at the University of Vienna, died in June, aged fifty-seven.

Charles Bland Radcliffe, M.D., F.R.C.P., of London, a prolific medical writer, especially on diseases of the nervous system, a former Gulstonian and Croonian lecturer, died June 18, aged sixty-seven.

Count Pietro Loreta, a surgeon of Bologna, a pioneer in the surgery of the abdominal viscera, died by his own hand, July 19, aged fifty-eight. His students had erected two tablets in the Infirmary and the University commemorating him as the first successful performer of resection of the liver and of digital divulsion of the pyloric and œsophageal orifices of the stomach.

Alexander B. Mott, M.D., of New York, son of the late Dr. Valentine Mott, a founder of St. Vincent's Hospital, a founder of Bellevue Hospital Medical College and professor therein of surgical anatomy and of clinical and operative surgery, died August 12, aged sixty-three.

Jas. L. Cabell, M.D., professor of anatomy in the University of Virginia, superintendent of all the military hospitals of the Southern Confederacy, president of the National Board of Health, died August 13, aged seventy-six.

Thomas King Chambers, M.D., F.R.C.P., of London, clinical lecturer and medical writer, especially on dietetics, died August 15, aged seventy-two.

Prothero Smith, M.D., F.R.C.P., an obstetrician and gynecologist and inventor of many instruments connected with his specialty, founder of the first hospital for women in London (in 1842), died September 29, aged eighty.

Dr. Pietro Laura, of Genoa, once a medical volunteer in the ranks of young Italy, then a pioneer in the Argentine Republic, finally a practitioner of eminence in his native country, died in October, aged sixty-nine.

Philippe Ricord, syphilographer, died in Paris, October 22, aged eighty-nine.

Isaac C. Taylor, M.D., a founder of Bellevue Hospital Medical College and its president since 1861, professor of obstetrics and diseases of women and children, and founder of the American Gynecological Society, died in New York, October 30, aged seventy-seven.

NECROLOGY OF THE MASSACHUSETTS MEDICAL SOCIETY.

James John O'Conner, M.D., of Holyoke, died December 14, 1888, aged forty-six.

Charles Lamson Swasey, M.D., of New Bedford, died December 24, 1888, aged seventy-three.

Nathan Allen, M.D., of Lowell, died January 1, 1889, aged seventy-five.

Herbert Stanton Jordan, M.D., of Waltham, died January 10.

William Gilman Buck, M.D., of Springfield, died January 22, aged seventy.

George Wyman Fay, M.D., of East Weymouth, died February 5, aged fifty-five.

Almon Mitchell Orcutt, M.D., of Hardwick, died February 11, aged sixty-four.

John Bunker Taylor, M.D., of East Cambridge, died February 15, aged sixty-seven.

Frederick Winsor, M.D., of Winchester, died February 25, aged fifty-nine.

James Frederick Harlow, M.D., of Quincy Point, died March 8, aged sixty-nine.

George Hubbard, M.D., of Boston, died March 19, aged eighty.

Franz Cornelius Donders, M.D., (Hon. Mem.) of Utrecht, Holland, died March 24, aged seventy.

Henry Augustus Barrett, M.D., of Concord, died April 6, aged seventy.

Edwin Charles Bullard, M.D., of Dorchester, died April 12, aged forty-eight.

Herbert James Harriman, M.D., of Revere, died April 14, aged thirty-one.

John Leland Miller, M.D., of Sheffield, died April 18, aged seventy-six.

William Neilson, M.D., of Salem, died May 3, aged eighty.

William Read, M.D., of Boston, died May 6, aged sixty-nine.

Abner Marshall Smith, M.D., of Pittsfield, died May 23, aged sixty-eight.

Daniel V. Folts, M.D., of East Boston, died May 28, aged seventy-three.

Jonathan Mann, M.D., of Boston, died June 15, aged seventy-three.

John Burke, M.D., of Boston, died June 21, aged forty-two.

Austin White Thompson, M.D., of Northampton, died July 11, aged fifty-four.

John Bowne King, M.D., of Nantucket, died July 27, aged eighty-one.

Le Baron Russell, M.D., of Boston, died August 19, aged seventy-six.

Herman Brimmer Inches, M.D., of Boston, died August 19, aged seventy-six,

Thomas Luce Chapman, M.D., of Longmeadow, died August 20, aged seventy-two.

Edward Goodrich Ufford, M.D., of Agawam, died August 25, aged eighty-eight.

David Augustus Grosvenor, M.D., of Danvers, died September 27, aged seventy-eight.

Alphonso Brooks, M.D., of South Boston, died September 30, aged eighty-nine.

Charles Haddock, M.D., of Beverly, died October 10, aged sixty-seven.

Levi Farr Warner, M.D., of Boston, died October 12, aged sixty-seven.

Nathan Snell Babbitt, M.D., of North Adams, died November 5, aged seventy-seven.

Moses Collins Greene, M.D., of West Somerville, died November 20.

James Milton Stickney, M.D., of Pepperell, died November 28, aged seventy-nine.

It is worthy of note that the average age of the decedent members of the Massachusetts Medical Society, so far as recorded, reached the high figure of *sixty-eight and one-half* years, a fact which speaks well for the salubrity of the conditions attending medical practice in the Bay State. To such a green old age we desire that all our readers, even the many who are by adverse circumstances deprived of the privileges of a residence within the limits of Massachusetts, may in due time safely arrive, and to this good wish we join all others of holiday cheer!

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MEDICAL NOTES.

— A movement has just been started by some of the local boards of health in Massachusetts, says the *Boston Herald*, looking to the formation of an association which will include the health officials of the different cities and towns in the State. The purposes of this organization, as set forth in a circular that has lately been sent out, will be to discuss topics and hear papers of sanitary interest; to aid legislation and secure uniform interpretation and enforcement of existing statutes in relation to the public health; to compare the rules of local boards and city ordinances for the purpose of advancing the objects for which they are framed; to secure co-operation between local boards in all the work which they are called upon to perform, and last, but not least, we presume, to establish pleasant and helpful social relations between the boards of health thoughout the commonwealth. A preliminary meeting for organization is to be held in Boston at an early day, by invitation of the city board of health.

NEW YORK.

— A ten-year-old boy died of hydrophobia in Brooklyn, on December 17th. Two months ago he was bitten in the nose by a street cur.

— The International Medico-Legal Society held its annual meeting and banquet December 18th. On this occasion the President, Mr. Clark Bell, delivered an address on "Hypnotism," and Judge Charles G. Garrison, of the New Jersey Supreme Court, read a paper on "The Proper Province of Medical Expertism." Mr. Bell was re-elected President.

— At a meeting of the New York Academy of Medicine held December 19th, Dr. Robert W. Taylor, who has been making a long course of observations on the subject, read a paper on "Chronic Inflammations of the External Genitals of the Female, with a Consideration of the Question of Lupus or Esthiomene of these Parts." At this meeting the Academy formally accepted the gift of $5,000 left by the will of the late Dr. Wesley M. Carpenter to found a lectureship to be known as the "Carpenter Lecture." The first lecture will be given during the present winter. A committee of twenty was appointed at the same meeting to collect funds for the new building of the Academy.

— The roof and top floor of the north wing of the Presbyterian Hospital were destroyed by fire, from some unknown cause, on the evening of December 19th. Fortunately, all the patients were got out without injury, by the aid of the police and citizens who volunteered for the duty. Four firemen, however, were more or less severely injured by the sudden falling in of a portion of the roof, and were conveyed to the neighboring Mount Sinai Hospital. Many of the patients were at first carried to a club-house and to private residences near by; but they were all eventually taken in ambulances to Mount Sinai, St. Luke's, the German, and other hospitals. One of the patients, who was in a dying condition at the time, from abscess of the liver, which had been operated on, died in a few hours, but all the others are reported to be doing well. It is expected that they can all be taken back to the Presbyterian Hospital during the present week.

— Dr. Charles Henry Nichols, Superintendent of the Department for the Insane of the New York

Hospital (Bloomingdale Asylum), died December 17th, at the institution. Last summer he was sent abroad by the Board of Governors to examine the construction and management of hospitals for the insane on the Continent, with a view to rendering the new asylum about to be erected at White Plains, West Chester County, as complete as possible in its construction and appliances, in accordance with the latest scientific advances made in connection with such institutions. Since his return his health has been gradually failing. Dr. Nichols was born at Vassalborough, Kennebec County, Me., October 19, 1820. His academic education was completed at the Friend's School, Providence, R. I., and he afterwards studied medicine in the University Medical School, New York, but was finally graduated from the Medical Department of the University of Pennsylvania in 1843. He practised in Lynn, Mass., until 1847, when he became assistant physician to the New York State Lunatic Asylum at Utica. In 1849 he received an appointment at the Bloomingdale Asylum, which he retained till 1852, when he went to Washington on the invitation of President Filmore, to establish a hospital for the insane of the army and navy and of the District of Columbia, an institution which was three times enlarged under his administration. During the war he was acting assistant surgeon in the army, and in connection with the General Goverment Hospital for the Insane, conducted a General Hospital for United States Volunteers. In July, 1877, he accepted the invitation of the Governors of the New York Hospital to return to the Bloomingdale Asylum, and up to the time of his death he remained superintendent of that institution. Dr. Nichols was highly esteemed as an expert alienist, and was a frequent contributor to the *American Journal of Insanity*. For a number of years he was President of the Association of Medical Superintendents of American Institutions for the Insane.

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Miscellany.

THE TWENTY-FIFTH ANNIVERSARY OF THE BOSTON CITY HOSPITAL.

The twenty-fifth anniversary of the Boston City Hospital was celebrated by a dinner at the Parker House, Wednesday Evening, December 18th. Covers were laid for between fifty and sixty people. There were present past and present members of the Board of Trustees; past and present members of the Medical, Surgical and Out-Patient Staffs; and two out of the three Superintendents whom the hospital has had since its beginning. Mr. Joseph A. Tucker, President of the Board of Trustees, presided, assisted by Hon. H. H. Sprague, Secretary of the Board.

Among those who spoke after dinner were Ex-Mayor Lincoln, Mayor of the city in 1864; Judge Walbridge A. Field, of the Supreme Court; Drs. Williams, Cheever, Blake and Lyman, of the Staff; Dr. Edward Cowles, for the Superintendents; Dr. C. M. Green, for the Out-Patient Staff.

The fact was referred to that formerly there was no place in the city for the reception of the usual contagious diseases; that not so very many years ago, there was no hospital which would take a case of typhoid fever. Notwithstanding such facts, the proposal for the establishment of a city hospital met with serious and persistent opposition in various quarters. The opponents generally suggested that a wing be added to the Massachusetts General Hospital. The requisite appropriations were made during the severest period of the strain of the Civil War, the necessity for the institution having been amply proved. There were further difficulties about procuring a site, the legislature having in the mean time enacted that no hospital should be established in the city limits within three hundred feet of a schoolhouse. Finally, by June, 1864, the buildings had been finished, equipped, delivered over to the charge of the first board of trustees, and were open for the reception of patients. The annual reports, and the four volumes of reports issued by the medical and surgical staff, tell the subsequent history of progressive, rapid, harmonious growth; of professional industry and devotion. Notwithstanding the large annual appropriations necessary for its support, it is generally recognized by those competent to judge, that the hospital is an economy to the city.

The remarks of Dr. David W. Cheever, embracing the necrology of the staff, were as follows:

Mr. President and Gentlemen, — As one of the three original members of the hospital staff still on duty in its service, I can but review seriously the changes that death has caused in our *personel*. Our consulting board has lost six members: Drs. Towasend, Reynolds, Lewis, Jeffries, Durkee and J. Homans. The medical staff, one, Dr. Arnold. The out-patient department, two, Drs. Damon and Haskins. The visiting staff of six surgeons has contained thirteen in these twenty-five years, of whom *seven* have died: Drs. Steadman, Ropes, Derby, Buckingham, Thaxter, Thorndike, Charles Homans, all have passed away. Their lives were devoted to duty, and to untiring self-sacrifice in the relief of humanity and the pursuit of truth. Their memory should encourage not sadden us. As in their day, so ever since, harmony has been one of the best characteristics of our hospital staff. No scandal has smirched our hospital; no discord has defeated our counsel. We have worked together, helped each other, and have been sedulous for the good repute of all. I say this in no spirit of self-assertion, but in the belief that those who succeed us, will make their future equal to our past.

The hospital doctor toils among the poor; and his reward is in seeing health restored, happiness increased, suffering eased.

The laborer, whose necessity drives him to the hospital, gets more skilled care in medicine, in surgery, and in nursing, than the rich man often receives; and he attains a larger percentage of speedy recovery.

The care of the sick and injured is the first duty of a hospital, but it is not the only one. The advancement of medical and surgical science, the teaching of others, is one of its highest functions. He who teaches, learns. Happily, in this community, benevolence tempers poverty; the skill begot of experience relieves the hospital sufferer; and a broad humanity shields the patient from abuse, in clinical teaching.

It is not the least of the fruits of our labors, that the City Hospital has educated, as its *internes*, more than two hundred young doctors, now scattered all over the United States.

I may be permitted to refer, also, to the four volumes of Scientific Reports this hospital has published, which are of permanent value in their records and statistics.

During the year 1864, four hundred and seventy five patients were received into the City Hospital. In the year 1889, nigh five hundred are *daily* inmates. A quarter of a century can show few such growths. Our hospital to-day is equal in its appointments, its comforts, and its management, to any in the world.

The causes of this excellence are four in number: the liberal charity of your city; the patient care of its trustees and its superintendents; the devotion of its medical and surgical staff, and of its internes; the trained nursing which it has developed within in its own walls.

Twenty-five years have passed. Many of us will not see the fiftieth anniversary. But the City Hospital will be here; and its shadow will not be less.

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THE WORCESTER MEMORIAL HOSPITAL AND WASHBURN DISPENSARY.

At the annual meeting of the Board of Trustees of the Memorial Hospital and Washburn Free Dispensary of Worcester, the following staff was appointed: Consulting Board, Drs. George E. Francis, Emerson Warner and John G. Park; Active Staff, Department of Women, Drs. Leonard Wheeler, O. H. Everett, Samuel B. Woodward; Department of Children, Drs. Lemuel F. Woodward, George O. Ward, Homer Gage; Staff of Dispensary, Visiting Physicians, O. H. Everett, A. C. Getchell; Oculist and Aurist, Dr. David Harrower, Jr.; Gynecologists, Drs. Wm. H. Danforth and Homer Gage; Dermatology, Dr. O. H. Everett; Laryngologist, Dr. A. C. Getchell; Orthopedists, Drs. Lemuel Woodward and George O. Ward.

The Memorial Hospital was opened in June, 1888. During this period there have been admitted 279 patients, of whom 158 were adults and 109 children under the age of fourteen.

The annual report of the Executive Committee gives some interesting details of the work of the hospital. Of the whole number of cases treated 188 have been classified as surgical and 79 as medical, and the very large proportion of the former has not arisen from an influx of accidents and casualities. It is to be attributed to the fact that the hospital offers inducements to a large and very important class of surgical patients who have been hitherto unprovided for in this vicinity. It is because it affords excellent opportunity for the surgical treatment of gynecological cases and for the successful management of deformities and diseases of the bones, joints and the spine.

It is quite probable that the number of operations connected with these classes of surgical disease performed since the opening of the hospital has been larger, in proportion to the number of patients under consideration, than is usual in hospitals elsewhere of equal size.

The Committee think that, if it were possible, it would be now a useful and desirable thing to provide a department for the treatment of diseases of the eye in young children. A training school for nurses has been instituted, with five pupils. One hundred and ninety-five patients have been visited at their homes by the medical officers of the dispensary.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 14, 1889.

Cities.	Estimated Population for 1889.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,571,558	610	206	13.12	20.96	2.88	1 12	6.08
Philadelphia	1,040,245	366	118	14 31	6.75	.27	2.97	6.75
Chicago	830,000	—	—	—	—	—	—	—
Brooklyn	814,505	—	—	—	—	—	—	—
Baltimore	500,343	158	59	11.97	13.86	—	2 52	5.76
St. Louis	450,000	—	—	—	—	—	—	—
Boston	413,567	153	41	16.25	13.65	1.30	—	7.15
New Orleans	250,000	—	—	—	—	—	—	—
Cincinnati	225,000	110	—	9.09	19.11	—	—	7.28
Washington	225,000	96	28	—	—	—	—	—
Pittsburgh	230,000	—	—	—	—	—	—	—
Milwaukee	215,000	—	—	—	—	—	—	—
New Haven	82,000	—	—	—	—	—	—	—
Nashville	65,153	13	4	15.38	—	—	7.69	—
Charleston	60,145	36	9	16.68	—	8.34	5.56	—
Portland	40,000	12	5	25.00	—	8.33	—	—
Worcester	78,292	22	6	22.75	13.65	4.55	-	13.65
Lowell	71,518	42	15	28.56	7.14	7.14	4.76	16.66
Cambridge	65,552	19	4	21.04	21.04	5.26	—	15 78
Fall River	62,647	16	5	—	25.00	—	—	—
Lynn	53,334	12	0	8.33	8.33	—	--	8.33
Springfield	40,731	13	4	15.38	15 38	—	—	15.38
Lawrence	40,619	19	9	31.56	5.26	—	5.26	26.30
New Bedford	37,253	9	4	—	22.22	—	—	—
Holyoke	35,872	—	—	—	—	—	—	—
Somerville	34,418	—	—	—	—	—	—	—
Salem	29,011	14	1	7.14	—	—	7.14	—
Brockton	28,813	--	—	—	—	—	—	—
Chelsea	28,167	6	1	—	33.33	—	—	—
Haverhill	26,058	9	2	11.11	22.22	—	—	11.11
Taunton	25,170	7	0	14.28	—	—	—	14.28
Gloucester	24,263	1	0	—	—	—	—	—
Newton	21,553	--	—	—	—	—	—	—
Malden	19,774	5	1	20.00	20.00	20.00	—	—
Fitchburg	17,534	6	2	—	—	—	—	—
Waltham	17,332	2	0	—	—	—	—	—
Pittsfield	15,502	5	2	20.00	20.00	—	—	20.00
Attleborough	15,425	—	—	—	—	—	—	—
Newburyport	13,875	6	3	—	33 33	—	—	—
Quincy	13,728	5	1	20.00	20.00	—	—	20.00

Deaths reported 1,812: under five years of age 530; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 237, acute lung diseases 251, consumption, 246, diphtheria and croup 121, typhoid fever 33, diarrhœal diseases 33, scarlet fever 14, whooping-cough 12, measles 8, cerebro-spinal meningitis 7, erysipelas 2.

From scarlet fever, Philadelphia 8, New York 5, Boston 1. From whooping-cough, New York 5, Baltimore 4, Washington, Nashville and Portland 1 each. From measles, Philadelphia 5, New York 3. From malarial fevers, New York, Philadelphia, and Baltimore 2 each. Charleston 1. From cerebro-spinal meningitis, New York 3, Cincinnati 2, Philadelphia and Worcester 1 each.

The meteorological record for the week ending Dec. 14, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: –

Week ending	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
Saturday, Dec. 14, 1889.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.		8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 8	30.21	43.0	52.0	34.0	82		83	82.0	S.W.		S.E.	3		9	C.		R.	1.00	T.
Monday, .. 9	30.12	55.0	62.0	48.0	94		69	82.0	S.W.		S.W.	18		8	R.		C.	14.30	.25
Tuesday,..10	30.36	42.0	45.0	39.0	68		85	76.0	N.W.		E.	13		16	C.		O.		.0
Wednes. ..11	29.88	48.0	54.0	42.0	100		58	79.0	S.E.		W.	11		21	F.		O.	3.00	.22
Thursday,.12	30.07	42.0	47.0	38.0	66		43	51.0	W.		W.	15		7	C.		O.		.0
Friday,....13	29.95	44.0	53.0	34.0	65		50	58.0	S.W.		W.	14		17	O.		F.	0.10	T.
Saturday,.14	30.22	22.0	24.	19.9	61		93	77.0	N.W.		N.	8		15	O.		N.	6.45	0.20[2]
Mean for Week.	30.11		48.0	36.0				72.0											.67[3]

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. [3] Snow. [3] Total for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 14, 1889, TO DECEMBER 20, 1889.

First Lieutenant **R. R. Ball**, assistant surgeon, is relieved from temporary duty at Fort Sill, I. T., and will return to his proper station, Fort Riley, Kansas. Headquarters Department of the Missouri, Fort Leavenworth, Kansas, December 12, 1889. Special Orders, No. 182.

By direction of the Secretary of War, Lieutenant-Colonel **Charles T. Alexander**, surgeon, will be relieved from duty as medial director Department of the Columbia, on receipt of this order at the headquarters of that department, and will report in person to the commanding general Division of the Atlantic, for the purpose of preparing for, and becoming familiar with the duties of attending surgeon in New York City. He will also, upon his arrival in New York assume the duties of examiner of recruits in that city. Major **William E. Waters**, surgeon, will take temporary charge of the office of medical director Department of the Columbia, upon the relief of Lieutenant-Colonel Alexander, and perform the duties pertaining thereto. S. O. 291, A. G. O., Washington, December 14, 1889.

With the approval of the Secretary of War, the leave of absence granted Captain C. N. B. **Macauley**, assistant surgeon, in S. O. 166, November 8th, Department Missouri, is extended one month. Par. 10, S. O. 294, A. G. O., December 18, 1889.

Leave of absence for one month is granted Captain **George McCreery**, assistant surgeon, U. S. Navy (Fort Warren Mass.), to take effect upon the arrival at that post for temporary duty of Captain **Samuel Q Robinson**, assistant surgeon. Par. 6, S. O 290, Division Atlantic, December 18, 1889.

Captain **Samuel Q. Robinson**, assistant surgeon U. S. Army (Fort Hamilton, N. Y H.), will proceed without delay to Fort Warren, Mass., and report to the post commander for temporary duty. Par. 5, S. O. 289, Division Atlantic, December 18, 1889.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U S. NAVY FOR THE WEEK ENDING DECEMBER 21, 1889.

Kite, I W., assistant surgeon. Promoted to be a passed assistant surgeon, U. S N.

Stone, E. P., assistant surgeon. Promoted to be a passed assistant surgeon, U. S. N.

Morton, O. D., assistant surgeon. Promoted to be a passed assistant surgeon, U. S. N.

Henry, Charles P, assistant surgeon. Placed on the Retired List, U. S. N.

Pickrell, George M C., assistant surgeon. Ordered to Navy Yard, Washington, D C., for temporary duty.

BOOKS AND PAMPHLETS RECEIVED.

The Influence of the Cold Bath Treatment on the Hospital Mortality of Typhoid. By F. W. E. Hare, M.B., M.R.C S.E. Reprint. 1889.

Report of the Surgeon-General of the Army to the Secretary of War, for the Fiscal year ending June 30, 1889. Washington Government Printing Office. 1889.

Clinical Lectures on Some Obscure Diseases of the Abdomen. Delivered at the London Hospital, by Samuel Fenwick, M.D., F.R C.P., etc. London: J. & A. Churchill. 1889.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States, for the Fiscal year 1889. Washington Government Printing Office. 1889.

Saunders' Question-Compends, No. 5. Essentials of Obstetrics, arranged in the form of Questions and Answers. Prepared especially for Students of Medicine. By William Easterly Ashton, M D Philadelphia: W. B. Saunders. 1890.

A Case of Tuberculosis Papillomatosa Cutis, with remarks on the relation of papilloma to syphilis, lupus, etc. Illustrated with chromo-lithographic plates. By Prince A. Morrow, A.M., M.D. New York: William Wood & Co. Reprint. 1888.

Injuries and Diseases of Nerves, and their Surgical Treatment. By Anthony A. Bowlby, F R.C.S. Surgical Registrar and Demonstrator of Practical Surgery, etc., at St Bartholomew's Hospital, etc. Philadelphia: P. Blakiston, Son and Co. 1890.

The Physician's Leisure Library. Diabetes Mellitus and Insipidus. By Andrew H. Smith, M D. The Physician's Leisure Library. Education and Culture as Relates to the Health and Diseases of Women. By Alex. J. C. Skene, M D. Detroit, Mich.: George S. Davis. 1889.

Essay on Medical Pneumatology, a Physiological, Clinical and Therapeutic Investigation of the Gases. By J. N. Demarquay, Surgeon to the Municipal Hospital, Paris, and of the Council of State, etc. Translated with notes, additions and omissions. By Samuel S. Wallian, A.M., M.D. Illustrated with fine wood engravings. Philadelphia and London: F. A. Davis. 1889.

A Guide to the Diseases of Children. By James Frederic Goodhart, M.D., F R.C.P. Physician to Guy's Hospital, and lecturer on Pathology in its Medical School, etc. Rearranged, revised and edited. by Louis Starr, M.D, Clinical Professor of Diseases of Children in the hospital of the University of Pennsylvania, etc. Second American, from the third English edition, with numerous formulæ and illustrations. Philadelphia: P. Blakiston, Son & Co. 1889.

A Handbook of Pathological Anatomy and Histology, with an introductory section on Post-mortem Examinations, and the method of preserving and examining diseased tissues By Francis Delafield, M.D., Professor of Pathology and Practical Medicine, College of Physicians and Surgeons, New York, and T. Mitchell Prudden, M.D., Director of the Laboratory of the Alumni Association of the College of Physicians and Surgeons. New York. Second edition, illustrated by 22 wood engravings printed in black and colors. New York: Wm Wood & Co. 1889.

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